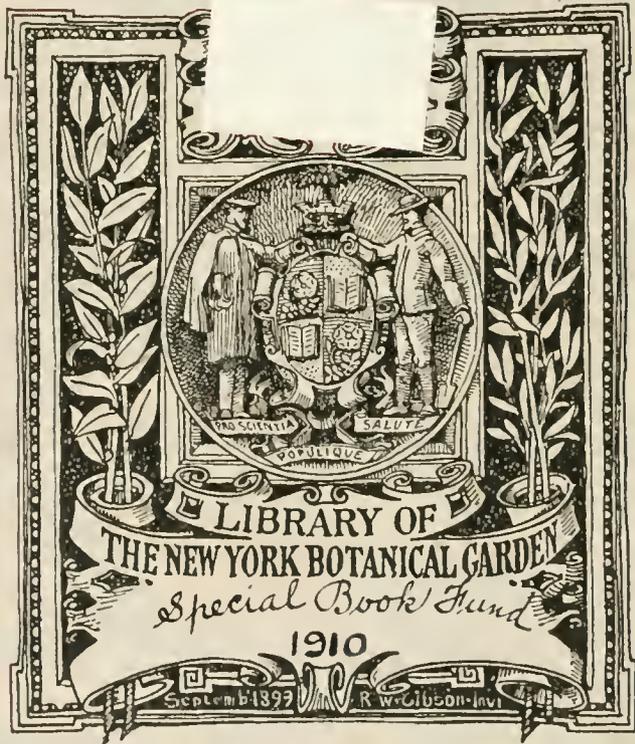




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THE
JOURNAL OF HORTICULTURE,
COTTAGE GARDENER,

AND
COUNTRY GENTLEMAN.

A MAGAZINE OF GARDENING, RURAL AND DOMESTIC ECONOMY, BOTANY AND
NATURAL HISTORY.

CONDUCTED BY

GEORGE W. JOHNSON, F.R.H.S., AND ROBERT HOGG, LL.D.

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BOTANICAL
GARDEN.

VOLUME X., NEW SERIES.

VOL. XXXV., OLD SERIES.

LONDON:

PUBLISHED FOR THE PROPRIETORS, 171, FLEET STREET.

1866.

XI

0912

Jan. June
1866

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

TO OUR READERS.

WE have seen a ballad, whether a plagiarism of "Chevy Chace," or "Chevy Chace" a plagiarism of it, we leave to your determination—for you will recollect how often the ancients have robbed and forestalled us—saying things we should have said, and doing things we should have done, had they not thrust themselves in before us. The ballad begins thus—

" God prosper long our noble Queen,
Our flowers, and fruits, and all,
A Show of which was lately seen,
Called ' International.'
Sir Wentworth, sturdy knight, was there ;
Sir Daniel, brisk was he ;
And Moore, and Hogg, and Masters too,
Each busy as a bee."

The ballad then in detail, fuller than this brief page will admit, proceeds to enumerate the floral forces marshalled under various leaders—

" Proud Orchids led by Veitch, were there,
And Roses, led by Paul ;
Azaleas by Turner—but
We cannot name them all."

The bard then changes the scene to the Guildhall, describes the feast, and goes on to observe—

" The banquet o'er—the guests all gone—
The servitors away—
And aching heads bemoaned next morn
What stomachs did that day."

The ballad does not, as might be expected, there close, but goes on to record a conversation that took place when all was quiet between Gog and Magog. The latter was unable to make out who the guests were.

" Lean men they were, and men of sense,
With appetites so small ;
Some German talk'd, and some talk'd French—
Aldermanic not at all."

Gog, however—evidently a better informed Giant, and certainly a good judge—enlightens his brother, and explains who everybody was. Amongst others

" THE COTTAGE GARDENER was here—
Or GARDENERS I should say :
Its staff 's a legion world-wide spread,
And its Editors are tway."

Gog then pays us compliments which would turn our ink red to print, concluding, as we will, with this mingling of the true and the prophetic—

" Our masters read it—almost all :
'Tis Copeland's ' Tuesday's treat ;'
And Mechi has it yearly down
In his fam'd ' balance-sheet.'
He says, ' It 's better ev'ry year,
Its volumes thirty-four ;
And, Cumming being once more wrong,
They 'll be as many more.' "

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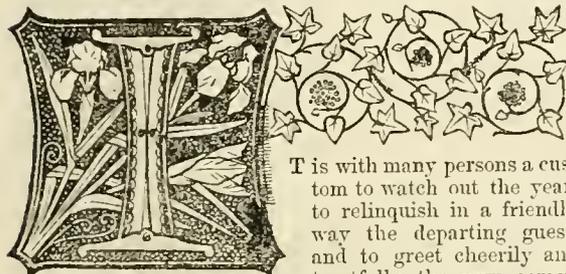
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WEEKLY CALENDAR.

Day of Month		Day of Week.	JANUARY 2—8, 1866.			Average Temperature near London.			Rain in last 53 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.		
2	TU	Leucostictus flowers.	42.5	29.6	36.1	15	8	af 8	1	0 af 4	4 af 6	28	8	15	4	20	
3	W	Rosemary flowers.	42.8	30.8	36.8	19	8	8	1	4	14	7	59	8	16	4	48
4	TH	Black Hellebore flowers.	42.3	31.3	36.8	17	8	8	2	4	93	6	29	9	17	5	15
5	F	Polyanthus flowers.	41.6	30.8	36.2	14	8	8	4	4	31	9	55	9	18	5	42
6	S	EPIPHANY, 12th Day.	41.0	28.9	34.9	14	7	8	5	4	35	10	21	10	19	6	9
7	SUN	1 SUNDAY AFTER EPIPHANY.	41.4	28.6	35.0	15	7	8	6	4	33	11	44	10	20	6	35
8	M	Stinking Hellebore flowers.	40.7	29.7	35.2	11	7	8	7	4	morn.	7	11	(	7	1	

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 41.7°; and its night temperature 29.9°. The greatest heat was 57°, on the 8rd, 1860; and the lowest cold 4°, on the 2nd, 1854. The greatest fall of rain was 0.86 inch.

A HAPPY NEW YEAR!



It is with many persons a custom to watch out the year, to relinquish in a friendly way the departing guest, and to greet cheerily and trustfully the new comer.

Although I had experienced a rather fatiguing day, I was determined thus to act. Undeterred by the reiterated arguments and warnings of my better half, who remarked, "What folly! Why, you know you 'll be asleep in a few minutes! You are as tired now as you can be!" I waved her away, my determination was unalterable. I would hear the old year rung out, or at least sit up till the time when that ceremony takes place, and so I only replied—

"Ring out, wild bells, to the wild sky,
The flying cloud, the frosty light;
The year is dying in the night,
Ring out, wild bells, and let him die."

And yet, to tell the strict truth, it was useless waiting for our village bells to ring out, as we have but three, and one of those is cracked; so wisely we do not ring in the new year, fearing that if we commenced the operation we might frighten him away altogether.

Left to myself, the house was soon quiet. Silence and night are the times for visions. How many persons in company together have ever seen a ghost? The fact is that these supernatural beings agree with the proverb, "Two are company; three, none," and they prefer making their visits to single gentlemen and ladies—not necessarily bachelors and spinsters, but a state of single blessedness, whether of long or short duration, appears necessary to enable us mortals to make their personal acquaintance.

Determined to resist any attacks of "Nature's sweet restorer," I had ordered coffee, and indulged in a strong cup of the refreshing beverage; I soon was hard at work, pen in hand, indulging in some stave to be inflicted first on "our Editors," and, by their sanction, on the readers of "our Journal." My pen ran fast and furiously. I could hardly believe my eyes, but the hands of the clock marked 11.45 p.m.! Was it possible? Well, the pile of manuscript showed I had not been idle, and my watch agreeing as to time, I rested my head on my hand, intending to meditate away the remaining moments of the year. I was soon lost in a reverie. New friends, alas! too frequently usurp the place of the old; the rising deity is worshipped. I would not, however, be so ungrateful to my expiring friend; he had been the bearer to me of many mercies, and as these rapidly flitted through my brain, I trust I felt grateful to the Giver of all good; A.D. 1865 would be in my diary a year of mercies and pleasant memory. And now, whether the weird influence of the near approach

of the first small hours of the new year, or the expiring moments of the old, or whether these were striving for the mastery I cannot determine, but visions appeared and vanished before my mental sight with great rapidity. Remember, I was not asleep! Mrs. "Y. B. A. Z." might have been certain I was; nay, she would have brought forward the closed eye and the heavy regular breathing as conclusive evidence of her view of the case; but every one knows how conducive to sound meditation is that closure of the lids, which separates us from the material world, and allows our thoughts free scope. It is, perhaps, often mistaken for sleep; but who, I ask, is the best judge—the person looking on the closed eye, or the unconscious person so absorbed in thought? Let common sense determine. As I have already remarked, I did not, although I might have felt disposed, intend to go to sleep—of course not! therefore Mrs. "Y. B. A. Z.'s" theory must go for what it is worth!

As I had been writing for "our Journal," it was natural that my meditations should be on the same subject. I reflected on the eagerness with which I hailed the weekly issue, not *weakly*, mind you, for none of us are disposed to think lightly of anything in which we ourselves sometimes bear a part, however insignificant. Besides, was it not *our* Journal? I seized the last Number, and scanned its contents, and I became identified with the various contributors, and was fairly, I presume, under some mesmeric influence. I was in a part of the country new to me, surrounded by busy workers, and I fancied myself metamorphosed into "DEVONSHIRE BEE-KEEPER," and I was dismal and desponding under a visitation of foul brood, but perseverance rendered my apiary again flourishing and contented; yet as I looked at this longed-for result, I saw on the table before me a small bell-glass, hermetically sealed, containing a curious substance; it was labelled, "The last trace of foul brood. Lo(we), there it is." Then I was no longer the "DEVONSHIRE BEE-KEEPER," but "FULIX-FEMINA," scrambling after some rare specimen of Fern high aloft, a treasure I had long coveted, to wit— Well, I do not doubt but that I could find some suitable Fern name that would do duty, but botanical names are a somewhat tender point with me, and I forbear. I have a painful recollection of losing caste in my younger days. Veronica heccabunga is one of the few botanical names that fastened itself on my memory. The name, alas! was only there, and in me it had no connection with any plant, yet being, as the old woman said of Mesopotamia, such a comforting word, it often served me for reply when appealed to for the name of any plant. Failing this reply, I generally coined some word, making it a *sine qui non* that it should contain four syllables. On one occasion, when out with several friends, who were aware of my penchant for Veronica, the question arose, What was the name of that little plant in the brook? I was referred to. It was a moment pregnant with my botanical fate! it was the tide in my history, which I failed to avail myself of. Had I but continued constant to Veronica I might ever after, maintaining a discreet and convenient silence, have passed for a botanical authority, perhaps even for a genius. *Miserabile dictu*, I coined a word,

BRAD
EW YO
BOTANI
GARDE

instead of replying my stock name. Ah! the evening's reference to a botanical work came like a "Withering" blast on my botanical knowledge: it proved that even my stock plant was unknown to me! Excuse me, then, if I forbear to hazard any Fern name, it was present, and I knew it; for was I not "FLIX-FEMINA?" I struggled on to grasp my trophy, but just as success appeared certain, the scene shifted, the rocks seemed divided into compartments, most of them tenanted by some living specimen. I was in a poultry show alone, "the monarch of all I surveyed;" in fact, I was Judge—a book of classes and numbers in my hand, instead of the much-coveted Fern, which was "gone from my gaze." I paced up and down, settled the merits of the various rivals, gave in my decisions, and the public were admitted. Soon I found myself surrounded on all sides by malcontents, vainly endeavouring to answer a dozen at once. I begged to be allowed reference to my numbers, the list appeared different. I became confused, and was only recovered by a voice exclaiming, "That is not the Judge, but the gadman who judges the Judge, and criticises birds and committee, that's 'WILSHIRE RECTOR.'" I felt he was quite correct, I smiled, and passed through the crowd; and my list of numbers was the printed catalogue, with my remarks in pencil, for "our Journal." Referring again to my catalogue, a metamorphosis had occurred; it looked more like a petition, very numerous and, as the county paper would say, influentially signed; my identity with "our Chaplain" became very doubtful. Manifestly I was now a railway director, and the petition was that of poultry exhibitors, praying to be relieved in some degree from the expenses attendant on their journeys. Cogitating what reply to make, I was on the point of speaking, when, glancing at the petition, I found it to be the last Number of the 1865 series of "our Journal," and I seemed to be the proprietor! Ah! this was vastly too good to be true! I wonder it had not roused me. I feel certain that if Mrs. "Y. B. A. Z.'s" theory of sleep was correct, it must have done so! I turned over the pages, glanced at the long rows of advertisements, which seemed bent on crowding out the other portions of the work, and, hesitatingly, I asked myself, "Must we increase its size?" This is a step requiring great consideration. To alter the form of an old friend is sometimes to lose him altogether. The difficulty was great, but I felt that something must be done if they maintained the same rate of increase. In the height of my dilemma as to the settlement of this knotty point the strangest sensation overpowered me. Every one has heard of the Siamese twins, well, I felt in a measure like them; I was united to somebody, but, unlike the twins, we were intent on different portions of the same subject. Gradually I became sensible that my twin brother and I were "our Editors." Other editors usurp the editorial plural; we, from our duality, were entitled to it. Seated on our high official thrones in the dark, dingy, smoky 171, Fleet Street, we mused over the new-year Number, determined that out of our metropolitan darkness we would throw light and sunshine over the world. We reflected gratefully on the new friends of the past year, and then on our success. Suddenly we became aware of the presence of a large number of contributors outside our editorial sanctum, anxious to testify to us their kindly feeling and their unabated interest in our periodical. To me individually it seemed very pleasant to be introduced to the various characters. I noticed plainly "D., Deal," with new Rose catalogues of 1865 in his hand. Strangely enough, as his eye fell on some of the names, his hand moved, as if writing, and the names of various Roses were blotted out, and the stock seemed withered already. "RUSSTON RADCLIFFE," again, with a present of Peaches and Strawberries; how produced now was the mystery, but then he makes adverse circumstances bend to his will; the last bunch of Roses, too, was in his hand. The thought presented itself, How will they flourish under this new régime? "FLIX-FEMINA," too, came back from Rome on purpose, "ALICE" and "FEAR-HENTNESS" also; and the loaded cases showed that they would have something to say in 1866. Many others, too, in the floricultural department all seemed to say to us, "UPWARDS AND ONWARDS." As representatives of the other portions, there was "OUR CHAPLAIN," with his warm-hearted greeting, and catalogues innumerable of 1866 under his arm, and I wondered at the impropriety of such ante-printing; but then he is privileged; then Ma. HEWITT with a lot of notes supplementary of the "Standard of Excellence," and B. P. BRENT with remedies for all kinds of diseases, and "EGOMET," "OLD" and "YOUNG COCHINS," "BRAHMAS," and positively an "IMPRISONED TURKEY," but with plumage quite uninjured, and looking quite contented and happy. On one side there was "DEVONSHIRE

BECK-KEEPER" looking as though he had never had to do battle with foul brood, and the Scotch bee-keepers revelling in their heather, and then the alphabet seemed all sixes and sevens, A refused any longer to concert with B, but had singled out some distant member, and they were so closely united, they might always have been so. A similar fit had seized the other letters. Overpowered by this unexpected demonstration, we rose simultaneously, and expressed our gratitude at meeting so many of our friendly contributors, and assured them of our earnest endeavour to render "our Journal" worthy their support, adding that their warm-hearted kindly greeting would go far towards making the new year happy and prosperous. We closed with reciprocating their good wishes, we trusted that the new year would prove to each and all a Happy New Year. Scarcely had the words passed our lips, when we were conscious that some other person wished to enter, and our eye caught that of a stranger of unprepossessing appearance, who pushed forward and politely presented us with a parcel. Removing the envelope it contained an Apple, labelled "Apple of Discord." We replied he must have mistaken his destination, that our endeavours were exerted to increase and extend harmony and good feeling, our lives spent in sowing broadcast over the world the love of all God's creatures, and that we desired, that through the works of creation the love of human beings might be directed up to Nature's God, who was Himself the God of harmony, peace, and love; and lastly, that our hearts were set on making the new year a truly happy year to all, but especially to all our kind friends and contributors. We have just expressed these sentiments, we intend to stand or fall by them; we, therefore, assure you that in the pages of "our Journal," no such fruit will ever be discussed. Seeing his error, he was retiring, leaving, however, the objectionable offering on our desk; we, therefore, as gently as our excited feelings would permit tossed the Apple after him. As it fell to the ground, a loud explosion, which dispersed all our friends, proved how base were the intentions. The report recalled me to my own little world, and I found it was

"Midnight,
And the clocks were striking the hour."

The Old Year had passed away, the New Year with all its hopes and anxieties was entering the threshold. My coffee-cup was no longer on the table, but in fragments at the foot of the opposite wall, and the marvel was, How did it get there? Moreover, on my footsack, where I had commenced my meditations, there was now a most curious hieroglyphic, which might have passed for the signature of some Chinese or Persian contributor; whilst the previous writing was shaky and uncertain, and I, who had figured in those few moments as the representative of so many distinguished persons, found that although thoroughly endorsing all "our Editors' kindly wishes for the New Year," yet I was neither our respected Editors, nor the lucky proprietors, but simply that unknown quantity—Y. B. A. Z.

REMOVING AND PLANTING FRUIT TREES.

To describe the system which I adopt, and the cause of my adopting it, it will be necessary for me to revert to the scenes of my early childhood, and to touch upon the Apple-tree nurseries in the neighbourhood of Chard, in Somersetshire. Two miles to the south-west of Chard, on the main road to Axminster and Honiton, is situated the pleasant little village called South Chard. In this village there lived a family named Dean, famed for the cultivation of young Apple trees. Here many acres of the Apples suitable for cider-making were grown, and the quantity of trees sold by this family every year to persons far and near, proved how well their trees were appreciated. The clean straight stem, the well-regulated head, and the mass of beautiful, clean, fibrous roots, added to the confidence reposed in the raisers, that the kinds were what they were represented to be, gained at once for them a ready sale. Samples of the trees were exhibited in the market towns in the first week in October, and through the planting season. It is now many years since I saw these neat and well-kept nurseries; but well do I remember when a boy, lingering near them to admire the luxuriant growth and symmetry of the trees, and the exact distance apart at which they were planted, for stand which way you would the trees appeared in rows as straight as an arrow.

In describing the mode of cultivating the Apple tree adopted by Messrs. Dean, I must be guided entirely by memory, for I have not seen the nurseries nor their kind-hearted proprietors since I was a boy, but the lesson I then learnt by watching the

operations in progress, when chance took me that way, have never been forgotten. They have been a never-failing guide to me ever since I have been capable of thinking for myself; and whenever anything in the varied practice of the garden in connection with fruit trees engaged my attention, what I saw when a boy comes fresh before my mind.

The sort of land which the Messrs. Dean selected for their new plantations was a piece of old pasture, which, I may remark, in that neighbourhood is deep, rich, and very favourable for the cultivation of the Apple. The land, after being well manured, was dug a good spit deep, turning the grass all to the bottom. The young stocks were then planted about 15 or 18 inches apart in the rows, and 3 feet between the rows. This operation was generally performed early in October, and the stocks would be well established by the following March, when they were grafted close to the ground. During the following season they would throw up strong shoots, and strong posts were then driven in at intervals up the row, stout strings fastened to them, and to these the young shoots were tied, so as to prevent their being injured by wind, &c. In the autumn after being pruned, a large quantity of furze was spread all over the ground, covering the young trees to a depth of 2 feet or more up their stems. They were then cut back to 6 feet 6 inches in height. At this height from the ground the heads were formed, the stem being kept clear of all shoots; and in two years from this time the trees were perfect models, and fit for the orchards. By this time, too, the furze had become completely decayed, and most of it was appropriated by the thousands of small fibrous roots which the tree had been induced by the furze to emit from its collar. The tendency of the tree to send its roots deep down into the soil was thus prevented; and the genial moisture kept on the surface by the furze, and the warmth of the atmosphere above, all had a tendency to attract the roots upwards. When the trees were taken up they presented a perfect mass of beautiful roots, not one strong tap root was there to be seen. This will illustrate the advantages to be gained by mulching fruit trees with furze.

In the removal and planting of trees of any kind, care must be taken—

1st, To keep at a proper distance from the tree when digging around it. If it is a large tree that has to be removed, it is necessary to dig a trench about 2 feet wide, and 2 feet deep, more or less, according to the depth of the roots, and about 4 feet from the bole of the tree all round. The soil should then be regularly but carefully worked out from amongst the roots with a fork, and the roots tied up as the operation is carried on. As the roots are placed out of the way the soil must be thrown out of the trench. This must be continued till the roots have all been secured, and enough soil taken away to allow of the tree being removed, but on no account should it be twisted about before the roots have all been properly loosened. If these have been carefully preserved from injury there is no necessity for removing a large quantity of soil with the tree; the attempt to do this often causes very serious injury, for the weight becomes unmanageable, and the tree is often put down after scuffling along with it a few yards, sometimes not very easily. By the time the tree reaches its destination most of the soil will have been shaken from the roots, and these will have been very much damaged, which is a loss, and a great drawback.

2nd, The proper time for removing fruit trees, such as Apples, Pears, Peaches, Plums, Nectarines, &c., when it can be done without injury to the crop of fruit which the trees may have on them at the time, is before the sap begins to recede. This will be the first week in October, or they may be removed in the third week of September, if the weather is not too dry at the time; and even if this should be case, if some green branches of any kind are stuck in and around the trees, and the syringe freely used about them two or three times daily, they will suffer no injury.

3rd, I now come to one of the most important points in connection with the planting of the tree. Never dig a deep hole to plant it in, but rather plant it on the surface after breaking this up with a spade. After the tree has been placed in the position it is to occupy, the roots should be carefully straightened out all round, and any that may have been injured should be shortened back with a sharp knife; some fine soil should be at hand, this should be sprinkled evenly amongst the roots so that all the small apertures may be well filled up, using plenty of water at the same time, and the tree should be frequently moved to and fro until the roots have become firmly imbedded in the soil. A bank should then be thrown up just at

the extremity of the roots, to keep the water from running away from the tree; this should be on a level with the collar, or if it is a little higher it will be no worse. Several potsful of water may then be thrown about the tree, and holes made from the surface down amongst the roots. The water will by these means settle the soil nicely about the roots; more fine soil and water should then be put round, and the water standing on the surface will soon show when all the vacant spaces about the roots are filled up. The tree should then be left, and after the next to be removed has undergone a similar process the water will have gradually soaked away through the soil, leaving the latter well settled about the roots. More soil should then be banked up around the tree, which must also be well secured to prevent its being blown about by high winds.

For securing large trees I generally drive four strong stakes into the ground, east, west, north, and south, and after they have been firmly driven in I fasten the trees to them; round the stem, however, must be put a good stout collar made of some soft material, such as an old guano bag, in order to prevent the ropes from injuring the bark. Some of the branches should also be cut out if the tree is large, so that the roots may not have too much work to do. If all go on well these will soon be at work, and the tree will draw sufficient nourishment from them to enable it to stand the winter without suffering any ill effects from its removal. If it is well mulched so that the frost cannot penetrate so deep as its roots, they will be active all through the winter. One of the great advantages to be gained by removing fruit trees in this way is, that there is no fear of sacrificing the crop of fruit. In the following year, if they are carefully managed, they will produce fruit nearly if not quite as fine as they would have done had they not been moved.

One of the great advantages gained by planting on the surface is this: The sun has more power on the roots; these consequently become well ripened, and the tree, instead of drawing up more sap than it can make use of at once, draws it gradually, and equally distributes it to its numerous branches, so that it performs its functions with greater regularity. The tree also grows less luxuriantly, and consequently matures both root and branch as it grows; all the small branches and spurs are covered with fruit-buds; and instead of the roots going down they will be spreading near the surface. When the tree is planted in a hole made for it to a depth of perhaps 2 feet or more (and in many cases the hole is made even deeper than that), a foot or more of good soil is probably put into the bottom of the hole; but this is the worst plan that could be adopted, because it encourages the roots downwards. The first roots that take hold of the good soil in the bottom of the hole soon become tap roots, then away they strike still further down into the clay, or whatever the bottom is composed of. These roots throw up sap faster than the tree can dispose of it: hence the long unripened shoots which must yearly be cut away, gradually hastening the tree to its decay. We see it year after year making rapid growth, but no fruit is produced. After a time the tree decays, and is replaced by another, which in the course of time follows in its wake.—J. WILLS.

FORCED RHUBARB ON CHRISTMAS-DAY.

HAVING observed some remarks made by Mr. Fish in your Journal, at page 508, respecting Rhubarb-forcing, I wish to state my experience in forcing this vegetable.

In the first place, then, I may say that I sent in two good dishes on the 22nd inst., and had some ready four or five days previous to that, about which time, I presume, Mr. Fish wrote his article, so that, I think, mine must have been ready a week before his. I have had plenty of it since. The roots, which are three or four years old, were transplanted into rich soil last March (they had been previously grown in poor soil), and were taken into the Mushroom-house on the 25th of November, the temperature being from 60° to 65°. Some light rich soil was put round them, and they were syringed daily, which caused them to commence growing at once.

I have formerly endeavoured to have Rhubarb at Christmas by introducing it into a temperature of 65°, afterwards gradually increasing the heat to 75° and 80°, but with somewhat indifferent success. I therefore conclude that Rhubarb can be accelerated with a greater degree of certainty with a uniform temperature of from 60° to 65° than by subjecting it to one 10° or 15° higher; indeed, I think that the temperature above recommended and darkness are two most essential points in Rhubarb

forcing. I beg to add that this communication is by no means intended as a disparagement of Mr. Fish, as his is by far too wise a head to learn anything from me; but I thought it might be useful to those who may experience a little difficulty in obtaining a dishon Christmas-day.—R. F., *Liverpool*.

HERBACEOUS CALCEOLARIA CULTURE.

In order to have fine plants to flower in May and June, the seed should be sown in July in the following manner:—Take a common seed-pan with plenty of holes in the bottom, fill the pan rather more than half full of drainage, and upon this place a thin layer of fresh moss, then fill up the remaining space with a compost of loam, leaf soil, a very little peat and sand, well mixed, but not sifted. Some of the roughest parts of the compost should be placed at the bottom over the drainage; 1½ inch of soil is quite depth enough for the seed. Cover the soil with a very thin layer of sand, give a good watering through a fine rose, and let the pan stand for two or three hours to drain; then sow the seed, taking great care to distribute it equally over the surface. Sometimes the seed is sown all in patches, and the young plants come up so thickly that they cannot succeed as they otherwise would.

After sowing the seed; press them in gently with a piece of slate or other smooth surface; then give the slightest possible covering of dry sand, set the pan aside, and give a very gentle bedewing either with a very fine rose or syringe. Select the coldest and most shady part of the garden; cover the pan with a piece of glass, and the whole with a large hand-glass. Keep the atmosphere of the hand-glass damp and cold by daily sprinklings all round the pan in dry hot weather; the soil in the pan rarely needs any water from the time the seed is sown till the seedlings begin to come up, providing all about the pan is kept damp and the sun totally excluded. It is usually about nine days before the young plants begin to show themselves, longer if the seed is more than one year old, and as soon as they are fairly up the piece of glass laid over the pan may be removed, but the hand-glass should remain as it is for a fortnight, after which time it should be tilted so as to admit plenty of air, and in a little time it may be taken off altogether, but, in case of heavy rain, it will be necessary to replace it to prevent the plants being washed out.

As soon as the seedlings can well be handled they should be pricked out, about 1½ inch apart, in pans prepared as for sowing the seed, only not using quite so much drainage. After this replace them in their old quarters, and sprinkle them every evening through a fine rose to encourage growth. When they have become nice little sturdy plants they should be potted off singly in well-drained pots, again placed out of doors, and kept there as long as the weather will permit. They should, however, be so placed that they can be covered from the heavy rains which sometimes occur in September and early in October; they will also be benefited by more light as the season declines.

When housed the plants should be placed as near the glass as possible in a cold airy situation, either in the greenhouse or cold pit. They can hardly be kept too cold, providing damp air can be dispelled and frost excluded. Keep down green fly by frequent fumigation, which, however, should be very cautiously done; fumigate slightly and often rather than strongly and seldom. I have been disgusted before now, after fumigation, at finding half the leaves looking as though they had been scalded by hot water. They will not bear the smoke so strong as the leaves of the generality of plants. Shift the plants as they require it, never allowing them to become too much pot-bound. I always shift just when the roots will keep the drainage from falling about when the plants are turned out of the pot. When growing fast, and in a healthy condition, they like a liberal supply of water, which should be clear rain water.

In the spring, from March till the end of April, the plants are best kept in a frame set upon cinder ashes; thus placed, kept free from green fly, and screened from easterly winds, they usually make rapid progress. In these months slightly shade from the mid-day sun, and give them a gentle sprinkling with the syringe at shutting-up time; in sunny weather they seem to glory in a little moisture, and in the morning they will be covered with little dew-drops, which always indicate health.

When about to throw up their flower-stems they should be removed to the place where they are intended to bloom, taking

great care to keep down green fly, and paying attention to shading. If the plants are strong, which I presume them to be, it will be no slight task to tie them out properly—a task that always gives me great pleasure. The sticks should all be painted green, although I have been, and am now, obliged to use them unpainted. When the flower-stalks are rising a little very weak manure may be given twice a-week, but withhold it while the plants are in bloom, at which time they should be kept well shaded, otherwise the flowers will soon drop, but if, on the contrary, due attention be paid to shading, these will last a long time. Allow all the air possible on all occasions when the thermometer rises to 40°; they dislike fire heat.—CHARLES EDWARDS.

SOMETHING MORE ABOUT ROSES.

THE late Mr. Beaton was right in the main in preferring Roses on their own roots, and in supposing, for I do not recollect his having proved it, that the Manetti stock was a medium for getting them in that form. By comparing the facts furnished by contributors, and by actual observation in different parts of the country on the growth of Roses in different soils, I believe the truth, as far as yet ascertained, amounts to this—That Roses flourish on their own roots in a greater variety of soils than in any other form; that they do best on the Manetti stock in light soils, where sands of later formations predominate; and that they do well on the Briar (*Rosa canina*), where the Briar is found to grow most luxuriantly in its wild state, as on stiff chalky land, and some clays. Assuming these data as approximating reality, we can readily account for the preference given by so many cultivators to Roses on their own roots, for the Manetti being selected by others, and for the disappointment frequently expressed by purchasers of Roses on the Briar, because these have been transplanted into soils less adapted to the stock than that from which it was taken before the Rose was budded on it. If "COUNTRY CURATE" is growing Roses in all these forms, he will, before long, certainly find out which will be the best suited to his situation, and had he stated what kind of soil he is growing them in it would have rendered his inquiry a little easier to discuss.

The readers of this Journal are already aware of my advocacy of the Manetti stock, a lengthy defence of it would, therefore, be a needless repetition. The soil here is very light and of good depth, and being on a slight eminence is naturally well drained, the subsoil is the green ferruginous sand found in connection with the chalk system. I have at present in the garden about one thousand Roses in all forms, budded, grafted, on Briars high and low, and on their own roots. As I have stated above, the soil is of the kind in which I have always found the Manetti stock preferred; hence, I soon discovered the evident superiority of that stock for propagation to any other method, and that, too, as a medium for getting Roses on their own roots. Roses planted out in a soil like mine on their own roots, are very long in becoming strong, and vigorous enough to withstand all the vicissitudes of the climate—not so with well-budded Manetti plants, in nine cases out of ten they make strong shoots the first year, and in the second the flowers are satisfactory.

The theory of "COUNTRY CURATE" appears feasible enough, and may be worth a trial. As the Manetti will bear moving at almost any time in the year, I should recommend an earlier month than November for removing the patch of bark which he believes would be instrumental in hastening the formation of roots at the junction of stock and bud. If the trial be made at the end of September, or the beginning of October, the chance of causing a development of roots in the same autumn would be as probable as in the succeeding spring and summer.

There is a greater distinction between grafted Manettis and budded ones than many people would at first be inclined to believe. My experience thus far shows that Manetti stocks grafted under glass with artificial heat, useful as the plan is for securing a rapid propagation of new varieties, have drawbacks when planted out of doors. In the first season they are very liable to mildew, make little growth, and produce few flowers, and it is not till the second or third year that they become useful plants. I have also found that they do not readily throw out rootlets at the point of union. With budded Manetti stocks the case is different, provided they are budded as low as possible and with the stock in the open ground. If

budded early in the season, a plant is formed at once which should be removed in the autumn; and planted in such a soil as mine, the bud should not be less than 4 inches below the surface. I think "COUNTRY CURATE" will find, that if he plant deeply enough roots will be formed much more rapidly than when the junction is too near the surface; care must, of course, be taken that the root of the stock is not buried in wet cold soil, which will be very likely to cause the death of the plant. If Manetti stocks are budded late in the season, it is better to leave the bud dormant all the winter. This is done by deferring till the following February or March the cutting off any of the stock into which the bud is inserted. In severe winters some casualties may occur in late budding.

In October last I examined the roots of about fifty of my oldest plants, now grown strong. In most of the budded plants of more than three years old, roots had been formed upon the stems, springing from the point of union and that part of the first shoot below the surface. In the grafted plants which were bought, plants of the then new kinds, and propagated under glass, no such roots had been formed, although it is quite probable that they will be produced. Not wishing to remove the plants, I cannot say whether the stocks of those plants which have roots formed from the Rose are dead or not. I cut off several stems with roots on them and transplanted them to another place. As "COUNTRY CURATE" would probably like to know what kinds have formed roots of their own, in the way above described, I subjoin the list:—Général Jacqueminot, Jules Margottin, Caroline de Sansal, Cecile de Chabrilant, Senateur Vaisse, Duc De Cazes, Princesse Mathilde, Triomphe d'Amiens, La Ville de St. Denis, Triomphe de Paris, Cardinal Patrizzi, Louise Odier, Eugène Appert, François Arago, Empereur de Maroc, and Louise Carique.—ADOLPHUS H. KENT, *Blechingley, Redhill, Surrey.*

POTATOES.

I AM obliged to "UPWARDS AND ONWARDS" for his article at page 485. Apples and Potatoes are the most valuable of fruits and vegetables, because they can be cooked in more ways than any other.

As regards Potatoes, with me a dinner cannot be excellent without a good mealy Potato. The Potato lists will soon be as burdened with sorts as the Rose catalogues. Of course each new sort is said to be the best early, mid-season, or late Potato known. The difficulty is selection. Moreover, much depends on the taste of a person, the soil, culture, and seasons. As regards resistance of, or escape from the Potato disease, I do not believe that any sort can be said to be thoroughly defiant. The earliest ripeners are as a class the most defiant. I believe that the disease has outwitted everybody; it certainly has upset all my calculations. I have known sorts much stricken one year give the soundest Potatoes the next year, and *vice versa*. Till we find out the nature of the disease we shall never perhaps find the cure or prevention. Digging Potatoes before they are ripe is a great folly; you will lose just as many by it, and you will spoil what otherwise would have been good. They will be watery or waxy, the latter is to my taste the more offensive.

I must here observe there is but one way to cook and serve up Potatoes—namely, to steam them, and send them up in their jackets. When they are "done" the steam must not be stopped down upon them, or they will be soddened. Out of the number of professed cooks how few can cook a Potato well! how few can roast a chicken or boil a leg of mutton as it ought to be done! Give me a duck or chicken roasted by a farmhouse cook; the maid knows nothing of "made" dishes, and hence she attends to and properly bastes these great luxuries.

Let me, however, turn to selection. Mr. Rivers's ideas of selection are that the Royal Ashleaf is the best to begin with, the Lapstones to go on with, and the Flukes to finish with. If I were to select a few only I would select the Royal Ashleaf to begin with, Fortyfolds, and an admirable Kidney Potato sent here by a Yorkshire friend, said to be raised from the Ashleaf and Lapstone, to go on with, and Salmon Kidneys to end with. The last are the best latest Potatoes that I have ever eaten; they require high cultivation, and prefer strong land. I fear that people estimate Potatoes by size and crop rather than quality and crop. What is the use of the crop if the quality is bad? The *qualitas vocis* means a fine name, the *qualitas rei* means a good thing. In how many instances have we been beguiled by the *qualitas vocis*? Be guided rather by the nature

of things than by their names. If a commodity is good I care not whether it be called Noblesse or Stump the World. The former is aristocratic, the latter democratic, or rather mundane.

The following are also first quality Potatoes:—Breadfruits, Early Mans, or Mauns, Dalmahoy's, Flukes, Prizetakers, Red Kidneys, and Silver Skins; the last are the nicest looking of all the Kidneys. These are good Potatoes, and good croppers:—Mona's Pride, Early Handsworth, Scotch Rocks, called here also Scotch Downs.

Taking this season up to the present time I have not had anything, for crop and quality, equal to the seedling Kidney raised from the Ashleaf and Lapstone. Its formation is strictly "renal."

As regards planting, I think Kidney Potatoes, especially those that have mole's eyes, should be planted shallow, and should not be planted till the eyes have started. They should not be cut, or cut very much. I think that in dry seasons if Potatoes were watered they would ripen earlier, and be safer from the disease. I some years ago watered my Royal Ashleafs just as I water my Roses, and they had not one diseased tuber. Potatoes keep better, and are better flavoured, when dug after rain.—W. F. RADCLIFFE, *Tarrant Rushton.*

GARDENERS' WAGES.

THE education of gardeners is a question that has been freely discussed, and its importance I must admit. Education is very necessary in order that the employed may give satisfaction to the employer; for what a great pleasure it must be for a lady or gentleman to walk through the plant-houses accompanied by an intelligent gardener who can give a descriptive account of each plant that may be noticed. Yet this is expected from a class of men worse paid than many labourers. Take for instance one of hundreds of cases. A lad wishes to become a gardener; the first consideration, as a matter of course, is to find him a place in a first-class establishment, which can generally be managed by paying a premium, say £10, more or less at times, to the head gardener, the lad receiving 8s. or 10s. per week for three, four, or five years. His duties for the first twelve months will be to attend to the fires, wash pots, and occasionally clean plants in the houses. From that he gradually ascends the ladder step by step, by being called to the potting-bench, tying plants, and assisting the foreman in the ventilation of the several houses. I will suppose his age now to be twenty. After serving five years he seeks and obtains a situation as under-foreman, at the advanced rate of 15s. per week. This situation he holds for a like time, taking notes of everything of importance carried on, taxing his memory with the names of thousands of plants, their distinct treatment, &c. From this he obtains a foreman's place as a finish off, at 18s. per week. He holds this until he is nearly thirty years of age, and often till later in life, before he can succeed in obtaining a head gardener's place. Many gentlemen object to engage a gardener who has not had the responsible charge of a place previously. I need not mention, that during the whole of the sixteen years passed, he has been studying the practical and theoretical branches of gardening, and out of his scanty pittance he must deny himself almost the necessaries of life to purchase books to gain the requisite knowledge of his profession. Should he after all these years succeed in obtaining a situation as head gardener, it will depend on his being free from incumbency. At the rate of 30s. per week he may think himself at the top of the tree as regards wages.

Now, I ask your opinion, Are gardeners sufficiently remunerated? They are expected to know a portion of many branches of science, and they work hard all through the sunny part of their lifetime, both in mind and body, making old men of themselves almost before they are young ones. There are very few that have had much to do under glass, who do not know something about rheumatism, brought on by working sometimes in a temperature of from 70° to 80° for hours, and then turning out to cover up the frames, or something of that sort, with the thermometer registering 30°. Gardeners have a great many years of uphill work before they can acquire anything like a general knowledge of their profession. Then there is the responsibility and consequent anxiety day and even night, that is, should they have the superintendance of much glass. Many a gardener, I am sure, could bear testimony that during the forcing season, what with over-anxiety and fear lest anything should go wrong, a sleepless night often falls to his lot. The best of us are liable to failures sometimes, with

no allowance made for them. There is, also, a tendency on the part of some gentlemen to dictate to the gardener, and require him to do things in direct opposition to his views, and they will not listen to any objection which he may raise, or take any of the responsibility from him.

I trust that I may live to see the day when gardeners as a class will be better remunerated, their acquirements appreciated, and their cottages more comfortably built.—W. E. J.

[The most of the matters to which you allude have already received a good deal of attention in our columns. Much of the hardships of which you complain would be chiefly of use, if they could be brought under the notice of those young lads and youths intending to be gardeners. Then, if influenced by these hardships, there should be fewer aspirants after gardening, the very scarcity would insure better remuneration for those who are well qualified, from having passed through a series of regular instruction. Now, any one who can dig and mow may call himself a gardener, and such men offer their services at such a low figure as to keep down the general run of wages, and gentlemen and ladies are slow to find out the difference between a good ready workman and a man of science and education. We have frequently stated, that gardening, even now, chiefly offers an inducement to the sons of labourers and humble mechanics, who by perseverance, self-denial, and self-culture, may thus raise themselves in the social scale. It holds out no inducement to the intelligent well-to-do middle classes, unless they depend on the poetry and romance of the employment as a good part of their remuneration for hard work with head and hands. We think it is well this should be clearly understood. Employers of gardeners will ever do as they like. They will give better wages when they cannot obtain cheaper gardeners. They will give higher wages, and require higher qualifications, when they find, as many are now doing, that one man well paid will be more economical for them than another man underpaid.]

We will now glance at a few complaints, and but glance. First, There is no necessity for a five years' apprenticeship, and ever so many years afterwards, before taking any kind of a place. A man will learn more, even in a small place, superintending everything, than he is likely to do as an under gardener with the charge of one department. Second, We showed lately that the wages of under gardeners are not so much inferior to those of mechanics, when constant employment, and the hope of bettering their position are taken into account. Third, The custom of gentlemen wishing to have a man who has been in a situation before, is not confined to gardening, it holds good as to all positions of trust and responsibility; but it should show the importance of getting into a situation early, though a small one, and thus obtaining a family character. Fourth, We know all about the self-denial, and it is often hard, and we sympathise with it all, and from what we see and hear, things are looking better than they did; but we must expect this self-denial in one shape or other. Make everything comfortable and you will have still a greater number attracted to enjoy the comfort, and thus, again, the supply will exceed the demand. Where all the young men even now go to, that are sent out from some places, as if they were struck like batches of bedding stuff, passes our comprehension. We do know that a great many leave gardening to look after itself, and try something else. Hold out greater inducements, and there will be still more applicants. Here is where the great dilemma and difficulty are to be found, and which stand in the way of the better remuneration which gardeners so much desire, and which will be obtained, as already hinted, when good gardeners are more appreciated. Fifth, There can be no doubt that working much in houses is unhealthy; but this could be much obviated if young men would clothe themselves sufficiently before rushing from a high temperature into a low one. Sixth, As to employers dictating to their gardeners, and having things done their own way, with that we cannot intermeddle. An old nurseryman told a gardener when a young man, "If an employer tells you to plant the branches of a tree in the ground and the roots in the air, do it. Calmly tell him you think it won't answer; but if he insists carry out his plans." Every employer has a right to decide how he will be served. There is a foolish soreness on this point amongst gardeners. They feel annoyed when they cannot do just as they like. When a plan is proposed which you feel sure will not answer, state your objections respectfully, but give the plan every justice; then, however, the employer must take the responsibility of failure or success. This is a delicate point, but a little firmness and integrity in carrying out the proposed plan, will generally be

sufficient to absolve the gardener if the plan should fail. Responsibility can only be associated with the power to regulate. Lastly, The difficulty that a gardener with a large family has in obtaining a good place, is both true and sad; but the difficulty is not so great as it was. Gentlemen are beginning to see that there is as much necessity for a gardener having a house suited to a family, as any, nay more than any other outdoor servant. They are also finding out that men with families are less given to change. We hope the word incumbrance will cease to be associated with "the olive plants" that gather round the gardener's table. Every addition is generally a fresh pledge to renewed exertion and industry. Gardeners, in fact, ought always to be out-door servants. As well give a man the punishment of Tantalus at once, as place a spruce young fellow in a housekeeper's room with a number of well-dressed ladies' maids and other female servants, and give him clearly to understand that no married gardener will ever be kept there.

THE above answer to "W. E. J." was in print when we received a long letter from "AN UNDER GARDENER" on low wages, miserable lodgings, &c., very well written, but to the most of which, we are sorry to say, the above is all the answer we can give. We will note the following in addition:—

First, The alleged disfavour with which such matters are received. The best answer to such an allegation is what we and others have been permitted to write in these pages for years, and we might even refer to what is said of bothies in the Christmas Number, and, above all, to what is so well said by that gardener's friend, and, we believe, every man's well-wisher, our worthy coadjutor the "WILTSHIRE RECTOR." At the same time nothing would be gained by a more frequent repetition of the same complaints.

Secondly, we are quite as glad as "AN UNDER GARDENER" can be of the rise of wages for the gardeners employed in the London nurseries, as, unfortunately, the low wages there acted as a sort of guide for the wages given to under gardeners in the country, a trifle more per week, and lodging, being too often deemed amply sufficient. This is particularly pleasing just now when everything, except bread, is so high-priced.

It would be out of place to enter into the consideration of the whole system of young gardeners being temporarily employed in a nursery. We may, however, let out the secret that, but for patronage and pleasing patrons, the system of employing young men in nurseries for short periods, even at low wages, is too often a loss to the nurseryman—so much so, that in some of our large nurseries a young gardener cannot obtain admission except as a great favour to some large customer, and some of the greatest of the London nurserymen have told us that it would suit them better to have regular good workmen, acquainted with their work, at good wages, as, by the time the young gardener was becoming useful, he was off to a place, and the constant changing, even with good foremen, was always a source of trouble. Looked at in this light, the nurserymen were less to be blamed for low wages when the nursery was merely considered a sort of house of refuge.

Thirdly, As to head gardeners being chiefly to blame for low wages and miserable lodging-places, we fear that "AN UNDER GARDENER" will not be convinced to the contrary until he finds, when a master gardener, that his representations will be less effectual than he now imagines they would be. No doubt there are head gardeners who, if pretty comfortable themselves, are very careless about the comforts of those beneath them; but there are many others who leave no stone unturned in order to forward the interests of all with whom they are connected, and many often do much with wealthy kind-hearted employers. But there are many others, to our knowledge, who are equally anxious to promote the comfort of their men, and have missed no opportunity of doing so by their timely representations, and yet have done all in vain. Is it to be wondered at that a lady or gentleman who will part with a gardener who pleases and suits in every way for the sake of five or ten pounds a-year, will refuse to give an under gardener a shilling or two extra per week? We can recollect of many instances in which gardeners, by representing they could not find an under gardener for a less sum, have been allowed to give that sum to one or two, but then they had to take labourers for lower wages instead of young gardeners, so that the labour account should not be raised. On the whole, a head gardener may often do much; but, on the other hand, however much he may feel, and however much he may try, he will find himself cribbed and confined wherever a greater expenditure is

involved. Kind-hearted employers there will always be, and who must have people comfortable about them; but there are plenty of others who, provided they can obtain what they want, will obtain that in the most economical manner, and very regardless of the circumstances of those who contribute to their comforts. We have hopes in the ever-increasing numbers of the truly beneficent as well as benevolent, but our chief hopes are in the lessening of the number of those who take to gardening as a trade or profession, and the more thorough grounding of these in the practice and science of their art. Meanwhile, we would wish to impress on intending pupils, and the parents of these pupils, that future success must be looked for in general through processes of self-denial.—R. F.]

MR. SYMONS' RECORD OF BRITISH RAINFALL.

It is well known to all who take an interest in meteorological matters, that Mr. Symons, of Camden Town, London, has for some years published in a tabular form a statement of the rainfall, as furnished him by correspondents from all parts of the kingdom; nevertheless, there may be some who have not heard of such a record, and have yet kept a register of the amount of rain which has fallen in their district. Should there be any such, they will do a service to the public by furnishing Mr. Symons with the rainfall of the past year as soon as convenient. Mr. Symons has invited such contributions through the London newspapers, and also through many provincial ones, giving the names of those observers who have hitherto furnished him with the desired information, and their respective districts.

Although the number of stations in the United Kingdom at which the rainfall is observed is now upwards of one thousand, yet there is still room for more, and Mr. Symons solicits an increase. The mode of keeping such registers is much simplified, as compared with what it was many years ago, and the expense of the apparatus has been reduced, so that I believe a very good rain-gauge can now be had for 10s. 6d., and in some cases for less than that. Mr. Symons' pamphlet gives some useful information on important meteorological events, and tables comparing the rainfall of one season with that of others are made out in an intelligible form. One thing, however, he has wisely refrained from, and that is, making predictions as to the weather. Some may, perhaps, ask, What then is the use of meteorological observations, if they are not to enable us to form some idea of coming events? To such I may say, What is the use of historical or chronological records of any kind, but to transmit to posterity what the past has been? Besides, records of rainfall in different districts afford an interesting study on the causes which contribute to such a result. Some districts amongst the Cumberland hills are found to receive more than six times as much rain as the general average of the kingdom, and it is quite possible, and, in fact, very likely, that the wettest point has not yet been favoured with a rain-gauge, or its rainfall recorded. Now, however, that men of science are turning their attention to the matter, I trust that these "out-of-the-way places," will be duly represented. Mr. Symons also invites those living near to others who already contribute reports, to send their registry likewise. Mr. Symons' address is 136, Camden Road, London, N., and printed forms for entry will be supplied by him when necessary.

I imagine that when the returns of rainfall for the kingdom are made out for this year, greater differences than usual will be found between the returns of certain districts when compared with others. On the whole, however, I think it will be admitted that the season has been a fine one, and the mildness of the autumn remarkable. Not many yards from where I now write, Nasturtiums are in flower, and quite unprotected; certainly they suffered a little from some frosts in the middle of November, and the continued dull weather has deprived them of that luxuriance which they exhibited in September and October; still they are green and fresh, and nothing in the garden is more susceptible of frost. Geraniums which have not been taken up are fresh also; but so they were up to the 17th of December, 1860; and although we are now a few days past the time when frost commenced in that memorable year, I can hazard no opinion as to the likelihood in the present winter of another such frost as that which occurred in 1860. Leaving that to the weather prophets we must content ourselves with recording the past, and although other phenomena than the amount of rainfall may be registered by those who

carry their researches further into meteorological matters, Mr. Symons only requires the monthly rainfall and number of days on which rain fell, and those who have the means of supplying such information will be doubly rewarded by the knowledge that they have contributed to a subject which is fast becoming one of national importance, and one from which they as well as others will reap the benefit.—J. ROBSON.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE December Meeting of this Society was held on the 4th ult.—the President, F. Pascoe, Esq., F.L.S., &c., in the chair. A very interesting collection of insects made in British Barmah, by Lieut. Beavan, was exhibited; amongst which were many fine species of Euphea, and some new Hesperida, also some rare and new Coleoptera, including a remarkable Tortoise Beetle of the genus *Prioptera*. Another collection, chiefly of Butterflies and Moths, in a very perfect state of preservation, made in the neighbourhood of Santa Martha, in Venezuela, by the late Mr. Bonchard, was also exhibited by Mr. S. Stevens. The excellent manner in which these specimens had been captured and preserved caused additional regret at the untimely decease of Mr. Bonchard. A mutilated specimen of the rare *Goliathus Drurii*, Westwood, being the only insect saved by M. Du Chailin, in his hasty retreat from the interior of Western Tropical Africa, and brought home in his waistcoat pocket, was also exhibited by Mr. Stevens.

Mr. Stainton exhibited some remarkably dark brown varieties of the common Moth, *Tinea cloacella*, reared from larvae found feeding under the bark of dead Birch trees at Llangollen, by Mr. Gregson.

Mr. F. Smith exhibited specimens of the Sawfly, *Crossus septentrionalis*, which he had found in the larva state on the 20th of August last. They had spun up in their cocoons in four or five days, and the perfect insects appeared a month later, thus varying from the ordinary habit of the family of lying unchanged within the cocoon during the whole of the winter. Mr. McLachlan, however, suggested that it was possible that there were two broods in the year, as he had taken the perfect insect at Loch Rannoch, in June. Mr. Smith also exhibited some specimens of the "Bugong," a large greasy-bodied species of Moth belonging to the genus *Agrotis*, which is eaten by the aborigines of New Holland in considerable numbers, and which had been forwarded by Mr. George Bennett, author of "Wanderings in New South Wales," to Dr. Gray, of the British Museum.

Some conversation took place as to the noises asserted to be made by the Death Watch, *Atropus pulsatorius*, the general opinion being that the common impression as to their origin was erroneous.

Mr. McLachlan read a memoir on the varieties of *Sterrhia saccharia*, recently reared in this country, with observations on the causes and extent of the different variations to which the species of Lepidopterous insects in this country are subject.

Professor Westwood read descriptions of some new species of Lenticorn Beetles belonging to the genus *Cantharocnemis*, but forming different sub-genera, and for which he proposed a series of uniform sub-generic names, in order to avoid the inconvenience resulting from the modern system of division, in which almost every species was raised to a distinct generic rank.

The Rev. J. Greene exhibited specimens of the newly-described British Moth, *Acidalia manciplata*.

Some further notes on the Buprestida of New Holland, by Mr. C. A. Wilson, of Adelaide, were also read; likewise the description of a new species of *Papilio*, from one of the small islands of the Pacific Ocean, by Mr. G. Semper, of Altona.

A fine series of drawings of the insects of North America, destructive to the Cotton, Orange, Lime, Potato, &c., intended for publication, was exhibited by Mr. Moore.

TODMORDEN BOTANICAL SOCIETY, December 4th.—On the table were the new and beautiful *Pteris serrulata cristata*; also *Scolopendrium vulgare polycausis angustam*, and *S. vulgare Malcomsoni*, the latter a splendid form, something like a gigantic *cristatum*, only that the fronds are of normal length and width from base to apex. A communication was read from Mr. T. Pritchard, of Brynnyfynnon, North Wales, announcing his discovery near that place of the rare *Asplenium trichomanes incisum triangulare* (M), as well as several other rare Ferns, small specimens of some of which were laid before the meeting. Amongst them we observed a very beautiful form of the Lady Fern, belonging to the plumosum group.

HOUSE SEWAGE.

AN answer to correspondents on the above subject in your Journal of the 5th ult. rather surprised me. I have a cemented cesspool into which the waterclosets and sinks of three houses are drained; within a couple of yards I have a simple filter thus:—Two tar-barrels are sunk vertically in the ground, the upper one having both ends removed, and the lower one having a bottom pierced with holes; a layer of cinders weighted with a perforated slate, a drain underneath to connect with the cess-

pool, and a small pump complete the filter. The liquid has been liberally used to the fruit trees, Currants, young hedges, &c., by myself and neighbours during the past two summers, and we think with good effect, particularly to the Pears and Apples. The soil is light, rather sandy, resting on red sandstone, and during the late droughts I consider that the fruit was not only saved, but increased in size by the frequent application of the filtered sewage.

The gardens have only been formed three years. The trees in mine are trained as espaliers, and have borne much better crops than the standards in my neighbours' gardens, although the trees were all planted at the same time. I pinch-in the espaliers very closely.

I think it would be a great boon to many of your readers if you or some of your contributors would discuss this subject. In how many cases in the country the house sewage runs to waste in an open ditch, or poisons the ground around the cess-pools, whilst every particle of manure has to be brought from a distance! Is there not any filtering medium that would take up the valuable products? Peat charcoal I would try, but where is it to be had? Soil will not allow the liquid to percolate quickly enough. Quicklime clears the liquid, but has no effect on the smell, and I am told that the deposit is spoiled as a manure. Sulphuric acid destroys the smell, and I believe the product is valuable, but would not the expense be great?—N. I. H.

[We not only have gone into the consideration of house sewage as a fertiliser very fully, but have collected what we wrote on that and other fertilisers into a book, "Manures, or Muck for the Many," which you can have free by post from our office for four postage stamps. What we said at page 469 had reference to the inquirer's particular case.

The flowers were too faded to be recognised; but under the best of circumstances, unless a Chrysanthemum is very remarkable, it would be very difficult to recognise it from a single flower, the varieties are so very numerous.]

A LARGE VINE.

On the seacoast, midway between Tyre and Sidon, is a very ancient Mulberry garden, surrounded by some enormous Olive trees, whose hollow trunks attest their great antiquity. By the garden side stands a cool fountain, fed by one of the mountain streams, so welcome to the traveller for his noontide rest when travelling through that thirsty land. After resting awhile at this pleasant spot, we rambled through the garden of Mulberry trees, partly for the sake of taking the fruit, but more with the intent of learning something about the rearing of silkworms, which was there in full operation. Whilst admiring the great size of the fine old Mulberry trees, I happened to notice the bark of a tree which appeared so Vine-like in its

character that I stopped to examine it, and, to my surprise, found that it was really a Vine of most enormous dimensions; it rose by two main stems, and fairly rested upon six or eight of the large Mulberry trees around. I measured the two stems a few inches above the ground; the larger one was 50½ inches in circumference, the smaller 40 inches. I endeavoured to trace out the area covered by its branches, but could not obtain an exact measurement, for the branches had rambled most irregularly. It had a splendid crop of very large bunches of Grapes then, but in an early stage of growth, and I was told that it is a black variety. My impression is that it is one of the largest Vines in the world, and it would well repay a visit to "Ein-el-Kanterah," for that is the name of the spot, if it be sought for by any of your readers, whose rambling propensities may carry them along that seashore.—W. WANGLYN.

PLANTING A CIRCULAR BED.

I HAVE a circular bed 11 feet in diameter, which I meditate planting next year as follows; but should like your opinion as to its worth, and also to guide me in the planting of the same as to the proper distance apart in the rows, as well as plant from plant in the rows:—

- 1.—Variegated Arsis.
- 2.—Variegated Sage.
- 3.—Variegated Euphorbia.
- 4.—Iresine Herbstii.
- 5.—Centaura candidissima, with three plants of Perilla in the centre.

As you will at once see it is meant for a bed of foliage. Would *Dactylis glomerata variegata* be better in No. 3?—SUNSET.

[We do not think your arrangement would look well. Having the three variegated plants together is bad taste. Had we a similar bed to plant, and if the position is a sheltered one, we should arrange the planting as follows, beginning from the centre:—

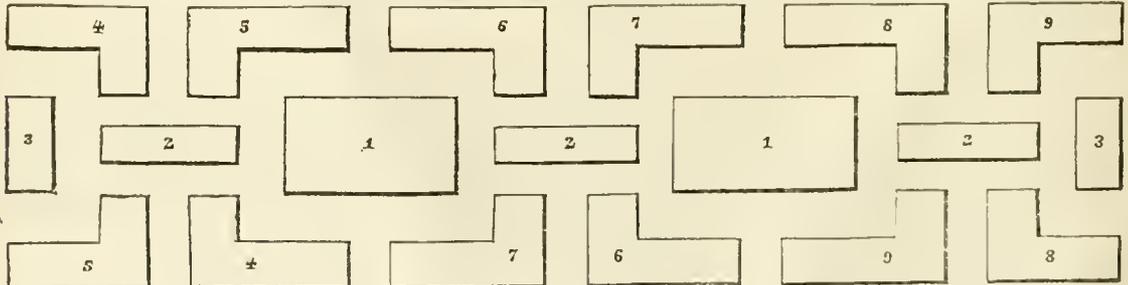
- 1.—Three good plants of *Canna discolor*; these would occupy about 2 feet.
- 2.—2 feet of *Cineraria maritima*.
- 3.—Ditto *Amaranthus melancholicus ruber*.
- 4.—Ditto *Centaura candidissima*.
- 5.—Ditto *Iresine Herbstii*.
- 6.—1 foot of *Cerastium Biebersteinii*.

The plants may be about 9 inches apart each way, taking care to plant them alternately, and putting the tallest plants towards the centre, and at the same time keep each circle to its proper width. The *Cerastium* should be planted rather closer than the others; from 4 to 6 inches apart would be a good distance for it. If the bed is on grass the above arrangement would look well. We have to apologise for accidentally overlooking this query and answer.]

FLOWER GARDEN PLAN.

THE enclosed set of beds occupy the top of a terrace about 40 feet wide, and are principally seen from another terrace about 5 feet above it. Two-thirds of the beds I laid out last

winter; the remainder, or from figures 7 and 6 to the right, I have just completed, and intend planting them as marked, but should feel much obliged for your opinion before that time



- | | | |
|---|--|--|
| <p>1 1. Centre of bed, <i>Heliotropes</i>; next a row of <i>Perilla</i>; then another of <i>Prince of Orange Calceolaria</i>, the whole edged with <i>Bijon Geranium</i>.</p> | <p>2 2 2. <i>Christine Geranium</i>.
3 3. <i>Blue Lobelia (speciosa)</i>, edged with <i>Lady Plymouth Geranium</i>.
4 4 8 8. <i>Purple King Verbena</i>.</p> | <p>5 5 9 9. <i>Aurea floribunda Calceolar</i>
6 6. <i>Tom Thumb Geranium</i>
7 7. <i>Mangleü Geranium</i>.</p> |
|---|--|--|

comes. I may mention that our soil is light, and that we are exposed to most, or all the storms and sun that there may be, so that the bedding plants generally do not grow tall but bloom most profusely.—R. D. T.

[According to the system of planting we could not improve

what you propose, and we have no doubt that it will look well. In another season we should be tempted to make your centre panelling row the centre, and then make the two sides the exact counterpart of each other. Your planting will look very well. We presume the plan is on gravel.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the weather continues much the same, the operations recommended to be performed in the past month should be proceeded with. *Cauliflowers*, if the autumn sowing failed, it will be advisable to sow in a box, which may be placed in a forcing-house, and when the plants are of sufficient size prick them out in a frame on a slight hotbed. *Celery*, trenches should now be dug out, so that they may receive the benefit of frost; in spring *Cauliflowers* may be planted in them, and dwarf Peas or Lettuce between, and these crops will be off by the time the trenches are wanted. *Cucumbers*, a seed-bed should now be made to raise young plants for the hotbeds, a one-light box is generally of sufficient size for this purpose; after the bed is made, and the heat is up, the dung should be forked up every other morning to the depth of a foot, until the burning heat has subsided. *Dwarf Kidney Beans*, earth-up as they advance in growth, never allow them to grow to too great a height before this is done; water them before earthing-up if they are at all dry. *Potatoes*, if young ones are wanted very early, some Early Frame, or any of its varieties, may be planted in a slight hotbed; if it is not convenient to plant them immediately, they may be laid in a forcing-house till they begin to shoot. *Radishes*, a second crop may now be sown in a similar situation to the last—that is, on a slight hotbed. Dung should now be prepared for forcing the various culinary vegetables which are required early; a considerable quantity of leaves may be used with it.

FRUIT GARDEN.

The work of trenching, draining, preparing borders for fruit trees, pruning, nailing, and dressing the ground may be proceeded with. Fruit trees may be removed and planted, but take care to keep the frost from the roots of newly-planted trees.

FLOWER GARDEN.

The absence of frost from the ground has permitted of a variety of work in this department being carried on. Borders not cleaned and dressed should at once be finished. Recently-removed plants should be protected. In the pinetum a little protection may be afforded to Pinuses of doubtful hardiness. We repeat these instructions, assuming that the weather has cheated some of us into forgetfulness of winter, whose approach is unusually delayed. We have still *Verbenas* in flower, and *Pelargoniums* uninjured in the open ground. *Dahlia* roots should be occasionally examined in order to counteract the effects of damp, &c. Where a quantity of young plants is required it will be requisite to put the roots to work by forcing them in a gentle hotbed or pit. Abundance of air is necessary to *Carnations* and *Picotees* in frames; for when kept in a confined atmosphere mildew is certain to be engendered. *Pansies*, which during the past fine weather have begun to move, should be carefully protected in the event of severe weather, as they will be much more susceptible of injury. Carefully exclude frost from the beds of *Tulips*. Those who have not obtained the necessary number of *Ranunculuses* to make up their beds ought to do so without delay, as the period of planting, the middle of February, will soon be here. If the beds have not been already formed, perhaps the simplest and best way is to excavate the soil 2 feet deep, put in 6 inches of decayed cowdung, covering this with maiden turfy loam to the depth of 12 inches or more, the remaining 6 inches to be equal parts loam, leaf soil, and sand thoroughly incorporated.

GREENHOUSE AND CONSERVATORY.

About 40° is a good temperature for the conservatory, when not attached to sitting-rooms, and used only for the purpose of wintering large specimens without plants in blossom; but where a supply of stove plants in bloom is constantly kept up from a forcing-pit, which is essentially necessary to every good conservatory in winter, the heat most suitable is 45° by night, raising it to 55° in the day. *Cinerarias*, which are great ornaments in this house in winter, are thirsty plants, and should be well attended to with water. They are also liable to the attacks of insects, and unless they are looked after they will soon establish these among other plants. *Chinese Primroses* are also very ornamental here; although they grow well near the glass, they do best in shaded places. With regard to soil, two parts rough leaf mould, and one of well-decayed cowdung, with a little sand, suits them best, and in this they like plenty of moisture. *Camellias* will now be swelling their buds. Neglect in supplying water must be avoided, and attention should be given so that it is applied in proportion to the

activity of the growth of the plants. This remark applies equally to other plants. Remove flowers as soon as they become shabby. Stove plants will take no injury for a few days in this temperature, but hardwooded greenhouse plants, such as *Heaths*, should not remain more than a few days at a time in such a temperature. Prune, train, and clean the creepers on the rafters. The *Pelargoniums* intended for blooming in May, if not shifted already, must be removed into their blooming-pots immediately, using a free open soil. Late-blooming specimens must now be stopped, preparatory to being potted in the end of February, and young stock must be encouraged, so as to make the plants strong and healthy. Herbaceous *Calceolarias* will grow very rapidly for the next three months, and, therefore, must be encouraged and kept clean. Fumigate slightly once a-week or ten days, but be very cautious, or you will injure the foliage. Water when necessary, but not over the foliage.

STOVE.

Here the night temperature must not exceed 60°, and if it fall to 50° in severe weather, no harm will be done. Keep the atmosphere rather moist, especially if the weather is bright, and remove such plants as are inclined to start to the warmest part of the house. Some plants, such as *Stephanotis*, *Allamandas*, *Manettias*, *Dipladenias*, &c., may be pruned, trained, and started, if by a gentle bottom heat all the better, but those plants wanted for late blooming must be kept back for the present. Some persons keep their stove plants now and for the next six weeks quite at rest, and in that state a temperature of 55° is quite enough for them in cold weather. No more water is given at the roots than will keep the leaves from flagging. A high temperature and dry atmosphere are much more injurious to stove plants than any cold they can suffer in a temperature above 45°. *Orchids* should now be kept as cool and dry as they can bear for about six weeks, and in spring increase the heat as the season advances, but still withhold water till early in summer, and then give it only when the buds are ready to start. Young *Stanhopeas* are more difficult to flower than established plants, because they are more susceptible of changes of temperature and moisture. From this time to the beginning of May give as little water at the roots as is consistent with the health of the plants, and up to the middle of February 55° is the proper temperature. The atmosphere should not be drier than that for a collection of stove plants; therefore, where two houses do not exist, the coldest end of a stove is a good place to winter them in.

FORCING-PIT.

Remove the plants from here to the conservatory as fast as the flowers expand, and introduce others from the reserve for succession, placing them first at the cool end of the pit, so as to excite them gradually. A few *Pinks* and *Sweet Williams* may be started, and plenty of *Lily of the Valley*, *Sweet Briar*, and other sweet-scented plants. *Gardenias* must also be started, and as *Stephanotis* is a great favourite, a plant or two should be placed at the warmest end of the pit. Maintain a fresh, growing, moist temperature of from 60° to 65°, or 70° with sun heat, and give air, warmed before it reaches the plants, at every favourable opportunity. Syringe early on sunny days, and keep a moist atmosphere, unless the weather is very dull.

PITS AND FRAMES.

These must be protected in severe weather, and abundance of air should be given to *Mignonette* and *Violets* when the weather is favourable. The early-potted *Tulips* and *Hycinths* under tan will begin to draw, therefore, remove them to a cold pit. A batch of *Mignonette* for succession may be sown towards the end of the month. Keep the plants in these structures as hardy as possible, by fully exposing them in mild weather, but do not give them any more water than is absolutely necessary. Remove all decayed and decaying leaves, and keep the atmosphere in as healthy a state as possible.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

SOWN succession of *Kidney Beans*; potted young *Cucumbers*; spawned and earthed fresh piece of *Mushroom-bed*; put some droppings, with a portion of long litter made short by cutting it, in a shed dry; took up more *Rhubarb* and *Sea-kale* to place in the *Mushroom-house*; and, as the heat was declining too much, put a lot of fermenting material in the house to prevent the necessity of putting a fire on. The first beds are producing plentifully, and the old beds in the open

shed are still producing usefully. There are unmistakable signs that in many families Mushrooms are becoming as much an every-day affair as Parsley, and it is a sad thing to be short of the latter. Whenever scarcity is threatened it is a good plan to fill some pots and boxes, and place in the houses, or fill a frame or part of a frame with it, with a little gentle heat under it. It is advisable to have one of these modes to fall back upon, as respects Sorrel, Fennel, Tarragon, Burnet, Chervil, and especially Mint, as, after Asparagus comes in, Mint is often wanted, and lamb, however great the delicacy, is nothing without it in the estimation of a connoisseur. Mint is a particular thing in some places, with us it lives only a short time, unless fresh plantations are frequently made.

It is well to notice, that in taking fermenting materials into a Mushroom-house, for first producing heat and then getting prepared for forming a bed, besides the annoyance of extra steam, to which reference was made lately, there is the possibility of taking in slugs and snails, and mice with the litter, which is not so likely to be the case if the material has been prepared, well heated, and thus dried in a shed. The heating makes these insects start, and therefore, though we thus lose a portion of the enriching power of the dung, we gain in more freedom from vermin. We have not yet noticed the nibbling of mice, but several bonnet-headed Mushrooms have been holed by snails. These may be trapped with greased cabbage leaves, and, better still, by a little brewer's grains laid in a heap; but the most effectual mode is to take a candle and lantern, and look over the beds and walls any time from ten o'clock at night to three o'clock in the morning. The snail seems to know instinctively the darkest and quietest hours. We have never seen them so large as in a Mushroom-house. We have taken some that looked like small adders, and almost as beautifully spotted. Such soon render useless a lot of Mushroom-houses if allowed to have their way.

As occasion offered, went on stirring the ground amongst young cress. Gave plenty of air to young Radishes, but they scarcely move in the dull foggy weather. We would have proceeded with slight hotbeds, but the hurricane took away most of our tree leaves, and until the shooting is over we must not go near the covers. A good stock of tree leaves is a great acquisition for a garden, as their mild heat enables us to bring many things forward; but for them we should have been at a standstill in all departments, as, without their aid, the dung from three or four horses would scarcely have sufficed for Mushroom-houses, let alone the wants of the kitchen and flower gardens.

We have as yet done little digging or trenching. In general we like the surface to be frosted first; but in such a mild season as this we would not have waited for this, if a press of other work and alterations had not caused the delay. All stiff clay soils, whether merely turned up one spit deep, or two or three spits in depth, would be the better of being ridged up in furrows, and the clearer these furrows show the mark of the spade the more will the frost act upon them in shattering them to pieces. In light soils it is better to leave the surface rough but flat, as, if ridged up, the soil would get too fine, and there would be a want of firm holding power for the plants. For gardening-purposes the soil cannot be too deep; and the shallowest soil will soon be deepened if, in trenching, the subsoil is broken either with spade or pick, left where it was at first, and at the next trenching a little of it is brought up and incorporated with the staple. It is wonderful how a thin hungry soil may thus be deepened and improved, especially if there is a good rubbish-heap of decaying vegetable matter to go to. Such rubbish-heaps of all refuse vegetable matter will be greatly improved if short grass from lawns and a little litter be placed below them in summer and mixed with them, and a little earth be thrown over all. The grass, &c., will cause the whole to ferment kindly, and the earth will keep in all the fertilising gases. Wherever dung is scarce much must depend on the goodness of the rubbish heap, and everything that will rot and decay should be carefully husbanded there, except seed weeds, or what will be best disposed of in the charring and burning heap. Many of the remains of vegetables would come in useful at the farm for pigs, &c., to nibble at, and at least amuse themselves; and when dung can be had in return, a fair exchange is all right; but when it is supposed that it is waste to let manure from the farm find its way into the garden, then every bit of vegetable should be kept in the rot-heap to help to produce other vegetables. When spent quarters are to be cleared, it is not a bad plan to dig them, or rather trench them down, and then they rot and give off their manuring properties slowly; but in this case they often prove a feeding place for gardeners' enemies in

the ground, and in general it will be found preferable to rot them in the rubbish heap, kept covered with earth whenever there is an escape of gases, in other words, whenever there is the heat from active decomposition, and the heap will be all the more valuable from this heating and earth-covering. A part of the heap already decayed may be used for throwing on the surface; a little salt and lime will also be useful if added to the heap; and so for all soils not abounding in calcareous matter would be all kinds of lime rubbish. On chalky soils the application of calcareous matter in any shape is generally of little avail; but there are many places where strong loam is resting on clay, and a great depth of chalk below the clay, and in such cases the bringing up the chalk and surface-dressing with it is often of great advantage. If spread on the ground before frost it will generally be shattered and broken enough.

FRUIT GARDEN.

Merely a repetition of previous weeks; have shut up the Peach-house, and put a little fire on just to move the plants gently. For temperature in various houses, see memoranda of a fortnight ago.

ORNAMENTAL DEPARTMENT.

The chief trouble has been to keep damp from late-struck Geraniums, and other bedding plants in cold frames and pits. For several reasons, the chief an anxiety not to disfigure fine beds and borders, our cuttings were unusually late this season, and the damping of the foliage has been rather troublesome in cold pits and frames. It is better every way to place them in a house where a little fire heat can be used. No greater mistake can exist than the supposition that gardeners can have their own way in this respect, even in "very tidy places." Such a mode has suited us hitherto, and "We want no change" is often the reply to plans that have cost consideration and trouble. That is no reason why every one should not try to obtain what would be the most suitable, as exemplified in the letter and plan of a Cucumber-house, given by Mr. O'Donnell at page 524. Such a house is far before a lean-to pit. If mostly above the ground level, and fully half of the sides of glass, it would be better still. One advantage of the plan given is that the beds are the width of the paths from the sides, and therefore receive more light from the roof in winter. The lobby and double door are a great advantage, especially in winter. But, notwithstanding all these advantages being made apparent, many, very many, must do what they can with flat lean-to pits, or, perhaps, still flatter frames. Unless greatly elevated at the back, no common frame or pit with the same inclination receives any direct light, or rays from the sun, for nearly half the width in front. More light, and the chance of giving a little help from fire heat, are of great advantage for most ornamental plants that are grown in pots.

In such places, and in all houses kept cool, no watering should be given unless absolutely required. The moisture in the air has generally been sufficient where no great amount of artificial heat was given. *Bulbs* that have now filled their pots with roots may be gradually forced, but the heat should be raised by degrees—say Hyacinths beginning at 45°, and rising in ten days to 55° and 60°; Tulips not quite so much; and Crocuses should seldom be above 50° with artificial heat if it is desired to have the colours bright. Narcissus will stand as much heat as Hyacinths, but when coming into bloom the temperature should be gradually lowered before they are taken to the greenhouse or window. Hyacinths when showing their bloom-stalks will often be better of a pot or a paper funnel placed over them, to draw up the stems, to give the florets room; but in all cases as the bloom opens the plants should have all the light possible. Placing them in the middle of the room, on the top of the mantelshelf, or on sideboards, is an act of cruelty which, if the poor bulbs could speak, they would soon tell us all about. Hardy shrubs brought forward in heat should have the temperature gradually reduced before they are taken into a much colder place; and all shrubs that are to be forced should also be brought on by degrees, as subjecting them to a high temperature at once is apt to start the flower-buds prematurely and cause them to drop, whilst it gives an extra stimulus to wood-buds to start into shoots.

The weather has been everything that is desirable for greenhouse plants; even the most sensitive of the hardwooded ones could take all the mild air that could be given them if there was enough of fire heat in foggy days to keep the air in motion. Extra heat otherwise is to be avoided, as the mild temperature has encouraged growth, whilst there has been little sun to consolidate the growth.

Now is a good time to cut in many stove climbers, as Allamandas, Stephanotis, Passifloras, &c., and to shake out and report those previously pruned, and now showing their fresh shoots. Cuttings may now be made of Euphorbias, Poinsettias, &c., to be grown on for next autumn and winter. Most stove plants that have been at rest in winter, as Clerodendrons, may also be pruned back to a few buds of last year's shoots, and as soon as the buds burst the plants should be shifted into smaller pots, be benefited with a little bottom-heat, and receive another shift as soon as the pots are full of roots. Care should be taken that Ixoras are now free of scale and green fly, and they will be much benefited if the pots are plunged in a mild sweet heat of from 75° to 80°, the top heat averaging from 60° to 65°. As time permitted went on with potting Mosses, Ferns, &c., getting a lot in small pots, so as to form parts of vases of flowers in-doors, &c.

Most of our work for the week has been moving Rhododendrons and other evergreens, and fresh turfing some borders, which it is considered we should be better without. Where much heavy work with evergreens is required to be done, it would be economy to have a stout low-wheeled little truck for the purpose. In laying turf, and moving turf to be relayed, much time and labour are wasted if the turf is not taken up in pieces pretty uniform in width and thickness. Inattention to these little matters makes a great difference in the amount of work that can be done in a day, and even careful men, and good at taking up turf, need to be reminded of it. At this season of the year many men will attempt to lay turf by standing and stooping—a rare stoop for a tall young man; but where a regular job has to be gone about, turfing cannot be satisfactorily done by a man working in such a stooping position. The importance of a dry day, and the ground moderately dry, will be seen from the circumstance that the workman ought to be on the unturfed ground, and on his knees when at work. A kneepad should protect his knees, and a moveable pad be used for his legs. Every piece of turf should be put down properly in its place—a matter easily done if the turves are uniform in thickness, but which requires a good deal of packing if the turves are not equal in thickness. If the turves are not left level and well packed, no beating or rolling afterwards will ever make a smooth level lawn. Of course all old ground that used to be dug must be thoroughly beaten before turfing, and even then most likely it will fall in the course of years. Where much turfing is done, and the ground requires much levelling and regulating previously, the simplest plan is to use a number of lines of cord, stretched at the proper sweep and level, and then the workmen have only to turf up to the lines. In making banks of a regular uniform slope, a good plan is to have one line stretched firmly for the edge of the top, and another for the edge at the bottom, and a heavy rod of the requisite length moving between the two lines will secure a uniform slope all throughout.

As to evergreens, we may mention that Rhododendrons will not flourish in a soil abounding in calcareous matter. In almost every other soil they will grow if enriched with rotten leaf mould. In our soil our only chance is to turn down the loam and turn up the clay, and plant in clay, and a little leaf mould and sand. They will not look at our stiff loam, which has a good portion of calcareous matter in it. After all they generally do best in such soils as the native Heaths delight in; but they do well in heavyish loam, in rich sandy loam, and, in fact, in any loam we have met with free of calcareous matter.

A falling barometer is giving us warning that ere long we shall be able to bring up our leeway in house-work of all kinds. Hitherto the weather has been too favourable for outdoor work to do more in-doors than what was absolutely essential.—B. F.

TRADE CATALOGUE RECEIVED.

William Pontey, Huddersfield.—List of Forest and Ornamental Trees, Shrubs, &c.

COVENT GARDEN MARKET.—DECEMBER 30.

SUPPLIES are well kept up and prices maintained, Pines and Grapes both being slightly in advance of last week. Peas are becoming comparatively scarce, and are confined to Winter Nelis, Ne Plus Meuris, Colmars, and Glou Morcean. Large quantities of Potatoes are on hand.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	2	0	to	3	0	0	to	5	0
Apricots.....	0	0	0	0					
Cherries.....	0	0	0	0					
Chestnuts.....	8	0	16	0					
Currants, Red	0	0	0	0					
Black.....	0	0	0	0					
Figs.....	0	0	0	0					
Filberts.....	0	9	1	0					
Cobs.....	0	0	16	0					
Gooseberries..	0	0	0	0					
Grapes, Hambro.	4	0	7	0					
Muscats.....	6	0	10	0					
Lemons.....	6	0	10	0					
Melons.....	each	3	0	to	5	0			
Mulberries....	punnet	0	0	0	0				
Nectarines....	doz.	0	0	0	0				
Oranges.....	100	4	0	10	0				
Peaches.....	doz.	0	0	0	0				
Pears (kitchen)..	doz.	2	0	4	0				
dessert.....	doz.	1	6	6	0				
Pine Apples....	lb.	5	0	8	0				
Plums.....	½ sieve	0	0	0	0				
Quinces.....	½ sieve	0	0	0	0				
Raspberries....	lb.	0	0	0	0				
Strawberries..	lb.	0	0	0	0				
Walnuts.....	bush	14	0	20	0				

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes....	each	0	0	to	0	0			
Asparagus....	bundle	8	0	12	0				
Beans Broad..	hushel	0	0	0	0				
Kidney.....	100	0	0	3	0				
Beet, Red.....	doz.	2	0	3	0				
Broccoli.....	bundle	1	0	2	0				
Brus. Sprouts.	½ sieve	2	0	3	0				
Cabbage.....	doz.	0	9	1	6				
Capsicums....	100	0	0	0	0				
Carrots.....	bunch	0	4	0	8				
Cauliflower..	doz.	3	0	6	0				
Celery.....	bundle	1	0	2	0				
Cucumbers....	each	2	0	3	0				
pickling....	doz.	0	0	0	0				
Endive.....	score	1	0	2	0				
Fennel.....	bunch	0	3	0	0				
Garlic and Shallots.	lb.	0	8	0	0				
Herbs.....	bunch	0	3	0	0				
Horseradish..	bundle	2	6	4	0				
Leeks.....	bunch	0	3	to	0	0			
Lettuce.....	per score	1	0	2	0				
Mushrooms....	pottle	1	6	2	6				
Mustd. & Cress.	punnet	0	2	0	0				
Onions.....	per bushel	3	0	5	0				
pickling....	quart	0	0	0	6				
Parsley.....	½ sieve	1	0	1	6				
Parsnips.....	doz.	1	0	2	0				
Peas.....	quart	0	0	0	0				
Potatoes.....	bushel	2	6	4	0				
Kidney.....	do.	3	0	4	0				
Radishes doz.	bunches	0	6	1	0				
Rhubarb.....	bundle	0	0	1	0				
Savoy.....	doz.	0	9	1	6				
Sea-kale.....	basket	2	0	3	0				
Spinach.....	bushel	2	0	3	0				
Tomatoes....	½ sieve	0	0	0	0				
Turnips.....	bunch	0	4	6	0				
Vegetable Marrows	dz.	0	0	0	0				

TO CORRESPONDENTS.

“* We request that no one will write privately to the departmental writers of the “Journal of Horticulture, Cottage Gardener, and Country Gentleman.” By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOK (T. T., Isleworth).—You can have “In-door Gardening” and “Out-door Gardening” for 1s. 6d. each at our office. The early Pea you refer to was Dickson's Early Favourite.

MULCHING ROSES (M. H.).—Half-rotten dung will be better for mulching Roses than that in a state of fermentation.

NESPOLI DI JAPONI CULTURE (An Irish Subscriber).—We believe it to be the Loquat, Mespilus (Eriobotrya) japonica, and it is not so fine either in Italy or Malta as it is in India, because the climate is not so suitable. However, we sent your inquiry to “J. H.,” and this is his reply:—“It is not the Loquat, but what is commonly called the Maltese Medlar. I raised my plants from seed out of some fruit bought of a fruiterer in Oxford Street. I have tried grafting without success, but I have fruited a plant in three years by growing it in the stove in summer, keeping it in a greenhouse in winter, and taking it out of the pot and cutting the tap root every year. It is very liable to the attacks of insects of almost every sort, although it would not so appear from the leaf. The flower is large and fragrant, and the fruit is of a yellow colour, with four very large seeds inside, and of rather an insipid flavour. I cannot succeed in grafting it on any stock, and it is not worth the trouble except for the blossom. It should have plenty of heat, air, and moisture in summer, and complete rest in winter; frost injures it, however, much. It will fruit in 12-inch pots. It is called, I believe, ‘Nespoli di japoni’ by the Italians, but it is not at all equal to the true Loquat. It could not be watered with manure water at all, or it will not bear; by cutting the tap roots it will bear in three years.”

PELARGONIUMS AND FUCHSIAS NOT BLOOMING (A Subscriber).—From what you state we think that all that your plants require to make them bloom more profusely, is a more plentiful supply of air, poorer soil, less pot room, and to be kept cool, close to the glass, and without shade.

MANURE FOR FLOWER-BEDS (Item).—It would do them good, but put it a foot below the surface, and the roots will find it. In consequence of this deep rooting the plants will be enabled to withstand drought. If mixed with the soil manure is apt to make the plants run to leaf, and we, therefore, recommend putting it a foot below the surface, or covering the beds early in July with 2 or 3 inches of very short manure. The effect in both cases is much alike, although the mode of action is different, for in the first case the roots are induced to go deep down, and are, therefore, not so liable to suffer from drought, whilst in the other evaporation is to a great extent prevented, and, at the same time, the soil is enriched by the rains washing into it the fertilising agents of the manure. A dressing of leaf mould dug in now would make the soil sufficiently rich for planting in.

HEAVIEST BUNCH OF GRAPES (A Subscriber).—The weight in a given space depends upon the closeness of the berries to each other. The statement is Speechley's own.

DESTRUCTIVE WORMS ON LAWN (A Constant Reader).—Put a stone of lime in a bogshead, and pour in forty gallons of water. Stir well up, and allow the liquid to stand forty-eight hours. Roll the lawn well, and during showery weather, the evening before it is watered with the clear lime water, and apply this from a rose watering-pot. The worms will either be killed or brought to the surface, and the lawn should be swept with a broom, and the worms carried away. Success, especially at this season, depends on giving the ground a thorough soaking of lime water. It may be necessary to repeat the watering at intervals of a fortnight or three weeks.

FOUNTING A FERNERY OF TREE STUMPS (E. P.).—Your north-west aspect will be sufficiently shaded for the majority of hardy Ferns to do well. The shade of the Larch trees will prevent any danger of their being scorched. We should begin by throwing up a bank of loose rubbish against the wall, and if more stones than soil all the better. This mound, or bank, we would have equal in height to the wall, all but 3 feet, and as wide at bottom as it is high, forming it, however, in an irregular serpentine fashion. At the base of the bank lay a row of tree stumps, and fill up the interstices with soil, which may consist of peat and loam in equal parts, or failing the peat, the top soil from a wood from which the leaves are never removed but allowed to rot. Lay another tier of stumps and then fill up with soil, and so on. Work the soil into the vacant spaces as you proceed, instead of first making the roostery and then filling in the interstices, leaving the parts beneath the stumps hollow. Build up firmly, with a straight face in some parts as if it were a wall, in others sloping, and in some parts much wider than in others, and as tree stumps are more easily placed than rock stones, we should certainly have the doorway formed of the stumps placed one upon the other, and the other end, or exit, open. On the other side (for next the roostery against the wall should be a path 4 feet wide), the stumps should be placed so as to correspond with the side next the wall, and this part may be of any width, height, or form desired. The main points to be attended to are to build up the roostery firmly, to fill the openings with soil, and to make its appearance as bold and rugged as possible. The stumps for the most part should be about half buried in the soil, some almost entirely hidden, others entirely bare, and all firmly placed. In addition to filling up the hollows as the stumps are laid, the whole should be gone over afterwards, and any openings where Ferns are to be planted should have soil placed in them. All the commoner kinds of British and hardy exotic Ferns would do fairly. Of these we can only name a few—viz.:—*Lastrea Filix-mas* and varieties, *Osmunda regalis*, *Lastrea oreopteris*, *L. recurva*, *L. dilatata*, and *L. spinosa*; *Polypodium vulgare* and varieties, *P. dryopteris*, and *P. phegopteris*; *Polystichum lobatum* and varieties, and *P. angulare*; *Scelopendrium vulgare* and varieties; *Asplenium adnigrum*, *A. trichomanes* and varieties, *A. viride*; *Allosorus crispus*; *Blechnum spicant* and varieties; *Oxypteros fragilis*, *dentata*, and *Dickiana*; and *Athyrium Filix-femina* in great variety. Of exotic Ferns may be mentioned *Lastrea intermedia* and *L. marginatis*; *Polystichum proliferum*, *P. pungens*, and *P. aerostichoides*; *Struthiopteris germanica* and *S. pensylvanica*; *Oncolea sensibilis*; *Osmunda interrupta* (Claytoniana), *O. spectabilis*, *O. cinnamomea*, and *O. gracilis*; and *Cystopteris bulbifera*. All require a plentiful supply of water in summer.

WATERING OVERHEAD AZALEAS AND HEATHS (Elizabeth).—Watering the plants overhead through the rose of a large watering-pot would not do any great harm to Azaleas placed out of doors in summer, if the water was not given to excess, and only on the evenings of hot days. The night dew and rain are quite sufficient for Azaleas after the buds have set, and for Heaths watering overhead is more or less injurious. We conclude that the plants were watered overhead only, and had no water or an insufficient amount of it at the root, which, with the pots exposed to the sun, would account for the plants dying. Or it may be that the soil in the pots has been so soddened as to cause the fibres to perish, as those of Azaleas, Heaths, and all hardwooded plants will do if the plants are potted so that the water drains to not from the collar, and if it regularly given without regard to their requirements. The soil in which they are grown should never be allowed to become so dry as to affect the foliage, and, on the other hand, it should not be so regularly watered as to be very wet. The right condition is between the two extremes. There is no work published on the culture of Azaleas. Any information which you specially wish we shall be glad to furnish.

PROPAGATING HARDY FERNS FROM SPORES (W. W. W.).—Choose a pot which a bell-glass will just fit within the rim, place a large crock over the hole, half fill the pot with smaller pieces, and on them place half an inch of moss; then fill the pot to the rim with the following mixture—viz.:—sandstone broken in all sizes from that of a grain to a hazel nut, sandy fibrous peat, and yellow fibrous loam, of each equal parts, adding to the whole one-sixth of silver sand. Put over the surface a very small quantity of sifted soil, and make it firm by pressing it with the hand. Put on the bell-glass, and if it fit closely on the soil it is all right. Remove it, and stand the pot in a pan in a rather shady but not dark part of the greenhouse, for what is wanted is a diffused, though not a strong light. Give a good watering all over the surface through a fine-rosed watering-pot, filling the pan with water. Now, take the frond with the spore-cases open, and, holding it over the pot, rub it with the hand on the under side and a kind of brown or yellow dust will fall on the soil. You may scrape the spore-cases from the back of the fronds, but if the dust fall so as to make the soil brown or yellow, it is enough. Press the surface gently with the hand and put on the bell-glass, taking care that it touch the soil all round. Keep the pan, or saucer, full of water, and give none on the surface except it become dry, which it never ought to do, nor will it if sufficiently shaded and the saucer be kept full of water. When the surface becomes green tilt the bell-glass a little on one side at night, and as the soil becomes greener tilt it higher, giving a gentle watering now and then to keep the surface from becoming dry. When the plants have made two or three fronds gradually remove the bell-glass, and pot off the Ferns when they can be handled safely. The pots may be placed outside exposed to frost, but then the vegetation of the spores will not be so speedy and certain as when the pots are placed in the greenhouse.

ROSES—GERANIUMS (E. J.).—Roses with much over the roots should not have any liquid manure until they commence growth in the spring. We do not think that Scarlet Geraniums cut down and covered with ashes would survive the winter. If they did they would be weak and flower late.

DESPONTANIA SPIGOSA CULTURE (S. Horner).—The greatest drawback to blooming this plant is keeping it in too close and warm an atmosphere. It requires a cool airy situation in a light house, a fair amount of pot room, and perfect drainage. Your plant, we should think, requires potting, which may be done from the present time up to March, and for so large a plant, a 15 or 18-inch pot would not be too large. A compost of good hazel or yellow loam suits this plant, that from rotted trees being the best, and it then needs no manure; add, however, one-third of well-reduced leaf mould, and a free admixture of sharp sand. Drain the pot thoroughly, and pot with the neck or collar rather high in the centre of the pot. Keep the plant well watered whilst growing, and at other times moist. It requires about as much water as a Camellia. Age is all that is wanted to make it flower more profusely.

SEEDLING GLOXINIAS, AMARYLLISES, AND ACHIMENES (A Subscriber, J. H.).—Gloxinias and Achimenes flower the same year the seed is sown. If sown early, say in February or March, on a hotbed and grown on in the bed, with liberal treatment they will flower in autumn, but better in the second year. It usually requires three years to bloom seedling Amaryllises, and then the treatment must be such as will encourage growth.

TRANSPLANTING A CORE TREE (G. S. A.).—It is usual for this and every other kind of forest tree to form a tap root, but as yours would be a transplanted tree when planted, there is no danger to be feared on that account. It is only when seedling trees are allowed to grow up where sown that there is danger to be experienced from the tap root. We have moved trees much larger than yours, by taking out a trench a yard from the stem and 2 feet deep, cutting off all the roots we came across, and working under the ball at that depth, cutting all roots towards the centre of the ball. This we did in September, and in the following September we moved the tree, meanwhile filling up the trench. In this way we have within a year transplanted trees with a good ball and an abundance of fibres, although we had otherwise no prospect of doing so. We should try to remove the tree in March with a ball, and if we found that there was no possibility of doing so, we would fill up the trench again and wait another year. It is of no use attempting to move trees of this kind unless they have a good ball with plenty of fibres in it, and, at the same time, there is no necessity to leave a quantity of loose soil above the roots.

TEMPERATURE FOR FERNS AND FANCY PELARGONIUMS (Henry Higgins).—Maiden-hair, Gold, Silver, and other Ferns are not definite enough for us to tell you the temperature required; but you say they are greenhouse Ferns. Now, there is no Gold Fern that we are acquainted with except *Gymnogramma ochracea*, and only one Silver—viz., *Gymnogramma tartarea*, that will do in a greenhouse, and then the house must seldom be allowed to have a temperature of less than 45°. The others require a temperature of 55° from fire heat in winter, but the thermometer may occasionally read as low as 50° without injury to the plants. The Maiden-hair will winter safely in a temperature of from 40 to 45° from fire heat, which is also suitable for all the greenhouse kinds. By day the thermometer should read 5° higher on dull days, 10° when they are cloudy with clear intervals, and 15°, with air, on bright days. Fancy Pelargoniums require a temperature of from 40 to 45° from fire heat, with an increase by day as before mentioned, affording them abundance of air, light, and a rather dry atmosphere.

STAGE FOR GREENHOUSE (A Country Clergyman).—We should have a shelf along the front 18 inches wide, and also at the end from the doorway; it may either be of stone or of laths. This will, of course, be over the pipes or flue, and should be on a level with the bottom of the front wall-plate. Allow 3 feet for a pathway from the front shelf, and have a stage of wood at the back, the first shelf 9 inches from floor, and the others receding towards the back, and 9 inches above each other; the last shelf should be 4 feet from the glass. Your stage will thus have seven shelves, the first 7 inches broad, and the others an inch wider progressively upwards until the fifth is reached, when those above it need be no wider. The shelves should be inch red deal, or they may be formed of laths 1½ inch by 1 inch. It would improve the appearance if the end of the stage facing the doorway were made to rise from the pathway in the same way as along the back.

BOOKS (H.).—The little book you have from our office, if you multiply the quantities by ten, will guide you sufficiently to aid your own good sense. There is no work of the kind you mention.

COIL-PLANTING VINES.—Mr. Rivers informs us, that the surface of the soil over the coil (see page 325), should be covered with "2 inches," not "10 inches" of rotten manure, as there stated, in order to encourage the buried part of the stem to emit roots rapidly.

ESPERIERE VINE.—Tycho asks—"Is it possible to obtain cuttings, or eyes, of the genuine Esperiere Vine mentioned by 'UPWARDS AND ONWARDS'?"

HEATING BY GAS.—Tycho also asks—"Can any one give me any information of an apparatus for heating greenhouse or rooms by gas, made by R. & W. Watson, or R. & W. Wilson, London?"

COLOURING FOR OLD FRUIT-TREE WALL (E. J.).—A bushel of limo flowered down, passed through a fine sieve, and with about two or more ounces of lampblack, or blue-black (the latter is the better), made into a paste and mixed with it with a sufficiency of water, passing all through a sieve, will make a nice colour, the white of the lime being toned down. If the walls are old and unsightly, it would be advisable to add a peck of fine gritty sand and 85 much Roman cement. If much moss, &c., be on the wall, it would be as well to give a coat of the limo first. The drier and cleaner the wall when the wash is applied the better, and the longer will the colouring stand.

EDGING FOR BORDER (Surgeon, Half-pny).—We have found Thrift form a good edging where Box would not grow at all. Another very good edging plant is the small-leaved Ivy, common enough in hedgerows and woods. If you particularly wish for a plant-edging, we should advise you to try Thrift or Sea Pink, which makes a very close and tractable edging, and is, besides, very pretty when in bloom, green and grass-like at all seasons. Glass edging-tiles would be the most permanent and require no after-care, but they are rather expensive at first.

LYCHNIS SENNO.—H. S. wishes to know where this can be obtained.

COMMUNICATION (A Gardener Lad).—Write on one side only. Any sized paper, the thinner the less postage you have to pay. Do not fasten the leaves together, but number each page.

FAILURES (A. E. C.).—There are many things for which even the best gardeners are totally unable to render a reason, and we feel just in the same predicament as your gardener, and can give no reason from any description you give us. There has been no frost to injure such plants if the temperature had become reduced. The *Luculia* would have done better nearer 50° than 65°, but in from 60° to 65° the *Begonia* and *Cactus* ought to have done well. We have known some such effects from the soil being not soaked repeatedly with cold water in such dull weather, but that was not likely to be the case. Have you been painting the houses lately? Have you been lime-washing the walls with very hot lime, fresh? or have you had the pipes fresh painted, without allowing them to become well dried before much heat was applied? Even when lampblack and oil are used, a high temperature will throw off fumes that will injure most flowers, unless there is a great deal of air on. A rusty pipe is often better than a fresh-painted one, if a high temperature must be used at once. The matter is of so much importance that we shall be glad if some of our readers will give it their attention. There is no suspicion of poisoning the water? Or has anything deleterious found its way into the water? We have known an instance of a small stove from which the plants were removed in the morning, and all the walls and stages washed with fresh magnesian limestone and sulphur, and in a week the most of the leaves and flowers dropped.

VINES FROM EYES (Eques).—Vines may be raised from eyes in a coolinery or greenhouse. If you obtain the shoots now you may keep them with the lower ends stuck in moist but not wet soil, until the middle of February, then make the eyes, pot them, and place in the greenhouse, and keep the soil just moist until the shoots appear, when they are to be well supplied with water. You will see what was said on this subject at page 529 of our last Number.

TREES AND SHRUBS FROM SEEDS (Idem).—You can grow all the following from seed:—*Thuja occidentalis* and *orientalis*; *Cupressus macrocarpa*, *Lawsoniana*, *Goveniana*; *Larch*; *Laburnum*; *Juniper*; *Red Cedar*; *Holly*; *Cedrus deodora*; *Pinus sylvestris*, *pinaster*, *halepensis*; *Phillyrea angustifolia*; *Evergreen Oak*; *Eucalyptus europaeus*; *Strawberry Tree*; *Spanish Broom*; *Berberis Darwinii* and others; *Mountain Ash*; *Lilac*; *Lanrel*, common and *Portugal*; *Laurustinus*; *Privet*; *Sweet Briar*; *Judas Tree*; *Chaste Tree*; *Bead Tree*; *Mahonia aquifolium*; *Lycocasteria formosa*; *Cytisus spinosus* and *triflorus*; *Cryptomeria japonica*; *Araucaria imbricata*; *Calycanthus*; *Rhododendron*; *Azalea*; *Ailanthus glandulosa*; and *Rhianthus alaternus*. These are some that strike us at the moment, and there are many more which we do not now think of, and even if we did it would be of no use, for seeds of such plants are not always to be had, nor is it certain that they will grow when you have obtained them. Seeds of any tree or shrub which you can obtain fresh you may grow, and when you have procured them we shall be glad to assist you, if informed what they are.

LAYING DOWN A LAWN (A Constant Reader).—If you can obtain turf from a piece of ground where the grass is naturally short, close, and even in surface, and, above all, free from Daisies, Plantains, Dandelions, and other perennial weeds, then we should prefer employing turf to sowing a mixture of lawn grass seeds, for you would obtain a lawn at once; but if seeds are only to be had where you can get them, and not where you would like to have them from, then we would advise you to sow a mixture of lawn-grass seeds on your levelled piece of ground, taking care to have it free from perennial weeds, and in good tilth. Sow the seeds during the first showery weather in April. The seeds are best sown just before rain; after sowing, the ground should be gently raked over with a wooden rake and immediately well rolled, and for this the surface must be so dry as not to cling to the roller. By no means sow when the ground is wet, but, on the contrary, when it is in good working order. By July the grass will grow sufficiently to be fit to mow, afterwards cut it throughout the summer and autumn every three weeks, except in dry weather. The more it is rolled the more the grasses will tiller, and the firmer the lawn will be. If you were to give it a dressing of well-rotted manure in the following February or March, and brushed this in during showery weather in April it would vastly assist in forming a bottom, help to keep off moss, and insure a rapid growth, without which you cannot quickly obtain a close lawn. If you object to the manure, a dressing of soot will be less objectionable. During the second summer the lawn may be mown every ten days, and you will have a lawn of very fine grasses without the weeds usually found on those laid with seeds, and it will not be liable to become mossy so soon as if turf were laid, but you must also bear in mind that it will not be so soft to walk upon. In a year you can have a good lawn by sowing a mixture of lawn grass seeds, and you can have one at once by laying turf. If you do not mind the appearance, and have an eye to ultimate effect, then we advise you to sow the ground, and if you can obtain good turf and do not mind the expense, then lay seeds at once. Procuring and laying turf is much more expensive than sowing. Whatever you do, do not lay bad turf, nor sow a mixture of grass seeds unless suitable for the soil and situation.

GRAPE SHANKING (J. Mackenzie).—We should say the fault is partly owing to the roots of the Vines going so deep, and partly owing to over-cropping. With the Black Frontignan ripening so kindly without signs of shanking, we do not think that the fault is owing to the kind of Grape. The Golden Hamburg is tender in many places, and will not stand the same amount of direct sun as most other Grapes. The leaves are apt to be scorched, and that affects the fruit. If the Vine is farther from the glass, say from 18 to 24 inches, it will most likely answer better, and more especially when it has all the stock to itself instead of a part. The part of the pit might be examined as to the roots where the shanking is most prevalent; but we would be inclined to try what a thinner crop and watering whilst swelling would do. It would be well every way if the roots went no deeper than the 3 feet.

INSECTS (N.).—The white powdery covering on the Beech bark is the secretion, in vast quantities, of a waxy nature, from the bodies of countless individuals of a very small species of *Coccus*, whose history has not been thoroughly investigated. Scoring the bark may be of service, but scouring it would be much better.—W.

WEATHER WISDOM.—A correspondent, John Bryan, says, "Will 'X' state how a chart should be drawn out for keeping the necessary notes recommended by him at page 525? Then, as to the instruments required, this is the greatest difficulty, for they are very expensive. There are some barometers cheap enough, but I should like to know if they are to be depended on. Will 'X' tell me which is the best kind, and what would be the lowest price for one that could be depended upon?"

HEATING FROM BOILER BY THE BACK OF KITCHEN FIRE (W. M.).—We are not quite sure that we understand the description of the boiler, but if it is 12 or 14 inches long, and 9 inches deep, and we presume much the same in width, and set behind a kitchen fire, with fire applied chiefly to one side, then we do not think it would be sufficient to keep the frost out of an open glazed orchard-house 74 feet long by 12 feet wide, 11 feet high at back, and 5 feet in front, if the pipes from the boiler must pass through the wall and be placed in the house 2½ feet from the floor. If the boiler could be heated below as well as on the side, and the fire could be confined against it at night, it ought to heat about 150 feet of four-inch pipe, and that would keep out all ordinary frost; but considering the height at which pipes must be placed, and also the size of the house, we think it would be more economical to have a stovehole and boiler for the purpose, so that you could have the pipes just above the floor-level and also near the front of the house. More piping will be required if they are placed near the back wall. We would advise trying the half of the house first, if you resolve on the kitchen boiler. It is much against the success of the plan that the boiler is so far above the greenhouse floor.

REMOVING A LARGE HOLLY (C. P.).—Were we sure of this mild weather continuing, we would move the twenty-foot-high Holly tree from the hedge-row directly, beginning with a trench 6 or 7 feet from the stem, working the soil from among the roots with a mattock and spade, carefully saving the roots, undermining and securing as large a ball as we could. The place should be well trenched where you propose planting, and the roots should be nicely laid out, packed securely, the ground mulched to keep out frost, and if severe frost should take place in spring, a little old hay or litter may be thrown lightly over the top, which will check evaporation and lessen the intensity of the frost, which would burn up and scald the trees from the want of root-action at first. In sunny days in April, and onwards in summer, a little water should be thrown over the plant in the middle of the day. If there should be signs of severe frost before you read this, you had better defer planting until the end of March. The safest plan of all, if you could defer the operation, would be to dig down a trench about 20 or 24 inches from the stem all round, cutting all the roots, and going deep enough to cut the most of the tap roots, make some holes in the ball, water these two or three times in spring and summer, fill up round the ball with fresh sandy soil and leaf mould, and in the end of September lift and plant. The outside of the ball will have new fibres formed.

GROWING FRUIT UNDER GLASS (J. R.).—We can give you no great encouragement as to growing Vines, Oranges, and other plants in the way you propose in your contemplated corridor, which is to be 40 feet long, 11 feet wide, and 8 feet high, of opaque materials on each side, a flatish span-roof of glass, ends facing south and north. As Portland cement is what you are conversant with in your trade, we will at once allow that you are more qualified to judge of its capabilities than we are, but still you have doubts that the sides of houses formed of wood standards 3 inches by 2 inches, 18 inches apart, and 8 feet above ground, with laths nailed outside, and plastered and rough cast with Portland cement and rough gravel, would be drier and warmer than brick, if brick was made with small joints. Besides, the bricks might be made waterproof outside with tar, and when thoroughly dried would give off no unpleasant or deleterious smell. We believe that the concrete walls might be made very pretty as you suggest, by making devices and figures with shells on the concrete; but we have no faith in your trees doing well trained against the standards inside, and with no light except what may come from the span-roof, 8 feet from the bottom of the trees. Vines, &c., would flourish chiefly after they grew up underneath the roof, but then if they grew thickly there, there would be no light for the plants below them. All plants on the floor would be drawn to the glass on the roof. What we would suggest for a 12 or a 14-foot-wide house, or even for one 11 feet wide, if you cannot have it wider, would be to have stronger posts, say 4 inches by 5, 5 feet apart, and 3 feet above ground, the intervening spaces being supported with such pieces as you propose, in order to carry out your plan of cementing; but in doing so we would leave openings in the side for ventilators—say six of them, 20 inches long and 15 deep; and from a stont rail morticed in at 3 feet from the ground, we would have the glass roof, meeting in the centre at the apex, 10 feet from the floor. What you planted at the sides, 15 inches from the wall, and trained some 15 inches from the glass would then do well, and you might ornament the inside with composite tables as you propose, and keep plants of any kind in pots. For such a house you would need one ventilator at the apex in the middle of the house, and a large space below the apex at each end should be made to open, and even the doors could stand open in very hot weather. The best mode of heating, if tender plants are to be kept, would be by hot water. If we know what you decide on, we shall be glad to advise you. Could you not put up a house against your living-house and decorate the back wall? Light is indispensable for plants.

CONSTRUCTING A CUCUMBER-PIT (Montgomery).—For a pit 9 feet wide, and 3 feet in height at front, 4 feet at back will be too low—that is, the glass will be too flat. Better raise it another foot, or else make the front 2½ feet. Suppose your sunk paths to be 2½ feet wide, the bed will be from 6 to 6½ feet wide, and for that bed you would require either two or three four-inch pipes for bottom heat, and if you wanted a higher temperature in winter, three four-inch pipes for top heat. You cannot do with less than two pipes for top heat. We have lately repeatedly stated the simplest mode for arranging the bottom pipes, covering them merely with clinkers before placing the soil, or the material for plunging cuttings.

NAMES OF PLANTS (Agnes).—1, *Cantua bicolor*; 2, *Eupatorium leucoides*; 3, *Scorpioidium*? crushed and discoloured. (*Ignorant Inquirer*).—4, *Dracaena fragrans*; 5, *Pilea muscosa*. (*A Constant Reader*).—1, *Gymnogramma cæna ferrea*; 2, *Maranta bicolor*; 3, *Coleus Verschaffeltii*; 4, one of *tetracera*; 2, a mere bit of some *Pteris*; 3, *Cyrtium falcatum*; 4, one of *Asplenium* vars. of *Polystichum angulare*. (*A Subscriber, Baltimore*).—1, *Asplenium marinum*; 2, *A. adnatum nigrum*; 3 and 6, *A. trichomanes*; 4, *Adiantum capillus-Veneris*; 5, *Ceterach officinarum*; 7, a *Saxifraga*. (*W. W.*).—1, *Lastrea*, appears to be a narrow form of *L. dilatata*, but the specimen is imperfect; 2, *Lastrea Filix-mas*. (*Alpha, Acton*).—1, *Acrophorus hispidus*; 2, no fruit, probably *Lastrea decomposita*. (*G. E.*)—1, *Trichostomum fasciculatum*; 2, *Bryum ligulatum*; 3, *Hypnum rutabulum*; 4, *Hypnum alpestrum*; 5, *Equisetum limosum*; 6, *Trichostomum aculeare*; 7, *Dicranum bryoides*; 8, *Tortula muralis* (?); 9, *Griffithsia maritima*; 10, *Polytrichum undulatum*; 11, *Pontania antipyretica*; 12, *Bryum turbinatum*, or *nutans*; 13, *Bartramia arcuata*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the ten days ending December 30th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Thurs. 21	30.285	30.224	54	41	45½	45	S.W.	.00	Fine; overcast; mild night and day for the season.
Fri. .. 22	30.310	30.266	44	36	45	45	S.W.	.00	Densely clouded; overcast; densely overcast at night.
Sat. .. 23	30.340	30.283	43	28	45	45	S.	.00	Cloudy; densely clouded; overcast; slight frost.
Sun. .. 24	30.378	30.341	37	30	44½	45	S.W.	.00	Densely clouded; overcast; foggy at night; allight frost.
Mon. .. 25	30.288	30.233	48	33	44½	44½	S.W.	.00	Overcast; fine throughout.
Tues. .. 26	30.191	30.141	50	26	44	45	S.W.	.01	Densely overcast; slight frost at night.
Wed. .. 27	30.305	30.176	46	28	45	45	W.	.00	Dense fog; hazy; foggy at night, with slight frost.
Thurs. 28	29.925	29.692	50	42	45	45	S.W.	.16	Fine; densely clouded; rain and boisterous.
Fri. .. 29	29.564	29.102	61	32	46½	45	S.W.	.11	Overcast; boisterous with rain; rain at night.
Sat. .. 30	29.687	29.521	49	36	46	45½	S.W.	.08	Fine; quite clear and very fine; overcast; boisterous with rain.
Mean..	30.125	30.002	47.20	33.10	45.10	45.00	....	0.36	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE BIRMINGHAM AWARDS.

WHEN persons attempt to stifle inquiry and repress investigation, it generally arises from a secret conviction that there are matters which will not bear the light, and from which it is the interest of parties connected with them to divert public attention. I was very forcibly impressed with this fact in reading the communication of "BRAHMA;" and your readers who have perused his letter with care must have been struck with the circumstance that, whilst he displays his familiarity with subjects and events quite foreign to the question, he has not adduced a single fact in support of the positions for which he contends. His letter is purely deprecatory. According to his representation, the gentlemen who exercised the office of judging at the late Show at Birmingham are such perfect paragons of wisdom and impartiality, that dissent from their decisions is sheer impertinence, and can only be accounted for on the supposition of its arising from disappointed parties, who, not being able to bear the defeat of their expectations, "make up by clamour what they lack in argument." After thus at once sweep disposing of the complaints of the dissentients, it might have been expected that "BRAHMA" would have avoided the same defect; instead of which, he has furnished a practical illustration that, to say the least, the clamour minus the argument is not all on one side. "BRAHMA," it is true, is lavish in his denunciations against those who do not bow with implicit submission to the awards of his clients, stigmatising them as men who "doubtless believe they have been hardly dealt by," but are not "so happily constituted, or so capable of cool judgment in their own matters, as to justify them in impugning the awards of experienced and honourable men" (of course, none of the dissentients have any claim to either honour or experience), or not "able to overcome evil passions and prejudices, and to act dispassionately, when smarting under disappointment," although he is charitable enough to hope that "when they cool down," they will become sensible of the enormity of their conduct, and be touched with a feeling of compunction for their misdeeds. But with all this vehemence in arraigning the conduct and motives of the other side (a vehemence somewhat, by the way, remarkable, if the disclaimer put in by "BRAHMA" to being an "exhibitor" means that he has no personal interest of any kind in the matter), where are his arguments? He is very facetious, again, on Solomon Eagle and Eastern Pashas, which may be all very witty, but unfortunately has no connection with the subject.

To bring the matter, however, more closely to an issue, should "BRAHMA" return again to the charge I beg his attention to the following questions: 1st, I wish him to explain the points of superiority in Admiral Hornby's Dorkings over those of Viscountess Holmesdale? 2nd, In what the qualifications of the Brown Red cock and the old Piles consisted, whereby they were entitled to the prizes respectively awarded to them? and 3rd, Why the Black Bantams which have been disqualified at a show held since, should at Birmingham have obtained the first prize? But as, according to "BRAHMA," he "attends few shows," he may not be aware of these facts. Were he, however, to visit more of these exhibitions, he would probably become acquainted with some facts of which he appears to be ignorant, or which at all events he ignores. He, for instance, would have learned that in the show held since that at Birmingham, the decisions at the latter not only in reference to

Black Bantams, but in Dorkings, Cochins, Game, and, indeed, in almost every other class, have been reversed. And had he been an exhibitor where fowls notoriously the worst carried off the palm from birds having greater claims, he might possibly have been as loud in his complaints as those whom he now censures.

Towards the close of his communication, however, he discloses what it is that has caused his ire. It is the Poultry Club, "the point of whose offending" is, that they have denounced the practices of the Birmingham Judges which he pronounces to be "in bad taste," and he charges them with "having no confidence in any judges but their own, and blaming the conduct of every show not subservient to their mandates." To say nothing of this being a pure libel on a body of gentlemen numbering among them, according to "BRAHMA'S" admission, several "very honourable" men, how does this charge agree with the statement "BRAHMA" set out with, that the malcontents did not exceed some twenty, at most, clamorous individuals, who, by the pertinacity of their representations, make up for the paucity of their numbers? One statement contradicts the other, and both cannot be true. And then as to the excuses made for the Judges, through the multiplicity of their duties preventing their performing them with due care, I have only to say that the Judges ought to be held responsible for their decisions, and that if they undertake duties under circumstances which preclude the due performance of them, the blame rests on their shoulders. Whether from this cause or from incompetency, it is notorious that the decisions at Birmingham have caused very wide-spread dissatisfaction, and it is equally certain that unless it be brought under a different régime it will be superseded by other shows at which exhibitors may calculate on receiving more even-handed justice. —EXHIBITOR.

THE arguments by "BRAHMA," in THE JOURNAL OF HORTICULTURE, of December 19th, extort a revision. This correspondent proceeds to say, "The truth is, the prizes at Birmingham Show are so important to all, and such a source of profit to many, that they cannot bear to lose." This statement by "BRAHMA" is quite incapable of dispute, still it must not be overlooked by amateurs, that though these remarks bear with all possible force as directed against exhibitors alone, it is surely at least equally severe and cutting, if applied to the interest of parties by whom poultry is supplied to competitors at Birmingham, for, as "BRAHMA" himself asserts, "such a source of profit to many, they cannot bear to lose." A truth, no doubt. It is evident that the triple anecdotes of the unpopular Pasha, Mr. Primrose, and Solomon Eagle, are shrewdly introduced by "BRAHMA," to serve as a kind of private back-way, by which this year's almost universal complaints of the decisions at Birmingham may be eluded or countercharmed.

"BRAHMA" states, "Four or five discontented in a large class congregate together, and loudly make their complaints." Had "BRAHMA" not purposely turned a deaf ear to such complaints at the Birmingham Show, he must have witnessed a striking illustration of his old proverb, "Let the losers laugh, for the winners are sure to do so;" for the winners at Birmingham, certainly in many instances, not only "laughed" in their sleeves, but blushed also at their unexpected and unmerited success, supporting their sincerity in so doing, by not only offering their own prize birds in barter for those in the same class that were unnoticed, but eventually a few sovereigns to boot, to induce still further the much-coveted exchange.

Such incongruities, wherever occurring, will always make losers laugh, and winners also; but it is the laugh of irony, distinct from approval. "BRAHMA" again spontaneously assures your readers, "he attends few shows, but has often remarked, when he has been at one, that the complaints heard all day long proceeded always from the same people." That "the complaints always proceed from the same people," when he has been at one show, is quite a mistake, so far as Birmingham is this year concerned, for numbers who have hitherto been among the greatest devotees of the Bingley Hall decisions, were ranked among the foremost to complain. "BRAHMA" also assures us, that "he is no exhibitor himself, and tries to stand aloof from all influence."

It would be most unjust and ungrateful not to give the fullest credit to this statement; for I believe not a single Birmingham exhibitor ever for a moment assumed "BRAHMA" was an exhibitor, any more than, as under the signature of "BRAHMA," they would conclude he was a fowl; but all are glad to learn "he tries to stand aloof from all influence," and is thus a supporter of—FAIR PLAY.

Your correspondent, "A COUNTRY CURATE," has not put the case so strongly as he might have done with regard to the totally inadequate number of judges engaged at Birmingham. It is generally understood that two of them took the Game and Game Bantam classes, and that the other three took the remainder. Now, if that were so, the gentlemen who judged the first-mentioned classes had to inspect fifty-five pens per hour, even allowing them nine hours of daylight, and no time for refreshment, but as, in point of fact, it is only light from 8 A.M. to 4 P.M.—that is to say, light enough properly to examine fowls in pens, it is evident that the Judges must have judged upwards of sixty pens per hour for eight hours, a rate of inspection which, considering the great competition at such a show, no two men living could fairly make, however competent they might be as poultry judges.

But what these gentlemen accomplished is as nothing compared with the astounding labours of the other three, for they, having had 1179 pens to judge, must have inspected—that is, "carefully examined," 147 pens per hour for eight hours without intermission. This gives about twenty-four seconds for a careful inspection of each pen. Need more be said? Can we wonder that the best pen of Cochins were unnoticed? Is it surprising that such a blunder as Mr. Fowler speaks of was made in the Goose class? Is it not perfectly amazing that these poor over-worked gentlemen managed to make a satisfactory award in any class? In short, is it to be wondered at that gentlemen who go to great expense in getting up fowls for exhibition, in paying entry fees and carriage of their birds, are indignant at the way in which they have been treated by the Birmingham Council?

I have nothing to say against the Judges individually; indeed, with the exception of Mr. Baily, whom I conscientiously believe to be a thoroughly upright man, they are all strangers to me. I cannot help thinking, however, that after what took place last year with regard to certain Game-fowl awards, the Birmingham Council would have used a wise discretion if they had substituted some other arbitrator for one of their Game-fowl judges. It was evident that there were ugly circumstances connected with the real ownership of the fowls, as to which the quarrel I refer to took place, which were never cleared up to the satisfaction of anybody, and I cannot think that under these circumstances the appointment of that gentleman to judge again this year, was calculated to inspire with confidence the supporters of the Birmingham Show.—P.

MANCHESTER EXHIBITION OF POULTRY AND PIGEONS.

THE Belle Vue Show, held annually at the Zoological Gardens, Manchester, by the Messrs. Jennison, becomes year by year more and more popular. On the present occasion the increase in the number of entries was beyond all precedent, and everything connected with this year's Show augurs well for even a still greater development in future years. That the Messrs. Jennison well deserve such success no one can dispute; for, being accustomed to the care of living specimens of their own in the gardens, the very first symptom of any kind of ailment in any of the valuable specimens temporarily committed to their management catches their well-practised eye, and we can ourselves, as eye-witnesses, testify to the fact that time, trouble, and expense, are not in any case spared to put all right again. We are quite sure that but for this commendable practice, more than one

pen of highly valuable poultry, received in a suffering condition at the doors, could not by any possibility have reached the owners again alive. We cannot forbear here to digress to suggest more careful management by the railway companies, during transit, of valuable exhibition poultry, as though such companies may be, of course, legally compelled to "pay for" any loss or damage occurring through the negligence of their officials to such poultry, it by no means follows that any pecuniary compensation places owners in the same position as though their poultry had remained uninjured; for, to our own knowledge, it has repeatedly occurred that the loss of poultry, brought together with great care and outlay, has involved the loss of very many pounds in prize money throughout the exhibition season, besides the absence of those far more coveted trophies of success, plate prizes. These remarks are suggested from the fact that two hampers of poultry were delivered at the exhibition with the inmates all killed, having evidently been worried to death during transit by a dog. The folly of placing strange dogs, even if chained, within reach of poultry baskets, the generosity of people would have thought evident to even the most obtuse railway official, but it appears that even this gross neglect can occur by rail to the great vexation of all parties concerned. Messrs. Jennison at once returned these unfortunate specimens with a letter detailing the miserable circumstances under which they came to hand, and we cannot but express the hope that the knowledge of these facts may surely tend to induce plans which will in future prevent the possibility of any such occurrences as consignments of exhibition fowls being worried to death by dogs taking place on the railway.

Our remarks on the Show must be general. In *Dorkings* the display was uniformly excellent, and throughout the whole of the classes decided improvement was manifest, even at the first glance. Lady Holmesdale was a heavy prize-taker, and the condition in which her ladyship's birds were exhibited was faultless. The class for single *Dorking* cocks was undoubtedly one of the best that has been seen at any exhibition for years past, nor was the class for pairs of hens of this breed less deserving. We may just cursorily notice that we observed some very good *Dorkings* and also *Cochins* that had been recently washed, managed so badly that the feathers, having dried, appeared as though absolutely pasted together, from the soap not having been cleansed away. This may prove, perhaps, a serviceable hint to owners practising future ablutions. It may be as well to mention that in washing *White Cochins* the use of soda in the water brings out that objectionable yellow tinge so observable, under bad management, in the hackles, saddles, and backs of the cocks, and which, once established, nothing but the production of new feathers can rectify. Of course in *Buffs* or *Partridge-coloured* birds the effects are not observable, but as soda in all cases takes away the oil from the feathers, fowls so washed always become soon dirty again, besides assuming a dullness of plumage by no means calculated to add to their attractiveness. In *Cochins*, Captain Heaton had it almost all his own way, exhibiting his stock to great advantage. Some marvelously good specimens of *Buff Cochins* were also exhibited by Mr. Charles Jennison, but "not for competition," their owner observing most frankly that "nothing should induce him to compete for a prize at any show under his own management." It seemed a matter of regret to pass such birds unnoticed, but there was no alternative, and the honourable feeling suggestive of so much self-denial cannot fail to meet with the approval of those parties competing at Manchester. The class for *Cochin* cocks was most excellent.

In *Spanish* fowls the display was far beyond the average, and, as a whole, they were shown in first-rate feather.

In *Game* fowls the Show at Manchester was remarkably successful, and the condition of most of the pens so perfect as to leave but little margin for selection of prizes on that score. We regretted to see, however, many of the most striking pens at first sight imperfect in the feet, a fault altogether so inexcusable in *Game* fowls that every other perfection of quality cannot make up for it, nor justify their appearance in the prize list, consequently they were passed over.

The *Game Bantams* were so numerous as to make a principal feature of the Show, and so great was the competition that the prizes were far more broadly sown than customary. There were some exquisite *Game Bantam* hens shown; but we cannot guard exhibitors too strongly against showing hens with white ears—it is a fatal objection, and seems to be now assuming a far more general form than a few years back. By a little careful attention in mating the parent birds this objection is easily avoided, and just at this time the hint may therefore prove most opportune, as affecting the offspring of 1866. The *Sebright Bantams* seem quite failing as to quality and numbers all through the kingdom, but at the Manchester Show we noticed some excellent specimens of the *White Booted Bantams*, and also of those popular pets, the *Cochin Bantams*.

Mr. Jennison made his usual display of ornamental water fowls, exhibited in a state of health and plumage that takes every observer by surprise. They consisted of *Barnacle Geese*, *Brent Geese*, *Laughing Geese*, *Pintails*, *Widgeon*, *Garganias*, *Shell Ducks*, *Teal*, and several pens of exquisitely-feathered *Carolina Ducks*.

The attendance of visitors was a complete success, as was the Show altogether. The Music Hall at Belle Vue Gardens is decidedly the best building in the kingdom at which poultry shows are now held. Although a thousand pens were shown, each one was on the same level tier, each lot of birds rejoiced in the same amount of light, and yet

there was room and to spare. In fact, the hall would, with but little extra management, accommodate fully two thousand pens, and yet leave the avenues double the width of those met with at our principal shows—a feature adding, in the present day, quite as much personal comfort to lady visitors as ample room for the public does to the quietude of the stock exhibited.

That the Manchester Show is taking very rapid strides to the front is a fact that this year's meeting demonstrates beyond contradiction; and most deservedly do the Messrs. Jennison hold their present popularity, for, courteous alike to every one, they are only too anxious to give every proper consideration to any hint that may be given them without favour, feeling, or party spirit, if offered them as suggestive of any future improvement in their meetings. Under such favourable circumstances, added to a prize schedule that will be again the subject of careful revision and extension as to future meetings, the Manchester Poultry Show cannot fail to fully sustain the reputation it now so worthily holds with all exhibitors of poultry and Pigeons.

SINGLE COCKS.

DORKINGS (Coloured).—First, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, H. Lingwood, Barking, Needham Market, Suffolk. Third, J. Elsworth. Fourth, A. Fenton, Crimble Hall, Rochdale. Highly Commended, W. Cople; Sir St. G. Gore, Bart., Hopton Hall, Wirksworth, Derbyshire; W. Farr, Patricroft, Manchester. Commended, T. Burgess, Burleydam, Whitechurch, Salop.

SPANISH.—First, H. Lane, Milk Street, Bristol. Second, A. Fenton, Crimble Hall, Rochdale. Third, D. Parsley, Bristol. Highly Commended, J. Hardie; N. Cook; W. Rouse, Park Street, Bristol; G. Bridle; E. Jones, Clifton. Commended, W. R. Dull, Newport Pagnell; E. Jones; A. Heath, Calne.

COCHIN-CHINA (Cinnamon and Buff).—First, Capt. H. Heaton, Lower Broughton, Manchester. Second, J. Nelson, Heaton Mersey, Manchester. Third, R. White, Bromhall Park, Sheffield. Fourth, G. Fell, Springfield, Warrington. Highly Commended, J. Nelson; H. Mapplebeck, Birmingham; H. Tomlinson, Balsall Heath Road, Birmingham; H. Bates, Ysrdley, near Birmingham. Commended, Capt. H. Heaton.

COCHIN-CHINA (Brown and Partridge-feathered).—First and Second, Capt. H. Heaton. Third, H. Bates, Vintage House, Yardley, near Birmingham. Highly Commended, J. Elliott, Leigh, near Manchester; Capt. H. Heaton; R. J. Wood, Chorley; S. Stephens, Walsall. Commended, E. Tudman, Ash Grove, Whitehurch, Salop.

COCHIN-CHINA (White).—First, R. Chase, Tyndal Street, Balsall Heath, Birmingham. Second, Rev. F. Taylor, Keastwick, Kirby Lonsdale. Highly Commended, Capt. H. Heaton.

BRAHMA POOTRA.—First, H. Lacy, Helden Bridge. Second, J. K. Fowler, Prebendal Farm, Aylesbury. Third, T. Statter, Stand, Manchester. Highly Commended, W. Hargreaves, Bacup, near Manchester.

POLISH.—First, E. Smith. Second, H. Beldon, Goitstock, Bingley. **GAME (Black-breasted Reds).**—First, M. W. Stohart. Second, E. C. Gilbert, Penkridge, Stafford. Third, C. W. Brierley, Middleton, near Manchester. Highly Commended, J. Hardie; Sir St. G. Gore, Bart. Commended, Sir St. G. Gore, Bart.

GAME (Brown and other Reds, except Black-breasted).—First, C. W. Brierley. Second, Sir St. G. Gore, Bart. Third, T. Statter, Stand, near Manchester. Highly Commended, J. Fletcher, Stoneclough. Commended, T. Burgess, Burleydam, Whitechurch.

GAME (except Black-breasted and other Reds).—First, J. Halsall, Ince, Wigan. Second, J. Fletcher. Third, Sir St. G. Gore, Bart. Highly Commended, P. Norbury.

HAMBURG (Black).—Prize, C. Sidgwick, Keigley. Highly Commended, R. Battersly.

HAMBURG (Golden-pencilled).—First, T. Burns, Ahrum, near Wigan. Second, S. & R. Ashton, Mottrun. Third, T. Wrigley, jun.

HAMBURG (Silver-pencilled).—First, Sir St. G. Gore, Bart. Second, J. Robinson.

HAMBURG (Golden-spangled).—First, N. Marlor, Denton. Second, J. Wright, Lysonby, Melton Mowbray. Third, W. Kershaw. Highly Commended, J. Mellor; Sir St. G. Gore, Bart. Commended, J. Mellor.

HAMBURG (Silver-spangled).—First, Rev. W. Serjeantson, Acton Burnell Rectory, Shrewsbury. Second, J. Fielding. Highly Commended, Sir St. G. Gore.

GAME BANTAM.—First, R. Hawkeley, jun. Second, J. Crosland, jun., Wakefield. Third, A. Fenton.

DORKINGS (Coloured).—First, Viscountess Holmesdale. Second, T. Statter, Stand, near Manchester. Third, H. Lingwood, Barking, Needham Market. Fourth, Sir St. G. Gore, Bart., Hopton Hall, Derbyshire. **HENS.**—First, Viscountess Holmesdale. Second, Mrs. F. S. Arkwright, Etwell Hall, Derby. Third, W. Cople. Highly Commended, J. Holme, Knowsley, near Prescot; W. Harvey, Bacup, near Manchester. Commended, A. Fenton, Crimble Hall, Rochdale; Mrs. F. S. Arkwright; J. K. Fowler, Prebendal Farm, Aylesbury. **CHICKENS.**—First, Sir St. G. Gore, Bart. Second and Fourth, Viscountess Holmesdale. Third, J. Hardie. Highly Commended, C. Cork, Shoreham. Commended, A. Fenton; J. Longland, Grendon, Northampton; Miss Davies, Chester; J. G. Pearson. **PULLETS.**—First, Viscountess Holmesdale. Second and Third, Miss Davies, Chester. Highly Commended, J. G. Pearson. Commended, Mrs. Dale.

DORKING (White).—First, J. Robinson, Vale House, Garstang. Second, H. Lingwood, Lymstone, near Exeter. Third, J. Robinson.

SPANISH.—First, Viscountess Holmesdale. Second, E. Jones, Clifton. Third, E. Brown. **HENS.**—First, E. Jones. Second, A. Fenton. Highly Commended, J. Thresh. Commended, P. H. Stevens; W. Harvey. **CHICKENS.**—First, Viscountess Holmesdale. Second, D. Parsley, Bristol. Third, Miss Davies, Chester. Highly Commended, E. Jones, Clifton. Commended, Lady L. De Pennant, Penryn Castle Zangor. **PULLETS.**—First, W. Rouse, Bristol. Second, E. Jones, Clifton.

COCHIN-CHINA (Cinnamon and Buff).—First, Capt. H. Heaton. Second, J. Cattell, Lime Villa, Edgubaston. Third, Capt. H. Heaton. Commended, H. Tomlinson, Balsall Heath Road, Birmingham; H. Bates. **HENS.**—First, J. Elliott, Leigh near Manchester. Second, H. Tomlinson. Third, Capt. H. Heaton. Highly Commended, Capt. H. Heaton; W. A. Taylor, Turner Street, Manchester; C. W. Brierley. Commended, G. Fell, Springfield, Warrington. **CHICKENS.**—First, H. Mapplebeck, Birmingham. Second, G. Fell. Third, J. Nelson, Heaton Mersey, near Manchester.

PULLETS.—First and Second, Capt. H. Heaton. Third, Rev. C. Spencer, College House, Attleborough. Highly Commended, A. Featon, Rochdale; G. Fell; Rev. C. Spencer. Commended, Rev. C. Spencer.

COCHIN-CHINA (Brown and Partridge-feathered).—First, Capt. Heaton. Second, E. Tudman, Whitechurch, Salop. **HENS.**—First, Capt. H. Heaton. Second, J. Horrocks, Tonge, near Middleton. Highly Commended, E. Tudman. **CHICKENS.**—First, "Cactus." Second, Capt. H. Heaton. Third, J. Horrocks. Highly Commended, E. Tudman. **PULLETS.**—First, E. Tudman. Second, Capt. H. Heaton. Highly Commended, J. Horrocks; E. Smith, Middleton, near Manchester.

COCHIN-CHINA.—First, Rev. F. Taylor, Keastwick, Kirby Lonsdale. Second, F. W. Znrhorst, Belleville, Donnybrook, Ireland. Commended, G. Lamb.

BRAHMA POOTRA (Light).—**CHICKENS.**—First, E. Pigeon, Lymstone, Exeter. Second, J. Clarke, Chiswick Mall. Commended, J. Pares, Chilton Hall, Chertsey.

BRAHMA POOTRA (Dark).—**CHICKENS.**—First, R. W. Boyle, Gairthorn House, Bray. Second, T. Pomfret, Houghton Lane, Preston. Third, H. Lacy, Lacy House, near Helden Bridge. Highly Commended, H. Lacy; J. K. Fowler, Prebendal Farm, Aylesbury. Commended, C. Cork, Shoreham; F. Powell; T. Statter.

POLISH (any variety).—First, H. Beldon, Goitstock, Bingley, Yorkshire. Second, F. Smith, Tonge, near Middleton. Highly Commended, H. Carter, Uppertone, Holmfrith.

GAME (Black-breasted Reds).—First, M. W. Stohart, Middleton-One-Row, Darlington. Second, J. Fletcher, Stoneclough, near Manchester. Third, S. Matthew, Chilton House, Stowmarket. Fourth, F. J. Astbury. **CHICKENS.**—First, J. H. Williams, Welshpool. Second, J. Halsall, Ince, near Wigan. Third, J. Holme, Knowsley, near Prescot. Fourth, H. Bertram.

GAME (Brown and other Reds, except Black-breasted).—First, J. Fletcher, Stoneclough, near Manchester. Second, J. Smith, Grantham. Third, T. West, St. Ann's, Eccleston, St. Helen's. **CHICKENS.**—First, W. Gamon, Thornton-le-Moors. Second, J. Linnell, Anstey, Coventry. Third, T. Statter. Fourth, R. Swift, Southwell, Notts.

GAME HENS (Black-breasted and other Reds).—First, E. Aykroyd, Gillington Road, near Bradford. Second, Mrs. Hay, The Cottage, Sandbury, Derby. Third, J. Smith. Highly Commended, T. West. Commended, C. W. Brierley. **CHICKENS.**—First, Messrs. Parkinson & Field, Poulton-le-Fylde. Second, G. Clements, Birmingham. Third, T. Burgess, Burleydam, Whitechurch. Highly Commended, W. Gamon; J. B. Lucas. Commended, Mrs. Hay; J. Fletcher; J. Wood, Mount House, Wigan; H. Bertram.

GAME (Duckwings and other Greys and Blues).—First, Sir St. G. Gore, Bart. Second, J. Halsall. Third, E. Aykroyd. **CHICKENS.**—First, J. Fletcher. Second, T. Wakefield, Gelborne, Warrington. Third, R. Tate, Green Road, Leeds.

GAME (White and Piles).—First, J. Fletcher. Second, Sir St. G. Gore, Bart. **CHICKENS.**—First, J. Sunderland, Halifax. Second, T. West.

GAME HENS (except Black-breasted and other Reds).—First, J. Firth, Halifax. Second, Mrs. C. W. Brierley.

HAMBURG CHICKENS (Black).—First, R. F. Goodwin, Middleton. Second, J. Jackson, Bury. Highly Commended, R. Battersby; C. Sidgwick; J. Mellor, Kitchenfold, Slaithwaite, Yorkshire.

HAMBURG (Golden-pencilled).—First, J. Smith. Second, F. Pittis, jun., Newport, Isle of Wight. **CHICKENS.**—First and Second, T. Wrigley, jun. Third, Sir St. G. Gore, Bart. Commended, F. Pittis, jun.; W. Farr, Patricroft, near Manchester.

HAMBURG CHICKENS (Silver-pencilled).—First, J. Robinson. Second, Sir St. G. Gore, Bart. Third, J. Fielding, Newchurch, near Manchester. Highly Commended, J. Lancashire. Commended, A. K. Wood, Burnside, Kendal.

HAMBURG CHICKENS (Pencilled).—First, T. Wrigley, jun. Second, F. Pittis, jun. Commended, W. Pierce.

HAMBURG (Golden-spangled).—First, Sir St. G. Gore, Bart. Second, J. Buckley, Taunton, Ashton-under-Lyne. Third, J. Roe. Highly Commended, N. Marlor; W. Kershaw, Heywood, near Manchester; W. Farr.

HAMBURG CHICKENS (Silver-spangled).—First and Third, J. Fielding. Second, Sir St. G. Gore, Bart. Highly Commended, J. Jackson; A. K. Wood. Commended, J. Lancashire.

HAMBURG HENS (Spangled).—First, W. A. Hyde, Ashton-under-Lyne. Second, J. Fielding. Highly Commended, J. Roe; N. Marlor; J. Wright; A. K. Wood. **PULLETS.**—First, J. Andrews, Ashton-under-Lyne. Second, N. Marlor.

GAME BANTAMS (Black-breasted and other Reds).—**CHICKENS.**—First, Rev. G. Ratner, Brentwood, Essex. Second, J. Hilton. Third, J. W. Kellaway. Fourth, D. Parsons.

GAME BANTAMS (any other Variety).—**CHICKENS.**—First, R. Tate. Second, W. S. Forest, Greenhith, Kent. Third, Mrs. C. W. Brierley.

BANTAMS (any Variety except Game).—First, T. Boucher Birmingham (Buff Cochins). Second, C. W. Brierley. Third, Messrs. J. & A. Briggs, Lawden, near Leeds. Commended, P. W. Story (White-feathered Legged Bantams).

DUCKS (White Aylesbury).—First, J. K. Fowler, Prebendal Farm, Aylesbury. Second, E. Leech, Rochdale. Third, H. Jones.

DUCKS (Rouen).—First, Sir St. G. Gore, Bart. Second, A. Fenton. Third, T. Statter. Fourth, J. Holme.

DUCKS (Black East Indian).—First, Rev. W. Serjeantson, Shrewsbury. Second, T. Walsley, Chester.

DUCKS (Any other Variety).—First, T. H. D. Bayley, Biggleswade, Beds. (Brown Call Ducks). Second, T. Statter (Wild Ducks).

ORNAMENTAL WATER FOWL.—First, Second, and Third, J. Jennison, Bellevue, Manchester.

GRESE (White).—First, Messrs. J. & W. Rostron, Levenshulme. Second, A. Fenton. Third, E. Shaw, Plus Wilmot, Oswestry.

TURKEYS.—First, E. Leech, Rochdale. Second, Mrs. A. Guy, Eaton, Grantham. Third, C. P. Aekers. **POLLS.**—First, J. South, Grantham. Second, E. Leech. Third, Miss Davies, Chester.

EXTRA STOCK.—E. Pigeon, Lymstone, near Exeter (La Fleche). Second, W. Hargreaves (Dark Brahmans). Third, F. W. Znrhorst (Sultans). Highly Commended, Mrs. E. Haig (Magpie Tarifans); W. Chadwick (Blue Andalusian).

PIGEONS.

POWERS.—First and Second, A. P. Leite, Oxford Road, Manchester.

POWERS (White).—First and Second, A. P. Leite.

POWERS (Black).—First, A. P. Leite. Second, C. Cole.

CARRIERS (Black).—Cock.—First, T. Colley, Sheffield. Second, A. P. Leite. Third, M. Hedley, Redhill, Surrey. Highly Commended, F. Else, Bayswater. **Hen.**—First, M. Hedley. Second and Highly Commended, A. P. Leite.

CARRIERS (any other Colour).—Cock.—First, T. Colley. Second, A. P. Leite. Third, F. Else. **Hen.**—First, A. P. Leite. Second, T. Colley. Commended, A. P. Leite.

CARRIERS (any other Colour).—First and Second, T. Barnes, Birmingham. Third, G. W. M. Dawson, Birmingham. Commended, F. Else.

DRAGONS.—First, J. Percival, Peckham Rye. Second, W. J. Corbridge, Third, F. Smith. Commended, G. Wood; T. H. Ridpath, Rusholme, Manchester.

JACOBS (any Colour).—First and Second, J. T. Lawrence, Moffat. Third, J. B. Pinder. Very Highly Commended, F. Esquilant. Highly Commended, J. T. Lawrence; T. H. Ridpath.

NUNS.—First, C. Bulpin, Bridgewater. Second, F. Else. Third, H. Yardley, Market Hall, Birmingham.

RUNTS.—First and Second, T. D. Green, Saffron Walden. Third, E. Pigeon. Commended, A. P. Leite.

BARBS.—First and Second, A. P. Leite. Third, M. Hedley, Redhill. **BIRNS (any Colour).**—First, E. M. Eggar, Manchester. Commended, W. Massey.

TURBITS.—First, H. Mapplebeck, Birmingham. Second, E. E. M. Roys, Greenhill, Rochdale.

GWLS.—First and Second, J. Fielding, jun. Third, A. P. Leite. Highly Commended, A. P. Leite.

TRUMPETERS.—First, A. P. Leite. Second, S. A. Taylor, Wheeler Street, Loddles, Birmingham. Third, F. Else.

FANTAILS.—First, F. Else. Second, H. Yardley. Highly Commended, F. Else.

ALMOND TUMBLERS.—First and Second, A. P. Leite. Third, E. M. Edgar. Highly Commended, J. Fielding, jun.

ALMOND TUMBLERS (bred in 1865).—First, J. Fielding, jun.

TUMBLERS (any other Variety).—First, L. Glassey, Rochdale. Second, A. P. Leite. Highly Commended, A. P. Leite. Commended, J. Percival.

BEARDS.—First and Second, W. H. C. Oates, Besthorpe, Newark.

BALDS.—First, F. Esquilant, Brixton. Second, F. B. Walker.

ANY OTHER VARIETY.—First, F. Broencl, Ludgwell, Kent (Siberian Toed Pigeons). Second, A. P. Leite (Laced Fantails). Third, A. P. Leite (Swiss Pigeons). Highly Commended, J. Dyson (White Crowned Pigeons, and Passenger Pigeons). Commended, Countess of Derby (Isabells); H. Yardley.

RABBITS.

BLACK AND WHITE.—First, E. V. Ridpath, Rusholme. Second, H. Handford, Wilford, Notts.

YELLOW AND WHITE.—First, W. Stelfox, Greenheys. Second, P. Eden. **TORTOISESHELL.**—First, H. Handford. Second, E. V. Ridpath.

GREY AND WHITE.—First, A. Firth, Hyde, near Manchester. Second, G. F. Jones.

SELF-COLOUR.—First, W. Stelfox. Second, P. Eden. **HEAVIEST WEIGHT.**—Prize, H. Handford.

FOREIGN RABBITS.—First, J. Buchanan, Port Vale, Hertford (Angora). Second, B. Robinson (Angora).

JUDGES.—Poultry: E. Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham, and R. Teebay, Esq., Fulwood, near Preston, judged the Dorkings, Spanish, Cochins-China, Brahma, Pouter, Polish, and Hamburg classes; and W. B. Tegetmeier, Esq., Maswell Hill, London, and Mr. John Douglas, Clumber Park, Worksop, judged the Game Fowls, Ducks, Geese, Turkeys, Extra Stock, and Bantams. **Pigeons:** Harrison Weir, Esq., Peckham, London; Dr. Cottle, Cheltenham. **Rabbits:** Mr. Edward Owen, London.

NORTH BRITISH COLUMBIAN SOCIETY'S SHOW.

THIS Society's seventh grand annual exhibition and competition of fancy Pigeons, open to all competitors, was held in the Trades' Hall, Glasgow, on the 22nd and 23rd of December. The entry numbered 450 pens from all parts of the United Kingdom, being an increase of upwards of 120 pens over the number exhibited last year. The Powder classes were the great feature of the Show; young birds being shown in pairs in six classes, for which a silver medal, or £2 2s., was offered, and mustering thirty-eight pens, while old birds, shown singly, numbered no less than 192 pens, and had fourteen classes allotted to them. The whole were exhibited in the capital circular pens belonging to the Society; each bird not only having the advantage of a small block of wood on which to perch, but the food and water being placed on the outside in the space between each pen, the comfort of the specimens was secured in every respect.

Another remarkable feature was that scarcely an inferior bird appeared, and there were not half a dozen bare-shinned or thinly-covered-limbed Powders in the whole collection. It will be seen by the prize list that the greater portion of the prizes in Powders were gained by fanciers across the Border, for, with the exception of Mr. Montgomery, of Belfast, a most formidable opponent, and who nobly held his own in such a severe competition, very few of the honours fell to English fanciers, and, to compete successfully with Scotchmen, English fanciers will have to bestir themselves. We may mention that Mr. Leite's birds were not sent. The entire arrangements of the Show were admirably carried out by the Committee and by Mr. Rothven, the Hon. Secretary, who left nothing wanting for the comfort of the various specimens.

In the first class for the best pair of Black Pied *Pouters*, a silver medal, or £2 2s., was offered by Mr. James Moir; the medal was awarded to an even pair belonging to Mr. Ure. Mr. Montgomery exhibited the best bird in the class, a very handsome cock, receiving

very high commendation, but the bird was very indifferently accompanied. For a pair of Whites, bred in 1865, Mr. Sanderson won the medal, presented by himself, with a stout pair, in a rather weak class. Young Blues were a better lot, Mr. Ure gaining the medal, presented by Mr. Geddes, with a capital pair, after a most severe contest with Mr. Rothven, whose birds were very highly commended. In the similar class for young Reds the competition was keen, the cock in Mr. Montgomery's pen being remarkably fine. Mr. M'Farlane, however, secured Mr. Hawkins's medal with a capital, well-matched pair. Young Yellows were not numerous, but Mr. Frame's medal was won by an unusually good pair, which speedily changed ownership at £21. Young Meals were an average lot, good in style and symmetry, feather alone being the drawback; Mr. Moon securing Mr. Maclean's medal with good birds. Single Black cocks numbered eleven, and formed, perhaps, the best collection ever brought together; Mr. Montgomery's first-prize bird being exquisite in colour, very lengthy, and finely shaped, well deserving his position; the competition, however, was exceedingly close—indeed, at least half of the birds were worthy of prizes. White cocks were both numerous and of very great excellence, the champion cock at Glasgow last year again standing first, and although he was unquestionably clear of his competitors, being shown in marvellous condition, no less than seven other birds received notice, which they well merited. Blue cocks mustered twenty-seven, and were a show of themselves, such as was never seen before, there being scarcely an inferior bird in the lot. Mr. Ure's first-prize bird was remarkable for fine symmetry, colour, and length, Mr. Lightbody's second-prize one having a slight advantage in length, but not being quite equal in shape. Mr. Stuart ran a very close third with a capital representative, and many of the others were well worthy of a position. Red cocks were a large entry, the prize birds being especially noticeable, but an improvement in colour would be a great desideratum. Mr. Wallace held his position of last year in a splendid class. Yellow cocks were very fine, and the first-prize Mealy cock was scarcely inferior to any other exhibited, except in colour. In Powder cocks, any other marking, a very good Checker and White Splash took the prizes. This class also contained a veritable 20-inch-feathered bird, a Blue and White Splash, but disproportionate in limb. Black hens were capital, and especially good in colour, as well as shape and length, most of the competitors deserving notice. White hens were also well represented, Mr. Sanderson winning first with a first-class hen, which was immediately claimed at £10 10s.; the competition was very good. Blue hens were very fine, Mr. Lightbody repeating his last year's victory with the same hen, a bird of immense length and fine style. Several hens deservedly received notice, but we thought the Judges rather sparing of their favours. Red hens were a nice lot, more particularly the placed birds. Yellow hens we thought decidedly the greatest improvement in the Show, the class being large, and fast approaching the standard of the other colours. Mr. Ure's wonderful hen again had the first position, and also gained Mr. Moon's silver medal for the best Powder in the Show. The classes for Mealy hens, and hens any other marking, each brought really first-class competitors. Mr. Rothven's prize Mealy being speedily claimed.

For the best pair of Black *Carriers*, bred in 1865, Mr. Wallace offered a silver medal, and several good birds were sent, but some of the best were passed over as not answering the requirements of the class. Single Black Carrier cocks were very good; Mr. Colley, however, had an easy victory with an extraordinarily fine stout bird, while in the class for Black hens the same remarks are applicable to Mr. Else's splendid hen. Mr. Colley, however, won the oil portrait of the [most perfect] Carrier in the Exhibition with the Black cock. Young Dun Carriers were not very striking, and we fancied the relative sexes were not present in the best pen, which was passed over.

In Short-faced *Tumblers*, Mr. Fulton's first-prize Almonds and Black Mottles were particularly good, while Mr. Stuart's Kites and Agates, in the class allotted to them, were very fine.

Barbs were, as usual, only a weak class, Mr. Robinson's first-prize pair of Blacks completely outdistanced competition, and also gained the silver cup, value £5 5s., presented by a few English fanciers for the best pen in classes 23 to 31.

Fantails were a capital class, the prizes being given to plain-headed birds; the first-prize pair were excellent in tail, and the second pair were remarkably small, and graceful in carriage.

Jacobins were an average lot, all colours being well shown.

In *Trumpeters* good Black Mottles were first, and Whites second; and in *Turbits* Mr. Thackray's medal pair were small, peaked-crowned Reds.

In *Owls*, Mr. Pickering's medal pair were particularly good foreign Whites, the best we have seen for some time, and good Blues (foreign) were second.

The prizes for Any other variety were awarded first to Swiss, second Blue Swallows, and third Blue Brunswicks.

EXTRA PRIZES.

Silver Cup, or £8.—G. Ure, Dundee.
Silver Cup, value £5 5s., for the best pen in classes 23 to 31 inclusive.—J. R. Robinson, Sunderland (Barbs).

Oil-painted Portrait of the most perfect Carrier in the Exhibition.—T. Colley, Sheffield.

Prize of Two Guineas, presented by James Huic, Esq., Glasgow, for the best pair of Owls.—R. Pickering, Carlisle.

Silver Medal, or £2 2s., presented by J. R. Bonnards, Esq., for the best pair of Turbits.—J. Thackray, York.

Silver Medal, presented by William Moon, jun., Esq., Edinburgh, for the best Powder hen, any colour.—G. Ure, Dundee (Yellow).

Silver Medal, or £2 2s., presented by James Muir, Esq., for the best pair of Black Pied Powders, bred in 1865.—Medal, G. Ure, Dundee. Highly Commended, J. Grant, Corstorphine. Commended, W. Geddes, Glasgow.

Silver Medal, or £2 2s., presented by Matthew Sanderson, Esq., Edinburgh, for the best pair of White Powders, bred in 1865.—Medal, M. Sanderson, Edinburgh. Highly Commended, H. Simpson, Newark. Commended, W. Moon, Edinburgh.

Silver Medal, or £2 2s., presented by John Geddes, Esq., for the best pair of Blue Pied Powders, bred in 1865.—Medal, G. Ure, Dundee. Very Highly Commended, J. Ruthven, Glasgow. Highly Commended, T. Short, Glasgow; D. Stewart, Perth.

Silver Medal, or £2 2s., presented by Henry Hawkins, Esq., Belfast, for the best pair of Red Pied Powders, bred in 1865.—Medal, J. M'Farlane, Tolleross, Glasgow. Very Highly Commended and Highly Commended, J. Montgomery, Belfast.

Silver Medal, or £2 2s., presented by J. H. Frim, Esq., Overton, for the best pair of Yellow Pied Powders, bred in 1865.—Medal, G. Ure, Dundee. Highly Commended, G. Ure. Commended, T. H. Evans, London.

Silver Medal, or £2 2s., presented by George J. Maclean, Esq., Edinburgh, for the best pair of Mealy Pied Powders, bred in 1865.—Medal, W. Moon, Edinburgh. Very Highly Commended, G. W. Jeffrey, Ireland.

CLASS PRIZES, GIVEN BY THE SOCIETY.

POWTERS (Black).—First, J. Montgomery, Belfast. Second, G. Ure, Dundee. Third, M. Stuart, Glasgow. Highly Commended, J. Wallace, Glasgow; J. M'Farlane, Tolleross, Glasgow; J. Montgomery, Belfast.

POWTERS (White).—First, J. Montgomery, Belfast. Second and Third, J. Wallace, Glasgow. Very Highly Commended, M. Sanderson, Edinburgh; J. Ruthven, Glasgow; T. Short, Glasgow. Highly Commended, J. Thackray, York; R. Fulton, Deptford.

POWTERS (Blue).—First, G. Ure, Dundee. Second, W. Lightbody, Glasgow. Third, M. Stuart, Glasgow. Very Highly Commended, J. Montgomery, Belfast; M. Stuart, Glasgow; J. Wallace, Glasgow; D. Stewart, Perth.

POWTERS (Red).—First, J. Wallace, Glasgow. Second and Third, J. Montgomery, Belfast. Very Highly Commended, W. Geddes, Glasgow. Highly Commended, J. Montgomery, Belfast. Commended, J. Muir, Glasgow.

POWTERS (Yellow).—First and Third, G. Ure, Dundee. Second, J. Wallace, Glasgow. Very Highly Commended, G. J. Samuels, Manchester. **POWTERS (Mealy).**—First, J. Montgomery, Belfast. Second, M. Stuart, Glasgow. Highly Commended, M. Sanderson, Edinburgh; G. Maclean, Edinburgh; W. Lightbody, Glasgow.

POWTERS (Any other marking).—First, J. Montgomery, Belfast (Checker). Second, G. Ure, Dundee (Splash). Highly Commended, M. Stuart, Glasgow.

POWTERS (Black).—Hens.—First, R. Arncliffe, Parkhead. Second and Third, M. Stuart, Glasgow. Very Highly Commended, J. Montgomery, Belfast.

POWTERS (White).—Hens.—First, M. Sanderson, Edinburgh. Second, J. Montgomery, Belfast. Third, G. Ure, Dundee. Very Highly Commended, M. Sanderson, Edinburgh. Highly Commended, J. Wallace, Glasgow.

POWTERS (Blue).—Hens.—First, W. Lightbody, Glasgow. Second, M. Stuart, Glasgow. Third, J. Montgomery, Belfast. Highly Commended, J. Wallace, Glasgow; J. Montgomery, Belfast.

POWTERS (Red).—Hens.—First and Third, G. Ure, Dundee. Second, J. Montgomery, Belfast. Very Highly Commended, J. Mitchell, Glasgow. Highly Commended, E. E. M. Royd, Greenhill, Rochdale.

POWTERS (Yellow).—Hens.—First, G. Ure, Dundee. Second, T. H. Evans, London. Third, J. Wallace, Glasgow. Very Highly Commended, J. Montgomery, Belfast; G. Ure, Dundee; R. Fulton, Deptford.

POWTERS (Mealy).—Hens.—First, J. Ruthven, Glasgow. Second, G. White, Paisley. Highly Commended, J. E. Spence, Musselburgh.

POWTERS (Any other marking).—Hens.—First, W. Lightbody, Glasgow (Checker). Second, W. Geddes, Glasgow (Checker). Highly Commended, M. Stuart, Glasgow (Yellow-banded).

EXTRA PRIZE.—Silver Medal, or £2 2s., presented by James Wallace, Esq., Glasgow, for the best pair of Black Carriers, bred in 1865.—Medal, H. Martin, Glasgow. Very Highly Commended, T. Colley, Sheffield.

CARRIERS (Black).—First, T. Colley, Sheffield. Second, H. Hawkins, Belfast. Third, F. Else, London. Very Highly Commended, J. Wallace, Glasgow; G. Ure, Dundee.

EXTRA PRIZE.—Silver Medal, or £2 2s., presented by Daniel Stewart, Esq., Perth, for the best pair of Dun Carriers, bred in 1865.—Medal, J. Wallace, Glasgow. Very Highly Commended, G. Ure, Dundee.

CARRIERS (Dun).—First, T. Colley, Sheffield. Second, H. Martin, Glasgow. Third, F. Else, London. Highly Commended, G. Ure, Dundee.

CARRIERS (Black).—First, F. Else, London. Second, J. Kyle, Glasgow. Third, J. Wallace, Glasgow. Very Highly Commended, G. Ure, Dundee. Highly Commended, S. Sanday, Notts.

CARRIERS (Dun).—First, F. Else, London. Second and Third, G. Ure, Dundee.

CARRIERS (Any other colour).—First and Second, T. Colley, Sheffield.

EXTRA PRIZE.—Silver Medal, or £2 2s., presented by Fred. Else, Esq., London, for the best pair of Short-faced Almond Tumblers, bred in 1865.—Medal and Highly Commended, J. Wallace, Glasgow.

SHORT-FACED TUMBLERS (Almonds).—First, R. Fulton, London. Second, J. R. Robinson, Sunderland. Third and Highly Commended, J. Ford, London.

SHORT-FACED TUMBLERS (Mottles).—First, R. Fulton, Deptford. Second, W. H. C. Oates, Notts. Third, F. Else, London.

SHORT-FACED TUMBLERS (Agates, Kites, or Self colours).—First and Second, M. Stuart, Glasgow (Kites and Agates). Third and Highly Commended, J. Ford, London (Self colours). Commended, J. Ruthven, Glasgow (Agates).

EXTRA PRIZE.—Silver Medal, or £2 2s., presented by James Montgomery, Esq., Belfast, for the best pair of Barbs, bred in 1865.—Medal, W. Power, Belfast (Black).

BARBS.—First and Cup, J. R. Robinson, Sunderland (Black). Second, J. R. Reynolds, Helmsburgh. Highly Commended, S. Sanday, Notts (Red); J. Kyle, Glasgow (Black); G. White, Paisley.

PANTALS.—First, F. Else, London. Second, J. R. Robinson, Sunder-

land. Highly Commended, T. Moon, Edinburgh; J. Wallace, Glasgow; G. Steel, Ayr.

JACONINS.—First, J. Sharp, Johnston (Yellow). Second, R. Pickering, Carlisle. Very Highly Commended, W. Nelson, Johnstone. Highly Commended, J. R. Robinson, Sunderland; C. J. Samuels, Manchester.

EXTRA PRIZE.—Two Guinea, presented by William Power, Esq., Belfast, for the best pair of Trumpeters, bred in 1865.—Medal, J. Prentice, Glasgow.

TRUMPETERS.—First, J. R. Robinson, Sunderland. Second, W. H. C. Oates, Notts. Highly Commended, F. Else, London.

TURBOTS.—First, Silver Medal or £2 2s., J. Thackray, York (Red). Second, J. R. Robinson, Sunderland. Highly Commended, H. Yardley, Birmingham; J. R. Reynolds, Helmsburgh.

OWLS.—First, Silver Medal or £2 2s., R. Pickering, Carlisle. Second, J. Fielding, jun., Rochdale (Blue). Highly Commended, F. Else, London; J. Fielding, jun., Rochdale (White).

NEWS.—First, F. Else, London. Second, W. Nelson, Johnstone. Highly Commended, R. Pickering, Carlisle.

COMMON TUMBLERS.—First, J. Percival, London (Yellow Mottled). Second and Highly Commended, J. Sephton, Prescott.

ANY OTHER BREED.—First, E. Pigeon, near Exeter (Swiss). Second, J. Percival, London (Swallows). Third, H. Yardley, Birmingham.

JUDGES.—T. J. Charlton, Esq., Bradford; E. L. Corker, Esq., Creydon; J. Miller, Esq., Glasgow.

WENTWORTH-WOODHOUSE POULTRY SHOW.

THIS took place on the 21st and 22nd ult., when the following prizes were awarded:—

DORKINGS.—First, Hon. F. C. H. Hawke, Wormersley Park, near Pontefract. Second, J. Matfield, Cottesingham, Hull. Highly Commended.—Hurt, W. Harvey, Sheffield. **Chickens.**—First, W. Harvey, Second, J. White, Warlaby, Northallerton. Highly Commended, H. Saville, Rufford Abbey, Ollerton, Notts; Hon. W. H. W. Fitzwilliam, Wentworth-Woodhouse, Rotherham. Commended, Hon. F. C. H. Hawke.

COCHIN-CHINAS (except White).—First, E. Yearlley, Wisewood, near Sheffield. Second, W. Dawson, Hopton Mirfield. Highly Commended, R. White, Broomhall Park, Sheffield. Commended, E. Bemrose, Derby; W. Harvey.

COCHIN-CHINAS (White).—Prize, W. Dawson, Hopton Mirfield.

COCHIN-CHINAS (Any variety).—**Chickens.**—First, W. Wood, Sheffield (Buff). Second, R. W. Boyle, Bray, Co. Wicklow (Buff). Highly Commended, W. Dawson (Buff); Lady M. Thompson, Sheriff Hutton Park, near York (Partridge).

GAME (Reds).—First, C. Challoner, Steely, Workop. Second, G. Wostenholme, Sheffield. Highly Commended, Lady Milton, Osberton, Workop; F. Sales, Crowle, Lincolnshire; W. Bentley, Scholes-in-Cleckheaton.

GAME (Any other variety).—First, F. Sales, Crowle, Lincolnshire (Duck-wing Greys). Second, G. Wostenholme, Sheffield (Game Red). **Chickens.**—First, C. Travece, Thurgoland, near Sheffield. Second, C. Challoner, Steely, Workop. Highly Commended, Lady Milton, Osberton, Workop (Black Red); W. J. Cope, Barnsley. Commended, Hon. W. H. Fitzwilliam, Wentworth-Woodhouse, Rotherham (Black Red).

SPANISH.—First, W. Harvey, Sheffield. Second, Messrs. Dunch and Boulter, Sheffield. **Chickens.**—First, J. Fresh, Bradford. Second, W. Harvey, Sheffield. Highly Commended, T. Greenwood, Dewsbury.

POLANDS.—First, W. Harvey, Sheffield. Second, W. Sylvester, Hampden View, Sheffield. Extra Prize, Mrs. J. M. Proctor. Highly Commended, Messrs. Hinchliffe & Moody, Liphil Bank, Holmfirth; Mrs. J. M. Proctor, Hall; W. Sylvester.

HAMBURGS (Pencilled).—First, E. Yearlley, Wisewood, near Sheffield (Golden-pencilled). Second, W. Froggatt, Walkley, Sheffield (Golden-pencilled). Highly Commended, B. Oates, Owlerton, Sheffield (Silver-pencilled); T. Crookes, Owlerton (Golden-pencilled).

HAMBURGS (Spangled).—First, Hon. W. C. W. Fitzwilliam, Wentworth-Woodhouse, Rotherham (Silver-spangled). Second, S. Noble, Strickland Gate, Kendal (Silver-spangled). Highly Commended, W. W. Nicholls, Sale, Cheshire (Golden-spangled); W. Harvey, Sheffield; J. F. Liversidge, Newark, Notts (Silver-spangled).

GAME BANTAMS.—First, Hon. T. W. Fitzwilliam. Second, R. Dodge, Shafton View, Sheffield. Highly Commended, R. E. Postans, Brentwood; Hon. T. W. Fitzwilliam. Commended, Hon. T. W. Fitzwilliam.

BANTAMS (Any other variety).—First, W. J. Cope, Barnsley (Pekin Bantams). Second, H. Woods, Cliptone Park, Mansfield (Black Bantams) Highly Commended, W. Taylor, Hunslet, Leeds (Black Bantams); H. Saville, Rufford Abbey, Ollerton, Notts (Japanese Silkies); J. Walker, Halifax (Gold-laced); E. Hutton, Pudsey, near Leeds (Black Bantams) Commended, W. Taylor (White Bantams).

BRAHMAS.—First, R. W. Boyle, Bray, Co. Wicklow. Second, Hon. W. C. W. Fitzwilliam. Highly Commended, W. Harvey. Commended, Hon. T. W. Fitzwilliam.

SINGLE COCKS.

GAME.—First, G. Wostenholme, Sheffield. Second, C. Travece, Thurgoland, near Sheffield. Highly Commended, T. Hemmings, Sheffield, near Halifax; C. Challoner, Workop; F. Sales; Hon. W. H. W. Fitzwilliam.

DORKING.—First, W. Harvey, Sheffield. Second, O. E. Creswell, Hanworth Rectory, Hounslow, Middlesex. Highly Commended, E. T. Kell, Wetherby; H. Saville; Hon. W. H. W. Fitzwilliam.

GAME BANTAM.—First, R. E. Postans, Brentwood, Essex. Second, Hon. W. C. W. Fitzwilliam. Highly Commended, T. C. Harrison, Hull; R. Cooke, Staveley, Chesterfield.

ANY OTHER VARIETY NOT PREVIOUSLY MENTIONED.—First, W. Wood, Sheffield (Malays). Second, H. Saville, Ollerton, Notts (Black Hamburg). Highly Commended, J. Davies, Huddersfield (Silkies); C. Sedgwick, Keighley (Black Hamburg); Mrs. Hurt, Alderwasley, Derby. Commended, Hon. W. Eden, Cantley, Doncaster (Cree Coverts).

DUCKS (Aylesbury and Rouen).—First, Hon. W. H. W. Fitzwilliam (Aylesbury). Second, Hon. F. C. H. Hawke, Wormersley Park, near Pontefract (Rouen). Highly Commended, R. Massey, Hoosier, near Rotherham (Aylesbury); W. Taylor, Hunslet, Leeds.

SELLING CLASS.—First, Hon. W. H. W. Fitzwilliam (Black Red Game).
Second, T. C. Harrison, Hull (Brown Call).

SWEEPSTAKES FOR SINGLE COCKS.

GAME.—First, C. Challoner, Steety, Workop. Second, W. H. W. Fitzwilliam. Highly Commended, G. Wostenholme; R. Dodge, Sharrow View-Sheffield.

DORRING.—Prize, Hon. W. H. W. Fitzwilliam. Highly Commended, Hon. W. C. W. Fitzwilliam.

JUDGE.—Mr. Douglas.

HECKMONDWIKE POULTRY SOCIETY'S SHOW.

The fourth annual meeting of the above Society was held on the 26th of December. The morning gave promise of a fine day, but towards noon a few drops of rain fell, and when the Show was opened a smart shower came on, which for a time put a stop to the attendance of visitors. In consequence of the Manchester Show being so close at hand, the pens exhibited were not so numerous as last year; but the quality of the birds compensated for any lack of numbers, and most of them were in fine feather. The *Game* classes were the most numerous, and in the Black-breasted and Brown Red classes some excellent birds were shown. The Duckwings were good, so were the Blacks. The classes for *Bantams* contained some very good birds. In the Red and Dackwing classes several birds changed owners. The Black cock in the first-prize pen was sold for £5. In the *Hamburgh* classes there was not a single entry, a most singular case, as in this neighbourhood it formerly was rare to see a cottager keep anything but a "Pheasant or a Chitteprat." The other classes contained some good birds, but the competition was confined to a few pens in each class.

GAME (Black-breasted Red).—First, J. Beetham, Girlinton. Second, J. Vickerman, Chickeuley.

GAME (Brown Red).—First, H. C. Mason, Drighlington. Second, J. Hodgson, Bowling Old Lane. Highly Commended, J. Ineson, Staincliffe. Commended, P. Greenwood, Liversedge.

GAME (Duckwings [and other Grey and Blue]).—First, J. Fell, Adwalton. Second, J. Spedding, Chickensley.

GAME (White and Pile).—First, H. C. Mason. Second, W. Whiteley, Liversedge.

GAME (Black and Brassy-winged).—First, G. Noble, Staincliffe. Second, J. Walshaw, Heckmondwike. Highly Commended, J. Ineson.

GAME BANTAM (Red).—First, G. Noble. Second, J. Elam, Heckmondwike.

GAME BANTAM (Duckwing).—First, I. Goodall, Heckmondwike. Second, J. Elam.

BANTAM (Black).—First, J. Parker, Heckmondwike. Second, J. Brook, Heckmondwike.

SPANISH (Black).—First, T. Greenwood, Dewshury. Second, W. Whiteley, J. Walshaw, Heckmondwike. Highly Commended, J. Ineson.

COCHIN-CHINA (Any colour).—First, T. Suddick, Tong Street. Second, J. A. Briggs, Rawden.

ABRAMA POOTIA.—First, J. Walshaw. Second, S. Halliday, Heckmondwike.

ANY OTHER DISTINCT BREED.—First, S. Halliday. Second, J. Holt, Heckmondwike.

GAME HEN (Any colour).—First, J. Vickerman, Chickensley. Second, J. A. Briggs. Highly Commended, H. C. Mason.

JUDGES.—Mr. J. W. Thompson, Southwram, and Mr. J. Crossland, Wakefield.

NEWPORT POULTRY SHOW.

I was sorry to see the poultry exhibited in baskets, many of which were not adapted to the inmates. Moreover, it is well known that baskets injure the tails of cocks very often. Can it be any injury of this kind that has made former exhibitors, as Vicountess Holmesdale and Mr. J. K. Fowler, unrepresented at the late show? Some wooden pens would be much better. Many of the baskets which I saw had nothing to prevent the cocks seeing each other, and I noticed two Polish exchanging civilities not calculated to improve their future chances of success in exhibition-rooms.—Y. B. A. Z.

THE DARLINGTON EXHIBITION.

My attention has been called to an error in the report of our late show which I shall be obliged to you if you will correct—viz., you state by a foot note that Mr. Wilson's cup Game cock was disqualified on account of having a tail feather spliced. This was not so. It was the Game cockerel exhibited by Mr. Charlton that was disqualified. You also state that Mr. Fletcher, of Manchester, won the silver cup for the most prizes. This is also an error. The cup was won by Mr. Beldon, of Bingley, who scored one more point than Mr. Fletcher. I shall be obliged by your correcting this also.—J. HONGSON, *Hon. Sec.*

[We are very sorry that any mis-statement occurred, but our information came originally, we believe, from the Committee. We did not state that Mr. Fletcher had won, but that the award to him was disputed by Mr. Beldon, and was not decided—that is, when our report was written. We have heard from

Mr. Charlton also, who says, "At the Darlington Show I received the first prize for Game cockerel; and in the report in the Journal you have it that the first-prize cock belonging to Mr. Wilson was disqualified for having a sickle feather spliced in his tail. Now I am, as you may imagine, excessively annoyed to say that it is a mistake, and that it was my cockerel that was disqualified. I have been for some time suffering from a severe attack of bronchitis, and was utterly unable to attend to my fowls, and consequently they had to be seen to by the parties who breed and walk my birds. A month before, I saw the cockerel, and he was then all right, and I had not the slightest knowledge of the fraud—in fact, I was as ignorant of it as you could be. You can understand, then, my great annoyance at this unfortunate business."—Eds.]

A GOOD RESOLUTION FOR THE NEW YEAR.

RESOLVED BY AN AWAKENED COMMITTEE.—That after the first day of January, 1866, those magnificent specimens of the poultry yard denominated Turkeys, which at certain of our shows have, from some error on our part, not from any offence on theirs, been subjected to the pains and penalties of imprisonment, shall henceforth be provided with such accommodation as shall not only insure them liberty of person, but shall enable them to display those charms which have so long been hidden from public view.

"B. & W.'s" APIARY—HONEY HARVEST OF 1865.

As your correspondents are beginning to send you in the results of the year in respect to their honey harvest, &c., I am induced to forward to you my usual winter report. I may observe in general that it has not been more than an average year with me, perhaps somewhat below the average, but this is in part owing to the strong tendency to swarm which prevailed more or less during the whole season. However, I take it that this tendency to swarm is in itself indicative of the average character of the honey season, for when honey abounds and the bees are busy collecting it swarming is usually at a discount. All perceptible increase to the store of honey ceased in the first week in July, which is the earliest period I ever remember my bees to have ceased their labours. Ordinarily they add to their stores in more or less considerable quantities till about the second week in August. However, they resumed work at the end of September, and filled up their empty cells, even sealing up a good many. The honey collected thus late was very dark, and had a peculiar flavour which I never remember to have tasted before as collected from flowers. A good deal was collected from the ivy, and this may have helped to produce the flavour I speak of, but it certainly did not preponderate.

Altogether I have obtained 196½ lbs. of honey, of which I have sold £8 worth. This was the produce of twelve hives, four of them being swarms, and six of the remainder having given swarms, several even twice. The largest quantity obtained from any one hive was 32 lbs.

At the beginning of the year my hives stood thus, as compared with the status of my apiary June 14, 1864 (see JOURNAL OF HORTICULTURE of that date):—

BEE-HOUSE.		
A. Hybrid Italian queen. Born 1861. Rich and strong.	B. English stock. Queen of 1864. Very strong and rich.	C. Pure Italian queen. Born 1862. Very strong, and rich in honey.
D. Pure Italian queen. Bred out of C in 1864. Strong and rich.	E. Pure Italian queen. Bred out of C in 1864. Strong and rich.	F. English queen. Degenerated stock. In 1864 had a pure Italian queen; now has all black.
UNDER COVER.		
G. Pure Italian queen. Bred out of C in 1863. Strong and pretty rich.		
GARDEN.		
H. English queen, 1863. Strong and rich.	I. Pure Italian queen. Bred out of C in 1864. Tasmanian hive. Rich and strong.	

The condition of F puzzled me, because at the close of 1864 there were many beautifully-marked Italians, whereas I could not see a single one in the hive this spring. This led me to fear (otherwise there is no truth in the doctrine of partheno-

genesis as pertaining to bees), that my so-called "pure Italian" queen of c was really a hybrid. Other circumstances have convinced me of this, and Mr. Woodbury was of the same opinion when he paid me a visit in August last; but of this more presently, and yet I am not aware that I ever saw any black English bees in c since it became Ligurianised three years ago; whilst the various young queens which I have raised during the last two seasons have produced a mixed race, in which the golden zones have largely displayed themselves. It is certain, however, that in no single instance has the doctrine of parthenogenesis demonstrated its truth in my apiary, although there were clouds of drones all this summer, bred by at least five (supposed) pure Italian queens, some of them, too, very distinctly marked, making the welkin ring with their noisy trumpetings. I confess to having been very much disappointed at the result of my painstaking labours in weeding out my English blood, which bids fair to prove the stoutest in the contest, and to remain master of the field. In justice to Mr. Woodbury I am bound to say that he has kindly supplied me with another queen,* which I sincerely hope may turn out all that he and I could wish.—B. & W.

(To be continued.)

FEEDING RESCUED BEES.

I HAVE bought, in order to save them from the brimstone-pit, a small lot of bees, which only weighs 10 lbs. Last week I gave them a quart of syrup (2 lbs. of sugar in a pint and half of water) in a bottle through the top of the hive, and they have not taken it half down yet.—A. B. B. K.

[Your syrup appears to have scarcely a sufficient proportion of sugar. We use 3 lbs. of sugar to 2 lbs. water by weight. We do not know how you can accelerate matters so late in the season. If the contents of the bottle remain, as they should do, perfectly suspended, and do not drip into the hive, it need not be removed during the winter.]

BEE DYSENTERY.

As your correspondent "A. W." desires the opinions of apianians regarding dysentery in bees, I beg to submit the following as the result of my own experience. Bees in fine weather have little or no disease, foul brood excepted; it must, therefore, be in cold damp weather that we expect such. It is well known that they can raise or lower the temperature of their hives according to circumstances—in fact, that they are a kind of living fire which requires fuel in the shape of honey to keep it up. We will imagine the case of a hive not very strong in numbers: the bees are then obliged to feed more frequently than in one which is strong, for the purpose of keeping up that degree of heat which is essential to their health, and, consequently, when they have filled themselves with honey there is more perspiration, and there not being sufficient heat in them to send the steam off, it falls back and is condensed on and absorbed by them, disease and death being the result. We only look for this disease in cold weather, and in hives which are damp, as dry cold does not injure bees. How, then, can their safety be cared for? as even if there were a medicine for their cure, it could not be administered in such cases since it would only hasten the catastrophe. We must, then, keep as near to nature as possible by applying heat to restore them; and this requires time, because they must be let alone until the weather be such as to admit of their flying abroad. In such cases I choose the first fine day that I can, have some thick boards ready to place below the hives, having had them previously well heated, in fact as warm they can be without burning. When these are put under the hives they raise the temperature, setting the bees in motion, and when these come to the warm board it strengthens them greatly. They are then able to fly out and empty themselves. It is well to do this with all the hives, as the heat tends to dry up any moisture that may be in them.

I add the following for the benefit of "M. S." in regard to queens mating with drones. So late as the 2nd of September, (when I considered that all the black drones were slaughtered, at least they were so in our neighbourhood, and two weeks before that they had made a wholesale slaughter at the moors, and therefore thought there would be none but Ligurian ones living, which two hives had preserved), whilst watching a hive

I saw the queen come out and fly for fifteen minutes before the hive: she then went in, but immediately came out again and joined a drone. I watched them till they came down to the roof of the house, but in a minute she returned again, when she again took flight, and this time she must have gone a long way off to choose for herself a husband, as she is now the breeder of hybrids, proving she had been wedded to a black.—A LAN- ARSHIRE BEE-KEEPER.

POLLEN-GATHERING ON CHRISTMAS-DAY.—Pollen was collected by my bees on the shortest day; but what is even more remarkable, on Christmas-day, which was both mild and sunny, quite a stream of busy and successful little foragers poured in and out of the stock referred to in page 536, filling the air with a delightful melody which, however unusual at this advanced season, discoursed most excellent music to the ear of—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

DARLINGTON SHOW.—We are informed that the first prize for Powder cocks was awarded to Mr. H. Beldon, and not to Mr. J. R. Robinson.

EGG-PRODUCING FOWLS (A Farmer).—For your farm, and for the purpose of producing eggs, we recommend you to keep Golden-spangled Hamburgs.

PHEASANTS DYING (A. L. H.).—There does not seem any cause for the death of your Pheasants, beyond roup. Instead of a cabbage give them every day several turfs of growing grass, cut with plenty of earth to them. Feed on bread steeped in strong ale, and put plenty of camphor in their water. They will eat the fresh earth, and we believe the course that we have advised will prove a cure. Pheasants at five years old are old birds, and we should advise you next year to save some young ones.

COMMENCING POULTRY KEEPING (B. B.).—You have first to consider your locality and its poultry requirements, next whether you intend to breed for a local or for the London market, whether there will be the readiest sale for eggs or fowls for table. With the appliances you possess you may fairly look for a good profit. For hardy fowls, good layers, sitters, and mothers, we should advise Cochins or Brahmas; for choice table poultry, Dorkings. If there is a good demand for choice eggs, especially in winter, at large prices, Spanish pullets will be required. Such premises as you describe will afford facilities for keeping several breeds; Spanish should be one of them. We believe you should give the Dorkings the chief run; Cochins, Brahmas, and Spanish will do in confinement in any of the out-houses you mention; a run could be afforded for them by enclosing an outer space with wire netting, because, although certain breeds will do well in confinement, they do better with a larger amount of liberty. Common Pigeons will suit best as general breeders, they are hardier and more prolific than fancy ones. There is no occasion for more than a very small outlay to turn any out-house into a perfect poultry place, having perches within 2 feet of the ground, and a dry gravel floor. There are now plenty of good books giving full instructions, and for your stock apply to Baily, of Mount Street.

FOWLS SUFFERING FROM CHAMP (Subscriber).—The sudden change of weather from extreme drought to constant damp and heavy rains may account for much of the cramp you complain of. It is, however, more often caused by improper flooring for their roosting-places, such as stone, brick, or boarding. If you have either of these remove it; if you cannot do that, cover it some inches deep with dry gravel. If you have no gravel, get that which is most like it. Road grit is an excellent substitute. Onions are very good for Turkey. Stimulants, such as strong beer, a mixture of bean, pea, and barley meal slaked with beer is good food. The chickens will rally by having bread steeped in it. The present weather will necessitate generous feeding.

BREEDING SEEBROHT BANTAMS (Sebright).—Many, indeed most, breeders mix their Gold and Silver Bantams. Still, if you wish for Silver birds, you are more likely to have them from Silver than Golden birds. Unfortunately all the Silver now have a golden tinge.

TURKEYS BREEDING (H. A. P.).—Turkeys will breed for many years, but as they get old they are less prolific. We should not keep them after five or six years. Both sexes should not be old alike, but where one is old care should be taken to mate with younger.

DORKINGS' COMBS (Scotchman).—If every other point were equal, and the large comb was in every way perfect, we should certainly prefer it to the small one. Small combs are not characteristics of the Dorking breed. If the large comb lopped or fell over, it would be a disadvantage, and we should prefer the smaller one.

COCHIN-CHINA COCK'S COMB (H. H. J., Jun.).—Uneven serratures in the comb do not disqualify, though they would be considered if the competition were close. We take for granted that you do not mean "sprigs" on the side of the comb, which would be a fatal objection, probably.

FOOD FOR GOLDFINCHES (N. N. S. S.).—You had best feed your Goldfinch on good, sound, and bright canary seed, give clean water, and keep the cage bandied. It may have chickweed, groundsel, and the heads of thistles, dandelion, and plantain when in season. A little maw seed is good, but hemp and rape seed are to be avoided.—B. P. B.

POPPY SEED FOR BIRDS (S. A.).—The seeds of *Papaver somniferum* are very small bluish seeds, sold for birds under the name of "maw seed." They are not injurious to small birds. The seeds do not contain opium, but they contain a very fine oil, and are much better for cage birds than either rape or hemp seed.—B. P. B.

POULTRY MARKET.—JANUARY I.

SENDERS seem to have exhausted their stocks and their energies, and the supply of most articles depends on parcels that have been buried for days under hecatombs of Geese and Turkeys, and now come to light. Most Christmas markets are alike, and while there is almost always a good demand for the best of all sorts, much that is inferior is difficult to sell at any price.

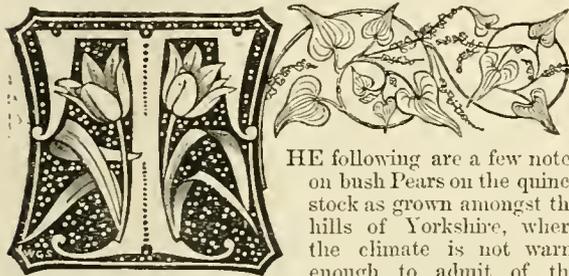
* I also last year presented my esteemed friend with an Italian queen of unquestionable purity, but she, unfortunately, came to grief on her arrival.—A DEVONSHIRE BEE-KEEPER.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 9—15, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				
9	TU	Cuphea platycentra.	41.1	39.7	35.9	14	6	af	8	9	af	4	42	af	0	32	11	22
10	W	Cimerarias.	41.8	39.4	36.1	17	6	8	10	4	44	1	57	11	23	7	50	10
11	TH	Cytisus.	41.7	39.6	36.1	19	5	8	12	4	46	2	after.	24	8	14	11	11
12	F	Gelista.	42.4	39.8	36.6	16	4	8	13	4	45	3	1	1	25	8	37	12
13	S	Cyclamens.	42.9	32.1	37.5	19	4	8	15	4	43	4	42	1	26	9	0	13
14	SUN	2 SUNDAY AFTER EPIPHANY.	42.0	29.8	35.9	16	3	8	16	4	38	5	30	2	27	9	23	14
15	M	Daphnes.	41.5	28.9	35.2	12	2	8	18	4	38	6	26	3	28	9	41	15

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 41.9°; and its night temperature 30.5°. The greatest heat was 56° on the 14th, 1849; and the lowest cold 4° below zero, on the 14th, 1338. The greatest fall of rain was 0.80 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

BUSH PEAR TREES ON QUINCE STOCKS IN YORKSHIRE.



THE following are a few notes on bush Pears on the quince stock as grown amongst the hills of Yorkshire, where the climate is not warm enough to admit of the

successful cultivation of Wheat:—

Doyenné d'Eté makes a very short but robust growth on the quince stock, and bears an abundance of fruit, which ripens about the 1st of August. The fruit should be gathered before it begins to turn yellow. It will then be melting, juicy, and sweet. It soon becomes mealy if kept more than a day or two.

Beurré Giffard forms a small but compact bush on the quince. The growth is quite satisfactory. The shoots require to be shortened to 4 or 5 inches in length about the beginning of July, as the tree forms fruit-spurs sparingly. The fruit ripens well, and is melting and juicy, with a flavour resembling the Jargonelle.

The Jargonelle forms a dwarf spreading bush on the quince. It requires the same treatment as Beurré Giffard, and bears freely and regularly. This tree bore forty-four good-sized Pears last autumn.

Beurré Goubault makes a most beautiful bush, like a forest tree in miniature. Bears abundantly and regularly. The fruit ripens well, is juicy, melting, with a pleasing aroma. It is ready for use about the first week in October. This variety bore seventy fruit in 1864, and ninety in 1865.

Fondante d'Automne forms a beautiful vase-shaped bush, bears freely, and the fruit ripens well, and is melting and sweet, with a most agreeable aromatic juice. It is ready for the table about the middle of October. This bush produced forty-eight fine fruit in 1865.

Rivers's Summer Beurré d'Aremberg grows freely on the quince, is healthy, and shows no signs of causer. It will be a free bearer, I think, because the tree is already studded with fruit-spurs. A good hardy Pear is much wanted to succeed Beurré d'Amanlis, and to be ripe about the middle of September, between that Pear and Louise Bonne or Fondante d'Automne. As Mr. Rivers states that the Summer Beurré d'Aremberg is ready for the table early in September, and is of excellent quality, it will, no doubt, form a valuable addition to our early autumn fruits.

Beurré Superfin makes a handsome spreading bush, grows vigorously, and ripens its wood well; but hitherto the blossoms have always been small and weak; even this year it has only managed to set one fruit, while another tree on the quince, trained against a south wall, puts forth healthy fruit-spurs, and bears freely. The flesh is very

fine-grained, very juicy and melting, with a most refreshing acidulous flavour. My gardener has used his utmost skill to make this tree bear fruit as a bush, but hitherto without success. I can only conclude that it requires a wall in cool climates. There is one peculiarity I ought to mention—the fruit when ready for gathering will not easily part from the spur, but some slight force must be used in order to detach it.

Alexandre Bivort forms a handsome spreading bush, grows freely, and puts forth a proper amount of fruit-spurs, but it is (like Beurré Superfin) too tender to succeed as a bush, and, therefore, requires a wall in cool climates; whether it is deserving of such a situation I am at present unable to state.

Comte de Lamy assumes the shape of an upright cup, makes a stout robust growth, and produces a moderate crop of medium-sized fruit, which ripens well in October. The flesh is melting, juicy, and most excellent. The tree is hardy.

Doyenné Boussoch grows into a fine spreading bush, and bears freely very fine large fruit, which ripens well. Two Pears of this variety weighed 18½ ozs. The flesh is crisp and juicy, with the flavour of an Apple, and very refreshing. This fruit is ripe towards the end of October, and is quite distinct from any other Pear I have ever tasted.

Beurré Hardy forms a very handsome spreading bush, remarkable for its vigorous growth and the beauty of its abundant rich green foliage. It must be able to flourish in the most unfavourable soils. This bush has been forked out of the ground every year for the last four years, and it seems rather to like the operation than otherwise. It produces large pyramidal-shaped fruits; flesh melting, and very juicy, with a slight yet agreeable perfume. Ripe early in November.

Comte de Flandre assumes the form of a Cypress, and is decidedly the most beautiful tree in the collection. It puts forth in spring fine large trusses of bloom, which remain a long time in flower; every bloom passes into a fruit, which has no idea of tumbling off, so the scissors must be freely used. One fruit weighed rather more than three-quarters of a pound, and all the rest were fine, large, pyramidal-shaped Pears. The first fruit was ripe on the 10th of December, the second on the 20th, and the remainder of the crop is still in the fruit-room; so this variety ripens slowly, and is not inclined to decay. It comes into season in December and January. Flesh fine-grained, without a core, melting, very juicy, sweet, with an agreeable aroma. A jury of three persons voted it to be superior to Glou Moreeau grown against a south brick wall. This is likely to become a valuable winter Pear, and to deserve a wall in unfavourable situations.

Baronne de Mello grows freely, and produces blossoms in abundance, which never set. It is decidedly too tender to succeed as a bush in a cool climate. It requires a wall.

Doyenné Defais forms a healthy upright tree, which will bear abundantly against a south wall, but as a bush its flowers are too weak and tender to be fruitful. This Pear has borne one fruit this autumn, which ripened perfectly,

and which, in shape, size, and flavour, resembled Winter Nelis. Flesh fine-grained, melting, rich, but it differs from the Nelis in having a refreshing acidulous juice very agreeable to the palate. It is a first-rate Pear, ripe in November.

The Seckle on the pear stock forms a healthy vigorous bush, bears freely, and ripens its sweet, perfumed fruit.

With my present experience of bush Pears, I should recommend for cool situations the following six varieties:—Jargonelle, Beurré Goubault, Fondante d'Automne, Louise Bonne, Beurré d'Amanlis, and Comte de Lamy; and if six more were desired I would add Beurré Giffard, Summer Beurré d'Aremberg, Suffolk Thorn, Autumn Bergamot (double-worked), Seckle, and the Hessel. This last variety is sometimes incorrectly spelt Hessel and Hazel. It was introduced from abroad by an ancestor of Mr. Pease, of Hesselwood; hence its name.—C. I. M.

ROSES FOR THE NORTHERN DISTRICTS.

As page 511 of the volume of the Journal just concluded, a correspondent (J. Hunter) is referred to the Rev. Mr. Radclyffe's list in No. 194, for Roses suitable to the north of England. It is certainly a good one, but it contains varieties that I have not yet found to open quite so freely here as I would wish. I will, therefore, presuming that your correspondent is a beginner, and not about to commence on a large scale, point out those which I think most likely to suit him. I have not grown the whole of the summer Roses enumerated, but the following I can vouch for, and I think they may almost be considered the cream of the lot—viz., Madame Zontinan, Charles Lawson, Coupe d'Orléans, Chénédolé, Brennus, Paul Ricaut, Kean; Moss Laneii, and Baronne de Wassenäer. To these may be added Comtesse de Murinais, not a fine Rose, but it blooms freely, and is very hardy. I have no doubt that many of the others would succeed well with Mr. J. Hunter, but those I have named are good, and may be relied on.

Now for the autumnal kinds, which on account of their perpetual-blooming qualities are more highly prized than the others.

Whites, or nearly so.—Aidalie, rather shy in opening sometimes, but good autumnal whites are too rare for it to be omitted; Souvenir de la Malmaison, Mrs. Bosanquet, and Madame Vidot. I would like to add Madame Rivers, and Caroline de Sansal, but my plants of these varieties were put in late, and consequently have not yet had a fair chance. I cannot, therefore, speak positively in regard to them, but they are beautiful Roses, and certainly well worth a trial.

Rose Colour and Shades of Pink to Light Carmine.—Anna Alexieff, Anna de Diesbach, Comtesse de Chabillant, William Griffiths, Louise Peyronny, Louise Odier, Catherine Guillot, Baronne Prevost, Colonel de Rougemont, John Hopper, Madame Boll, Jules Margottin, Victor Verdier, Baron Gonella, and Paxton.

Of the above, Baronne Prevost and Colonel de Rougemont are very much alike. Should both not be required choose the former, its habit is much more robust, and, therefore, more likely to succeed; the latter is, perhaps, the finer flower of the two, but there is really very little difference between them. There is also some resemblance between Comtesse de Chabillant and William Griffiths, but the Comtesse is decidedly the better. Paxton, on the Manetti stock, grows vigorously, and is well adapted for a pillar.

There is another Rose which ought, perhaps, to have been included with the above, but its colour scarcely comes within the range; I must, therefore, give it a place by itself, and a note of praise also, for it fully deserves it. I allude to King's Aere, colour bright vermilion. This is really a superb Rose; its fine habit, hardy constitution, and splendid flowers are sure to make it a favourite. I shall be much mistaken if it do not hold its place as a first-class flower long after many of our more highly-favoured varieties have disappeared. Our old friend Jules Margottin has met with a powerful rival at last, one for whom he must, in my opinion, ultimately make way. I feel convinced that, both in the show-room and rosery, this fine Rose must long occupy a prominent position. The one or two blooms I had of it were very fine. As my remarks are chiefly intended for amateurs who have had little experience in the cultivation of the Rose, I may mention that on receiving a plant of this variety about the end of last January, I had occasion to shorten one of the branches at the time of planting. The part cut off I was about to throw away, when it occurred

to me that something might be done with it. I consequently looked up a Manetti stock, and made a graft of it, which I potted and placed in my sitting-room window under a glass shade, for I had no bottom heat at the time, and I have now for the little trouble I took, two nice plants instead of one. I merely mention this to show that there are more ways than one of doing a thing.

I must now notice some of the most eligible of the high-coloured varieties. There is a great deal of sameness in many of them; but most of the following are distinct and good, and will not fail with proper treatment to give every satisfaction.

Crimson, Rosy Crimson, and Scarlet.—Charles Lefebvre, Gloire de Santenay, Sénateur Vaisse, François Lacharme, Prince Léon, Baronne Halez, Beauty of Waltham, Madame Charles Crapelet, Géant des Batailles, Général Jacqueminot, Maurice Bernardin, Duc de Rohan, General Washington. The last three do not at all times open quite so well as I would like, but they are grand Roses, and should have a place in every collection.

The following are good, but not equal to the above—viz., Lord Raglan, Maréchal Vaillant, Eugène Appert, Duchess of Norfolk, Turenne, Buffon, Souvenir de Leveson Gower, Triomphe de l'Exposition, Triomphe d'Alençon, Madame Louise Carique.

Of the first selection, Beauty of Waltham and Madame Crapelet are very much alike, so much so that the difference between them at times is barely perceptible. I am, however, of opinion, that they are distinct Roses. Madame, if anything, is the larger and bolder flower of the two, but the Beauty is smoother in the petal, and brighter in colour, and, I think, more lasting, at least such is my experience of them here.

Darker Varieties.—A great many have been introduced of late years, and they are certainly very beautiful, but I do not think, generally speaking, that they succeed so well in the north as the lighter colours. Of all the varieties I have tried, none have done so well with me as Empereur de Maroc. Its flowers if anything are rather small, and in other respects not quite perfect, but it is one of those gems without which a collection would not be complete. It grows very freely, and its beautiful dark maroon flowers are very fragrant. If others are wished for, the following may be tried, but they have not yet given me entire satisfaction: Prince Camille de Rohan, Alfred de Rougemont, Duc de Cazes, Jean Bart, François Arago, Cardinal Patrizzi, and Victor Emmanuel.

With regard to *Tea-scented Varieties*, I would recommend your correspondent to have very little to do with them, at all events for out-door purposes. Our atmosphere is too cold and humid for their successful cultivation in the open air. Gloire de Dijon is an exception, it is by far the finest of the lot, and cannot be too largely cultivated. This variety and Empereur de Maroc, budded on a nice healthy stem about 2 or 3 feet high, make a fine union standard. The contrast is striking and beautiful.

Of Yellow Varieties. Celine Forestier and Triomphe de Rennes are the best. The Austrian Briars, Harrisonii and Persian Yellow, may also be tried. Bourbon Queen, of a buff salmon colour, is a free bloomer, but of no great merit in other respects.

I may possibly have omitted many good and suitable Roses in the above lists, but out of about 140 varieties I have found those named to succeed best in this locality. Last season, however, was very trying, and should the next be more favourable I may be agreeably disappointed with some of the others. My plants suffered severely from mildew, some varieties more than others, but all were more or less affected by it, with the exception of Triomphe de Rennes, which escaped altogether.

In conclusion, I would recommend your correspondent, and others in similar circumstances, to be very careful in selecting new varieties. It is better to begin with a few established favourites than to make selections at random from the descriptive catalogues of nurserymen, which, although generally very truthful, cannot safely be taken as a guide under all circumstances. Soil and situation are everything with the Rose. The catalogues themselves show this, for we frequently find varieties in the first class of one that are only allowed a place in the third or fourth classes of another. This is simply owing to what I have stated, for in no other way can so much difference of opinion be accounted for. It, therefore, shows the necessity of ascertaining beforehand whether any particular variety that may be desired is likely to suit the locality in which it is intended to be grown; in order to know this we can never do better than consult the nurserymen from whom we obtain the plants.—LECH NESS.

MY ORCHARD-HOUSE.

I took my first idea of the construction of an orchard-house from Mr. Rivers, and in erecting my houses I followed the directions contained in his excellent work on the "Orchard-House." I went economically to work, had my rafters and plates all cut and planed by machinery, and hired a handy carpenter at 4s. a-day, who, singly, built, glazed, painted, and, indeed, planted my house. I repeat, that in erecting the structure I followed the directions of Mr. Rivers, but in selecting, planting, and pruning my trees, I as implicitly followed the plan recommended by the Rev. T. C. Bréhaut. In training my trees I indulged a fancy of my own.

One fine day, happening to be in Longmans' shop in Paternoster Row, I stumbled upon my friend Mr. Bréhaut's treatise on "Diagonal Cordons," which at once rivetted my attention, and determined me to erect an orchard-house. Accordingly, I tried my hand on a small span-roofed one, about 40 feet by 10, and 12 feet high, but was very unfortunate, as in the second year (two years ago), I overdoled my house with the smoke of gas tar to kill the aphides, and this stripped my trees of all their leaves, and gave them a check from which they have only this last season recovered. Nothing daunted, I set to work, and my man built me another span-roofed house, length 162 feet, breadth 23 feet, height 15 feet to the apex, and 7 feet in height at the sides. There are five wooden platform walks the whole length of the house, the centre walk 5 feet wide, and the other two walks on each side 2 feet wide. These walks are made of deal boards, planed, and have an aperture of about an inch, so as to allow the "skyeey influences" to have their effect on the subjacent soil.

I planted my trees 3 feet apart; and according to my friend's direction, I commenced to train them at an angle of from 65° to 70°, until the period arrived to lower the branches to their proper berths—viz., to the angle of 45°. Previous to planting my trees I had strung my house throughout with thin galvanised iron wire, No. 14, a foot apart, at an angle of 45°. These wires, commencing about a foot from the ground, extended first to within a foot of the glass, in a line with the platform walk, then, at the same angle, following the slant of the roof up to within a foot of the apex, and so continued down the other side at the same angle, so that my trees on one side have an inclination to the north, and on the other to the south, which has a beautiful effect. Of course, one tree fills three wires, the branches being a foot apart in accordance with my friend's instructions. I have another row of trees between the two platforms on each side, all trained in the same way. The outer platform on each side is close to the glass, and to the ventilating-doors, which are 14 inches deep, extend the whole length of the house, and are let down outside on hinges so as to just clear the ground. These doors, as well as three larger ventilators which I thought necessary to place in the roof, I have always kept wide open, night and day, after the third week in May. I have fruit trees of all kinds, but chiefly Peaches, Nectarines, and Apricots, all pinched *à la* Rivers, and pruned *à la* Bréhaut; indeed, were the trees not so pinched and pruned they would soon become a mass of confusion; whereas, now, the branches are all fringed round with short shoots reduced to obedience. No geyrand shot can live under such severe discipline. I had a most abundant crop last year, too many indeed, and I am now busy pruning. "I cut boldly and fear not," as my friend enjoins, and I find the observation of Mr. Rivers quite correct, that "Cut as you will you are sure of plenty of fruit;" but I recommend all amateurs to follow the rules prescribed for wood and fruit. In addition to the diagonal cordons of the centre, I have one hundred pyramids—viz., fifty on each side, alternately in pots and in the borders, but I mean to remove them if they at all mar the progress of the diagonal cordons, which are to be the permanent trees.

I fear that I am trespassing on your space, but I cannot refrain from exulting in the idea of the magnificent spectacle which the centre, or crinoline walk as I term it, will present with the groined arch of beautiful fruit trees overhead; for already in this, the third year, some of the trees are advancing towards their destination, the apex. In describing my house, I omitted to state that I have at the north end of it a lean-to house 80 feet long, and 13 feet broad, and of the same height as the span-roofed house, which runs into it, and, in fact, the two form one building. The trees on the back are on diagonal wires 8 inches from the boards, and, of course, fringed all round like a sweep's flue-brush. Most of these trees have reached

the top of the house. I water my trees with two longitudinal gutters, one on each side, made of zinc, and perforated at the bottom with holes a foot apart, just large enough to admit of being closed with galvanised round clout nails, so that I can, at pleasure, alternate the supply to my trees, as I have an abundance of water. This gutter I make fast to the rails which extend the whole length of the house, and to which the diagonal wires are attached. I have about 450 trees in my large house.

I may add, that I have on my ground, constructed a Pear and Plum trellis about 450 feet long and 15 high, on which I am training my trees after M. Du Breuil's plan, each tree 14 inches apart, and pruned *à la* Bréhaut, and trained at an angle of 45°, but I have dispensed with diagonal wires, and use instead horizontal wires 18 inches apart, to which I attach osier rods, which are removable when you want to lower the branches to the proper angle. Indeed, were I to start *de novo*, I would adopt that plan in the orchard-house, and dispense with diagonal wires altogether, as there is some trouble in keeping them tight.—RICHARD CLAY, *Rose Bank*.

P.S.—Since writing the above, I notice that in a late Number Mr. Bréhaut makes mention of the method of training adopted in my orchard-house.

CYCLAMENS.

In reply to Mr. Abbey's inquiries, I regret to say that I am not able to name the varieties of Cyclamens which I found growing in Sicily, Syria, &c., for I unfortunately lost my dried specimens of them. My impression is that it was *C. neapolitanum* which I found growing in such profusion in Sicily during the latter part of March. I happen to know that it was the earliest-flowering variety, because a botanical friend, who travelled by the same road a fortnight before me, could not find any then in flower. This last spring was very late in Italy, heavy snow fell low down the sides of Etna late in March. As regards the soil in which they grow, I invariably found them growing on as hard a bed as possible, never on a soft, loose soil, but as invariably covered with a loose, open, friable soil, often composed of decayed leaves mixed in the soil, and sometimes of soil alone, as loose and open as the mould of an ant's hill. Of one fact I am certain—of the three or four varieties which I found all were more or less deeply covered with loose, open soil; and the stalks of the leaves and stems of the flowers appeared so much to enjoy, and to derive so much benefit from their contact with the humid soil, that I am an advocate for providing all varieties, whether in pots, pits, or open beds, with their natural requirement.

I am quite sure that Mr. Abbey does not mean to be satirical in saying that "imitating nature sounds well. It is little carried out in practice." That is the very point to which I wished to draw the attention of your readers—viz., that if we diverge from the path of nature by endeavouring to grow to perfection certain plants without providing certain accessories which we find them enjoying in their native localities, we are retarding rather than promoting the enjoyment of Nature's best gifts, in fact, I may say we are actually placing unnecessary difficulties in our own way; for if Mr. Abbey could see the thick succulent stems of the leaves and flowers when bared from the soil, he would not hesitate for a moment in deciding that a covering of loose soil or vegetable compost is not only advantageous, but actually requisite, for the well-being of all members of the Cyclamen family.

I have long been of opinion that the principal difficulties which we have to encounter in the cultivation of plants is our ignorance of their actual natural condition and requirements, and a reference to some of your older volumes will show that I have endeavoured to point out this requirement in some of our British plants, now, alas! becoming so rare as to be deemed almost extinct. As a case in point I would mention a circumstance connected with a plant not unlike the Cyclamen in leaf. Some years ago I sent you a specimen of *Asarum virginicum*, of which I had managed to raise a good length for an edging plant, on account of its rich glossy leaves. Your excellent coadjutor Mr. Beaton wrote immediately—"I have not seen that plant for twenty years, pray tell me how you managed to grow it so well;" and another of your correspondents asked me to exchange with him a plant of it, for which he sent me another variety of *Asarum*. When it arrived it appeared to be different from my own, it had a thin, pale green leaf, different from the thick, dark, shining, green foliage of my own plants; but after it

had lived a short time in the same position as my own it became one of the same variety, and could not be distinguished from them in leaf or any other particular. To Mr. Beaton I was able to reply that I had succeeded simply by noticing the plant's natural requirements, which were that it preferred shade to sunshine, and would only grow to perfection where it had plenty of shade from the sun, when it rewarded me by flowering and fruiting abundantly, besides making a most beautiful edging in a position where few other plants would grow at all. Instead of longer availing myself of my *nom de plume* I venture to subscribe my name.—W. WANKLYN.

VINE CULTURE.

SINCE your correspondent Mr. Wills invites discussion through your pages on the above subject, and as we do not happen to think alike on some points, I venture to solicit a portion of your space for the following remarks. Not having in my possession at present those Numbers which I infer contain the first part of Mr. Wills's article on the cultivation of the Vine, my remarks refer only to what he has stated in No. 242, page 398.

Vine culture is a subject that has been so often and so thoroughly sifted of late years, that it would be difficult indeed to broach any new or profitable idea upon it—a fact which your correspondent seems to have been unable to overcome; nor is it with any pretensions to being able to do so myself that I intrude upon your pages, but simply with a desire to modify to some extent the impression which I think Mr. Wills's remarks are likely to make. With regard to what he says about pruning, covering the borders, and such like, I have nothing to say. His remarks upon these matters are unobjectionable; only I think that he entertains unnecessary fears about using the seissors. In inexperienced hands they are, perhaps, not to be recommended, but we know that they have been, and I have seen them, used with perfect safety and success by those who have claims to be considered authorities on the subject of Grape-growing; but this is a point of comparatively little importance. Concerning the necessity of painting Vines, however, as a preventive of red spider, I do not entirely concur with Mr. Wills. I know by experience that in some places, and upon some soils, red spider is one of the greatest scourges that the Grape-grower has to contend with, and he who finds it necessary only to scrape off a little of the loose bark in order to rid himself of this pest has good reason to be thankful; but it does not follow that his experience applies in every case. I certainly never heard of cowdung being recommended for the above purpose, nor am I aware of its possessing any particular virtue as an antidote in this respect. I have seen soot and sulphur, and also clay employed in the form of paint, and I used to think the necessity of applying these, or anything else that was likely to arrest the ravages of the destroyer, pretty evident; latterly, however, I have preferred using soft soap and water, scrubbing the rods well with a hard spoke-brush. I think this is the cleanest, cheapest, and most effectual plan I have seen tried, and if carried out before the buds begin to swell there is no danger of injuring them.

Your correspondent's speaking of lowering the points of the Vines before starting, in order to induce these to break regularly, suggests something to my mind which appears to me to account as well as anything else for the irregular breaking of Vines in many cases. I am aware that the rush of sap to the top of the shoot is generally considered to be the cause of this, and I am not prepared to deny that to some extent it may be so; but I am convinced that breaking irregularly is more owing to the different parts of the Vine being exposed to different temperatures, and in this opinion I am sure that the experience of others will bear me out. I have invariably noticed that the best bunches of Grapes and the strongest shoots are always at the bottom of the house, where the Vines are in proximity to the pipes, or at the top, to which the heat ascends and there remains, while the weak shoots and small bunches are in the middle. This I have always noticed, more particularly in early vineries, where, from necessity, little air could be admitted, and where the temperature was almost entirely dependant on fire heat. In late vineries irregular breaking is less common, simply because less fire heat being required, and more air being admitted, the temperature of the house is more equal. The inclination of heated air to ascend straight upwards is well known and understood. In a vinery where the pipes run along the

front of the house, the cold air coming in contact with them, and becoming heated, rises straight up to the glass roof, which it follows until it reaches the top of the house, and there it remains, unless the ventilation is sufficient at the time to let it escape, otherwise the heat can only do so by radiation; but the ascending current from the pipes supplies more than what is lost in this respect. The fumigating-pan affords a familiar and practical illustration of what I mean. Under these circumstances a few feet of the Vine rods directly above the pipes, and that portion of them at the top of the house, are subjected to a higher temperature than the middle part; hence the result. A far preferable plan to lowering the points of the rods at the back of the house is to lay these horizontally along the front; but were it not inconvenient for other reasons, it would be a better plan to distribute the heating apparatus more equally over the floor of the house.

In conclusion, allow me to notice one or two other points in Mr. Wills's article. On the subject of temperature, I think he advises undue caution. When starting Vines the temperature has often to be regulated by circumstances, and must be left a good deal to the judgment of the gardener. Much will depend upon the backward or forward state of the Vines, and upon the state of the weather out of doors at the time. When it is necessary to use some amount of fire heat to raise the temperature to the desired point, then a low degree of heat is advisable; but if the weather is mild at the time, and has been so for some time previously, then a temperature of from 50° to 55° is quite safe to start with. I think it an unnecessary degree of caution to advise such a long-continued low temperature as that recommended by Mr. Wills. When once the bunches fairly show themselves, I consider a temperature of 50° too low. A rise from about 55° to 60° at night, according to the weather, and a proportionate rise in the daytime, are necessary, and materially assist the proper development of the bunches.—T. S. W.

ROSES.

I HAVE read what "COUNTRY CURATE" has said, at page 520, with regard to Roses on their own roots succeeding better than on alien stocks. I cannot definitively speak, having had so few Roses on their own roots as compared with those on the Manetti and briar stocks. Some that did not do well on either of the above stocks succeeded well on their own roots, and *vice versa*. When Roses are raised on their own roots they require to be taken great care of for some time. So far as my experience goes, they do not generally bloom so early, abundantly, quickly, or late, as Roses on the Manetti, in my soil. The same remarks also apply to Roses on the briar. However, much depends on the sorts, and also on the soil. There is nothing that I have seen that will touch the Manetti Roses in poor, dry, and shallow land, highly manured, and kept well watered.

I do not agree with the saying of the late Mr. Beaton that Manetti is only of use to strike Roses on their own roots; but, I do say, that it is the best and surest way to raise Roses on their own roots. As I am about to leave Rushton in April, to reside at Child Okeford in this county, I removed several hundreds of my Manetti Roses to a spare garden here, where they will remain till I am able to remove them to my new residence, rented of Lord Rivers, one of my oldest friends. I found that some of them, although planted eleven years, were still only on their Manetti roots, but the most of them were double-rooted. From such as had been budded too high I cut off the Manetti roots, otherwise I merely shortened the Manetti and other roots. Some sorts, in the same family, will root much more freely than others. The two great rooting times are in the spring, and again in September, after rain. If "COUNTRY CURATE" wishes to get Roses on their own roots from the Manetti, he must plant them 2 or 3 inches over the collar of the bud, and keep them mulched and watered in hot weather. He must also protect the roots during the first winter. There is no doubt that originally Manetti Roses were budded too high, and the radius of the roots was necessarily planted too deep. All trees struggle to make surface roots, and I do not think they will flourish long without them. If my readers have a Manetti Rose budded 9 inches high, the best chance of success will be to bury it sufficiently deep to strike on its own roots. There is no occasion to cut the bark. The Rose will strike in suitable weather (hot, dripping weather) without it. Still it will do no harm to cut a nick over an eye,

and close the earth over it. Probably this may be of great assistance to some sorts that do not root freely. I have found that by earthing up spriggy plants every branch rooted.

For striking cuttings September is the best time, because the earth is hot, and the day and night atmosphere is colder, and the sap is not so soon exhausted as in summer. The best place to strike Roses from cuttings is under a wall facing the north. There they have sufficient heat without being exhausted by the direct rays of the sun. When "COUNTRY CURATE" pots his cuttings he should place them in a shady spot. His failures arose from one of two causes, either from carelessness, or the drying up of the new tender rootlets.

With regard to Roses on the Manetti, whether they are double-rooted or not, I can say that I never saw anything equal to them as a class. They began blooming out of doors in 1864 on the 7th of May, and in 1865 on the 14th of May, and never stopped but one week till they gave up in the winter. As soon as the main wood had bloomed its amazing crop, the new shoots from the base began in a week to bloom; and, by the time these blooms were over, the next series began again on the worked wood, and that wood never ceased flowering; to which might be added the next series of flowers from the base shoots. A briar Rose never can be more than one Rose, but a Rose on the Manetti (by striking, or being on its own roots) may become many. The most favourable place for striking Roses on the Manetti stock is the point of union; but, if the stems are earthed up high enough, and kept sufficiently moist, some sorts more than others, they will strike abundantly, and give compound interest on their own roots besides the Manetti plant. I have reserved about 1200 plants to go with me. They are now all together, and will be a fine sight. I do not think of moving them till next fall.—W. F. RADCLIFFE, *Tarrant Rushton.*

COOL ORCHID CULTURE.

I OBSERVE the following remarks by Mr. Keane respecting the cultivation of Orchids—"A high temperature was supposed necessary for their growth; to prove how erroneous that idea is we would suggest a friendly visit to some of our most successful neighbours." Would your correspondent be kind enough to name a few places where Orchids are cultivated successfully under cool treatment? as I happen to be among the number of those who think a high temperature absolutely essential to the successful management of Orchidaceous plants. I know there are a few exceptions, as some of the *Odontoglossums*, *Lycastes*, and a very few others, that thrive better in an intermediate house, but not a greenhouse. I have visited several places where it has been attempted to grow *Saccolabiums*, *Aërides*, *Vandas*, &c., in a cool house, and in every case it has proved a failure. A few months ago I expected to hear of *Vanda tricolor* and *Cattleya labiata* being strongly recommended as bedding-out plants, so enthusiastic were the advocates of the cool system.—B. F., *Manchester.*

[I beg to refer "B. F." to Messrs. Lee, Hammersmith, Mr. Veitch, Chelsea, Messrs. Rollisson, Tooting, Mr. Rucker, Wandsworth, and, in short, to every grower of Orchids to prove, by ocular demonstration, that some kinds delight in a low temperature. For example, the treatment required for *Oncidium carthagenense* would kill *O. bifolium*; *Cattleya Forbesii* will thrive where *Cattleya Skinneri* will die; and in like manner *Dendrobium pulchellum* demands an amount of heat and moisture which are unnecessary and indeed injurious to *D. aureum*. To study the climate of the countries and localities from which the species come is the only sure guide. It is no wonder that plants from the same country require very different treatment, as Orchids grow in the tropics at all elevations between the level of the sea and 14,000 feet of altitude, and, therefore, they will require a great diversity of climate. When the many rare and beautiful species were sent home from the high lands of Mexico and Guatemala, Mr. Hartwig informed us, in his letters, that the thermometer was sometimes near the freezing point where many of them grew, and this was confirmed by the quantity of small mosses which were found growing upon some of the branches to which the plants had attached themselves. Many of them were removed into a house which was kept cooler than the Orchidaceous stove, and they succeeded much better than others of the same kinds which were allowed to remain in a high temperature, where they were over-excited, and grew sickly and languid, forming small pseudo-bulbs every year, until they finally perished. Many

growers have experienced the same results. The house in the Horticultural Society's Garden at Chiswick, where they were grown, had no artificial heat during the greater part of the summer, and in winter it was kept at about 55°. The air, however, was kept more moist than in a common greenhouse.—W. KEANE.]

VISITS TO GARDENS PUBLIC AND PRIVATE.

MESSRS. LOW & SON'S, CLAPTON.

AMONGST the old-established nurseries in and about London, none is better known or more deservedly celebrated than that which for so many years has been known as that of Hugh Low & Son, Clapton; and although the head of the firm not long ago died full of years and honours, yet it is still carried on with the same vigour and energy which have characterised it for so long a period. It was on a miserably wretched day in the month of October, when the rain came down in "bucketsful," that I found myself at the nursery, and was fortunate to have an hour or two's tour of the houses accompanied by Mr. Stuart Low, from whom I learned much that was new to me, and saw much that was novel also.

In some very important respects the Clapton Nursery has *spécialités* of its own. One will not find in it the magnificent specimens of stove and greenhouse plants, and Orchids, that are to be seen at Mr. Veitch's or Mr. Williams's, nor the curious and multitudinous novelties that Mr. Bull grows; but you will see houses full of Orchids in every stage, from the plants just imported to those which are growing finely and flowering; whole ranges full of Heaths, especially those for winter and spring decoration; thousands and tens of thousands of young Conifers grown from seed; house after house filled with Camellias of all sizes and kinds; not a great deal of order and neatness, but an air of business that showed that matters were thriving; and that as this house has contributed in no small degree to the taste for horticulture by the extensive importations it has made from all quarters of the globe, so it is in its turn deriving no small degree of benefit from that increased taste.

And now as to the Orchids. It is well known how many beautiful plants of this remarkable tribe have been added to our collections by the enterprise of this firm; and it shows the manner in which it is ready to seize upon any fair opening, that immediately on the cool treatment of Orchids coming into vogue, a collector was dispatched to South America to obtain from the high altitudes of New Grenada and Guatemala the *Odontoglossums* and other Orchids with which those districts abound; and it may give an idea of the extent of the importations to say that in three months were received about 150 cases of Orchids. Were these all to arrive in good condition they would indeed afford a rich harvest; but they have to go through an ordeal by which hundreds of them perish. They are collected on the heights of New Grenada at an altitude of 24,000 feet, where the average temperature is about 42°; but before they reach the steamer they have to come down eight hundred miles to the coast by the Maddalena River, one of the hottest steaming countries in the world. The consequence of this is that they actually melt, all the tissue turning into water, so that when the skin of the pseudo-bulbs is not burst you can squirt the water out of them as out of a syringe; but in some species when even this is the case, and the rhizome is sound, the plant will recover and make fresh bulbs, as, in fact, I saw many of them doing. Amongst the *Odontoglossums* were *gloriosum*, *Bluntii*, *radiatum*, and many others, which are most probably entirely new, and thus promise the incentive of novelty and expectancy to those who purchase; for hitherto that numerous and increasing class of horticulturists to whom Orchids are precious—some thinking they can detect something strange and novel, others pretty sure that they have found a gem, and many contented with anything they can pick up. Of *Cattleyas* from New Grenada there was also a great variety, in every degree of colouring, from that of Mossie to pure white. Then there were *Dendrobiums* of all kinds—*albo-sanguineum*, very rare, from Moulmein, growing well. Look, too, at this lot of *Lælia anceps*, imported only in June, and now flowering; and *Lælia majalis*, assumed by most to be a difficult plant to grow, but here doing well, and that in a low temperature.

On the subject of low temperatures for Orchids I had a long and interesting chat with Mr. Low, he being decidedly of opinion that a great deal more has been said of it than it warrants; and that many persons, misled by what has been written on the subject, will burn their fingers, or rather, should we not

say, get them frost-bitten? Orchids, it is true, will do at a low temperature; but to suppose that they can be grown as ordinary greenhouse plants can be, is only misleading. They require exclusion from air, and not so dry a temperature as a greenhouse must have. In a house with a northern aspect, and carefully regulated as to temperature and ventilation, grown by themselves, they will do well; and even, as Mr. Low has proved, many sorts that have languished under other treatment have thriven under this. Various points in the cultivation of Orchids, as in other plants, are only arrived at by constant attention and knowledge of the different kinds, each, it may be, requiring its own special method. Thus with *Calanthe* and *Limatodes*, it has been a customary plan, when the leaves drop, to lay them on one side; but, this according to Mr. Low's ideas, is all wrong. He keeps them growing, as it is then that the flower-buds are produced. What a charm, too, in these fine winter-blooming Orchids of which, as they bloom, the spike lengthens until it reaches 3 or 4 feet in length! How deliciously sweet-scented, too, are some of these flowers! *Dendrobium bedrosnum* (well deserving its name), for example, one bloom of which would scent a whole house.

But we must pass away from the Orchids and look at these ranges of pits. Hundreds and tens of hundreds of young plants of *Erica*; pots full of young Conifers of the rarest kinds in myriads; and in the houses range after range filled with the winter and spring-blooming Heaths in flower. A curious fact Mr. Low mentioned with regard to these—viz., that the hot September had so hurried on the blooming season that *hiemalis* was nearly over; and *vernalis*, which should not have been in bloom till February, was now all coming into bloom. These plants are dispersed all over the country. They are killed by tens of thousands every year in London drawing-rooms, are hawked about by itinerant vendors in the suburbs, and hence there is a never-failing demand for them, and a never-failing supply.

Camellias are here by the thousand, Mr. Low importing every year a very large number from Ghent, that city of Camellias, and also growing a large quantity of his own working. With regard to these latter, he had been adopting a plan of his own. Instead of allowing the top bud to grow out and make the young wood for the new year, he cuts off that bud, and by that means induces the third and fourth eyes to push their buds forth, and thus to make a more bushy and stubby plant. This system seemed to be answering well, as the plants were looking well and vigorous under the treatment.

The splendid tree Ferns belonging to this establishment were so much admired at the Guildhall that it would be needless to say anything about them, save that Mr. Low was adopting a curious plan with some of the stems which had come home dead—namely, hollowing out the top, and placing a young plant in the crown of the stem.

We can see here what changes railways, especially in their improved system of communication, are making in everything. Mr. Low was sending a large quantity of greenhouse plants away to the north of Scotland. Instead of mats, baskets, &c., and all the expense and trouble connected with it, they were being conveyed in waggons to the Great Northern Railway, where a truck or more is placed at his disposal; the plants are packed in this, and they reach Aberdeenshire without even a change of carriage. Where the consigne lives near the station this can be easily managed, and the plants sustain no damage, while the saving of expense is very great. Thus in one way or another I was picking up during these two hours much interesting information, learning something fresh, and also to admire the zeal and energy displayed by our great plant-merchants. The depth of winter is not usually a good time for visiting gardens, but I have found out that at all times something is to be learned.—D., *Deal*.

GOLDEN VARIEGATED GERANIUMS.

I FIND that these varieties have disappointed expectation in several places, owing, I doubt not, to the unusually dry hot summer, along with sudden transitions of temperature, nights being chilling, and days scorching. However, there is one peculiarity in these Geraniums which has arrested my attention—namely, a deficiency of fibrous roots compared with other bedding Geraniums. This deficiency, I think, in a great measure prevents them making equal growth with others of much stronger constitution, and of which the roots are in proportion to the growth of the branches, for it is evident that

unless there be reciprocity between root and branch little progress will be made. Here the Golden-variegated Geraniums have done very well, although the season has been unusually warm and dry; they have afforded a good supply of cuttings, and will give many more in spring if wanted. I would advise the inexperienced to have their plants well established in pots before planting, as this is very conducive to success in the growth of this class of Geraniums; also, not to plant out too soon. If good plants are in store they will at once give effect, while small plants turned out too early, will throughout the season disappoint the expectations which have been formed of them.

I offer these remarks to the inexperienced, not to those who can judge for themselves. Many bedding plants may be turned out from store pots and boxes, but the Golden-variegated Geraniums will not succeed under that mode of treatment.—JAMES REID.

ROYAL HORTICULTURAL SOCIETY.

MONEY PRIZES SUBSTITUTED FOR CERTIFICATES AT SATURDAY SHOWS.

At the Meeting on Saturday last Mr. George Ward, gardener to T. N. Miller, Esq., of Bishop Stortford, exhibited two very handsome Smooth-leaved *Cayenne* Pines, which weighed 7½ lbs. and 7¼ lbs. respectively. They were awarded a first prize of £1. We take this opportunity to state that the system of awarding certificates, as was done last year, has been abandoned, and money prizes instituted instead for meritorious subjects exhibited at these Saturday meetings. These meetings will be continued throughout the year, and schedules containing the details of subjects invited may be obtained on application to the Assistant Secretary at South Kensington.

WEATHER WISDOM.

(Continued from page 526.)

MY former remarks on this subject were written with the view of directing the attention of your readers to a more careful and regular study of the barometer, in order to enable them, by noting down at fixed periods its various changes, to anticipate to a certain extent probable weather. Many persons are fully alive to the various causes which produce the rising and falling of the mercurial column, and they, I am sure, do place reliance upon the weather-glass. That dependence is very often severely tried by the apparent waywardness of the mercury. The column will remain high when the weather seems to say, "You ought to be low;" and the barometer will show a great diminution of atmospheric pressure when the sky is calm and serene. But persons more advanced in the pursuit of the knowledge of the science of weather go deeper into the subject. They know, and experience teaches them, that though bad weather was not actually present at the particular spot where the barometer was observed to be low, yet a gale has been raging not many miles distant. The barometer, be it remarked, is a very delicate instrument, and is affected not only by the atmosphere immediately above the locality of observation, but by the great atmospheric waves which are sweeping at a distance over the surface of the surrounding country.

To those of your readers who are but imperfectly acquainted with the real cause of the rise and fall of the mercurial column I would now particularly address the following remarks:—Whenever there is an invisible agent at work persons are apt to be sceptical. Every one knows how the mechanism of a clock or the hands of a watch are set in motion; there is the weight, the spring, or it may be other causes. It is reasonable to suppose that some result will follow the adaptation of the different parts. No one wonders at the movement of the hands; but look at the barometer! It is not wound up, and there is nothing visible to cause any motion. Watch the glass carefully during a gale or heavy fall of rain; the mercury falls fast, almost whilst the eye is upon it; and because there is apparently nothing to account for the change they have seen, persons go away disappointed from such a contemplation, and as they do not recognise the hidden power which acts on the column, the instrument is despised. Men will, however, put faith in the correctness of a watch or clock because they know how it is set in motion; but as to the barometer, they say, "It is of no use; its movements are mysterious, and therefore it must be disre-

garded as of no value." Now, the agent which balances and supports the mercurial column is the atmosphere. The earth is surrounded by this atmosphere, weather is constantly changing, and with such changes atmospheric pressures increase and diminish daily and hourly. That pressures do vary, and that the barometer is affected by such variations, can be demonstrated in the following way:—Let any one take a portable barometer to the summit of a hill, having, previously to starting upwards, noted down the height at which the column stands. Suppose the ascent to be 500 feet, it will be found that on arriving at the summit the mercury has fallen considerably. Why is this? Why should there be any change? The reason is as follows: In ascending the height a diminution in the density of the atmosphere is experienced. The atmosphere which at a lower height supported the column of mercury will not support it at the top of the hill. The mercury falls. But let the glass be brought down directly to the original starting point, and the barometer will read once more at the same height as it did at first. To those who are able to perform another experiment, the atmospheric pressure on the column of mercury is more clearly and quickly illustrated. Place a skeleton syphon barometer (simply the glass tube filled with mercury) under the receiver of an air-pump; directly the pump is set in motion the column will fall, and will continue so to do in proportion to the rarefaction of the air. Now turn the stop-cock; admit fresh air in the place of that which has been pumped out; what is the result? The mercury returns to its original height.

I am perfectly persuaded of this, that if any one can firmly fix upon his mind that atmospheric pressure is the cause which regulates the oscillations of the barometer, and that during the variations of the weather atmospheric pressures do vary, there would then be more attention paid to the instrument, and persons would try to fathom its movements and to investigate its constant and sometimes apparently mysterious changes. In all scientific researches, however, it must be remembered that man is the being created. Let no one strive to dive into hidden mysteries simply and solely for the purpose of curiosity and self-glorification, or for the purpose of finding out what has been wisely hid from man. On the contrary, let every one so use his knowledge as to enlarge and develop those gifts and resources which have been placed at his command by an allwise and bounteous Creator for his own enlightenment and that of his fellow-creatures.—X., *Surrey*.

THE FRUIT-BEARING AUCUBA JAPONICA AS A DINNER-TABLE PLANT.

ALLOW me to add this plant to the tastefully selected list made by Mr. Robson, for dinner-table decoration. In passing through the Messrs. Osborns' nursery the other day, I noticed some beautiful standard plants of the Aucuba loaded with its bright red fruit, the berries being about the size of medium-sized acorns, in bunches of from eight to sixteen. The plants had nice symmetrical heads about 16 inches in diameter, and clean stems from 18 to 24 inches in length, and half an inch in diameter. Once seen, the fruiting Aucuba cannot fail to be a favourite, and it is a valuable acquisition for decorative purposes. I noticed, also, a number of standard Laurustinus of the same dimensions as the Aucubas described, covered with bloom and beautifully feathered down the stems, and which cannot fail to be gems on the dinner-table. Now, if circular pans made of zinc or of any other material were constructed to fit over the mouths of the pots of such plants as described, and these pans were planted with some of the Lycopods—such as apodium, densus, or umbrosum, edged with caesium or other trailing Mosses to form a drapery over the edge, with a few Crocuses or Snowdrops peeping through the green moss, the whole would make a lovely ornament both above and below the "line of vision"—quite a natural épergne. The pans should be made in halves, with a circular groove in the centre of each for the stem of the plant, and have two clasps to secure the entire pan.—P. M., *Putney Heath*.

METEOROLOGY OF FRUIT-TREE HOUSES.

I HOPE Mr. Rivers will excuse the festivities of this season having prevented me from replying sooner to his letter; and I may also add that now, when ever one is trying to feel so

happy and saying so many kind things to all the friends he meets, I have no desire in this letter to appear personal. I have often withstood the temptation to put in a smart thing, and also crossed out what I was afraid might be taken for an asperity; but having strong opinions as to the advantages to be gained by sun heat, gathered principally from my own experiments, I thought I would try how they stood the test of public opinion in your paper. Mr. Rivers answered me, and I have been in this manner obliged to make the best defence I could.

A discussion on the merits of houses can hardly be kept from wandering into questions of cultivation. Thus, Mr. Rivers seems to think forced Peach trees should be treated in a different way from those grown during the summer in an orchard-house. I think it is time we had another name for this anti-season cultivation; for with all the modern appliances it is no longer strictly correct to speak of it as forcing a tree, thereby implying that the tree is unfitted to carry a similar crop in the following year. I have often heard gardeners say, "There is no use in this." "I would not go to the expense of that," and "You can grow perfectly good crops without something else,"—how much they can dispense with, depending on the natural advantages of their situation. The first step in aiding nature is the beginning of forcing. When I first began growing fruit trees I was not aware of the important difference between orchard-houses, and thought an orchard-house was an orchard-house; but now I find it is, and it is not. Mr. Rivers tells me mine should have answered, for they never fail with him. I reply I am further north; but he tells me this is no valid reason, as his climatic world reaches to Stornoway. He has not yet told me what sort of a house this is. If it is a lean-to it is not surprising, for a contemporary tells us, "At Culloiden House, near Inverness, the middle-season Peaches, such as the Noblesse, ripen perfectly almost every year in the open air." Not a word about protection, and yet some must be used; but sheeting-up a wall at night is not counted. That a low night temperature helps to ripen the fruit and wood, and consequently the buds for the following year, I think I have tried what I could to prove. It is the low night temperatures in spring and summer I want information upon, and if there is a successful span-roofed orchard-house north of the midland counties in which there is only a single row of four-inch pipes round the house, and where ventilation is given as Mr. Rivers directs. In the "Orchard-House," Mr. Rivers says he cannot ripen November Peaches, but he can October. Should I, then, be told in a polite way that I mismanage mine if, by reason of my climate being worse than his, I am obliged to resort to the treatment he advises for these late Peaches? At page 93, under the head of "Clingstones," I find, "We shall by this mode of culture imitate the warm autumnal nights of the southern United States, and keep the fruit in a growing state till the ripening period arrives. In a common orchard-house without fire heat the cool nights in September seem to put the trees at rest, and the very late Peaches, as I have experienced, do not ripen well." After again reading this, the only conclusion I can come to is what I said in my second letter, which provoked Mr. Rivers—that in the case of trees treated as mine were, that is, exposed to a night temperature in July of 55°, and in August of 45°, they will go to rest, notwithstanding a high day temperature.

Vines require a higher temperature than Peach trees to enable them to perfect their fruit, and I think my letter in the Journal of December 12th will not bear the construction Mr. Rivers puts upon it. I certainly never intended to convey that it was my opinion that Black Hamburgh Grapes would ripen better on an open wall than under glass, much less was I speaking of their relative chances against spring frosts. I will repeat what I said: "Can any one tell me what advantage a south wall has over a narrow span-roofed house, from having taken its maxima and minima for a summer in a meteorologically favoured place? I would rather have my Grapes or Peaches, if I wished them to come in soon (early), resting against such a wall, and enjoying its radiation all night long, than be starved in an orchard-house with a temperature of from 40° to 45°." Upon this Mr. Rivers proceeds to argue, but I am not able to say if the figures he gives are the temperatures of a south wall or of the open air; however, as he takes up the subject seriously I am not unwilling to consider it also. He gives from 100° to 120° as the maximum of a south wall in May, and we are then to suppose that the air goes down to 26°. How near will night radiation bring the temperature of the wall to the atmospheric point? I cannot answer the question.

I will now compare a narrow span-roof with this. The average maximum for Chiswick last May was 69°; to this I will add 15, making 84. The minimum will be 5° above the atmosphere, or 31°. I cannot give the temperatures of a south wall for the months of June and July, and so will pass on to those of August and September, which are given as the same as May—from 100 to 120°. The average maxima for these months at Chiswick were 74° and 78°; if I add 15° it will make 89 and 93°, which should represent the day temperatures of these months in a small span-roofed house. I will now try to compare the nights. Mr. Rivers says, "But radiation during the long nights" (not during these months) "tells forcibly, so that in the morning the 'tender mercies' of the wall have not prevented the thermometer from going down to 45 or 40." Does this mean that radiation has carried off all this extra heat? At Chiswick the average minima for last August and September were 46° and 45° respectively; the night temperature in a narrow span-roof I do not know. A thermometer with a black bulb exposed to the sun rises 50° above the atmosphere in the shade, and often goes down to 15 below it in the night. I should very much like to know if it was owing to this latter cause—extra night radiation, that prevented the experiment mentioned in the "Theory of Horticulture," blackening garden walls, from being of any advantage. But this has no reference to our present subject—we are not discussing the relative radiating powers of colours; and a black bulb to a thermometer,

having no substance to retain heat, is soon cooled. How is it with a thick wall that has been heated to 120°? I notice the explanation that the trees in the hedge house are retarded by the cool night air rushing in, which in this case counteracts the advantage of radiation from the soil. Will not a narrow span-roofed house, with the ventilators open at each side, be retarded in the same way?

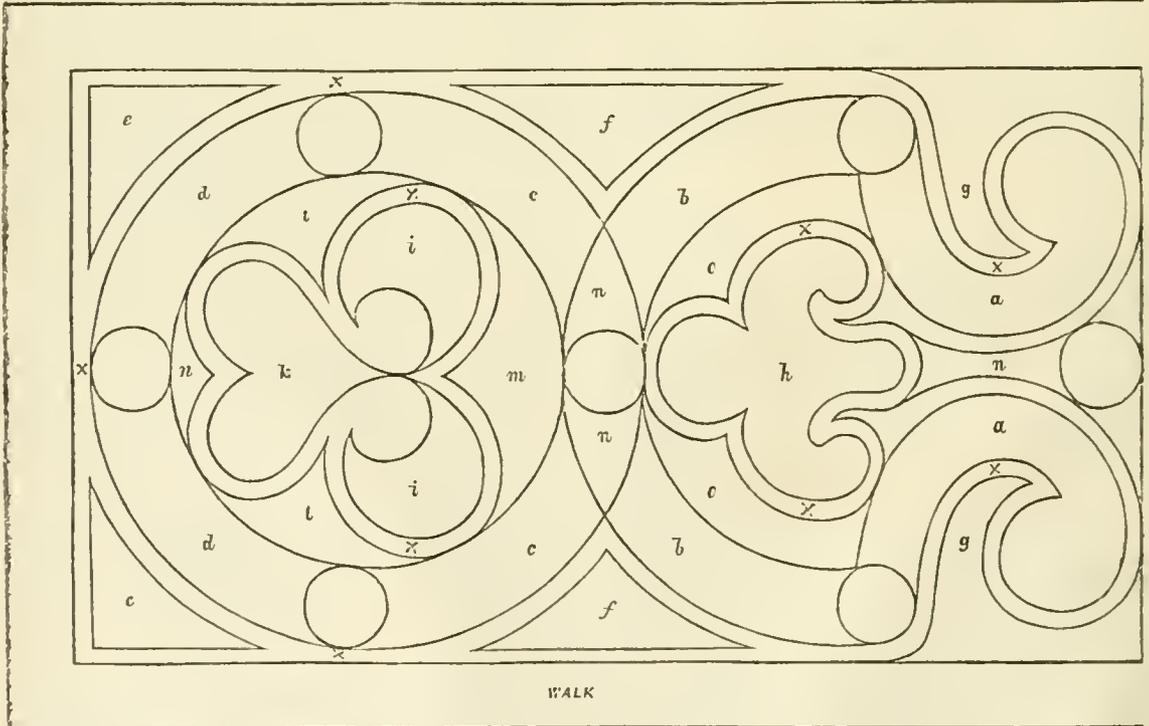
Mr. Rivers is surprised that I should have given the heat of his large house as 96°, for at 5 feet from the ground it was only 88°; but this, he said, "was under a dense shade;" in his letter of October the 10th he said it usually ruled 10° to 15° above the open air, which he gave as 80°; again, in this last letter he says a span-roofed house 18 feet wide, the sides of which are formed of hedges 2½ feet high, at 5 feet from the ground averages from 15° to 20° above the open air. I did not intend to misquote.

I hope Mr. Rivers will be able to obtain some information upon the climate of New Jersey. I do not know how he acquired his impression that Mentone has a moist climate. Dr. Bennet says that, according to his experience, the average number of days or nights during which it rained little or much at Mentone was 80, at Torquay 155, Greenwich 155. I wish Dr. Bennet could be induced to give us a little more information on these subjects, including the heat of the soil as the Vines start.—G. H.

A WINTER AND SPRING FLOWER GARDEN.

A WELL-KEPT garden is the best ornament the outside of a house can have; it promotes health, and in it one can contemplate the goodness of the Maker of all things in administering to the various requirements of man. There are no associations stronger than those connected with a garden. Let a

man be a thousand miles from home, still his mind will at times revert to and haunt, as it were, his old favourite spots. To strengthen, then, those fond links of home, let us try and make home more interesting, cheerful, and gay, especially in the dreary months of winter and spring.



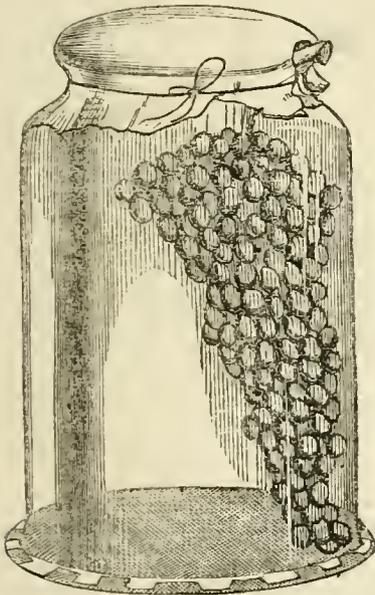
To lay down a definite rule respecting the extent and arrangement of a flower garden would be a most difficult matter, as no two places are alike. It is necessary, therefore, to exercise great judgment in the formation of a garden, and the designer should not be wholly guided by his own fancy; the size of the mansion should be taken into consideration, for a small house and a large garden never correspond well, and everything about a place should be as nearly as possible in proportion. Another matter to be taken into consideration is the means at

command to supply plants enough to furnish the garden, because it is much better to have a small garden well kept than a large one ill-kept. In a garden, as in any other place, there should be "a place for everything, and everything in its place," and in endeavouring to carry out fully this old saying, I have designed a plan well adapted for a small place, and especially for the front of a suburban villa, where there would be room enough for the design and a good wide border at each side for herbaceous plants, or, otherwise, a grass verge. By

looking carefully over the plan, it will be seen that all within the outside line of Box can be made one mass of beds, at the discretion of the owner, and each bed complete in itself. They can be filled with different plants and bulbs all the year, so that the plants in one bed will not interfere with the arrangement of the bulbs in the other. *l l, m, n n n n,* and *g g,* on the plan, also the narrow alleys all round, marked *x x,* are intended for colouring-materials; they are equally eligible for bulbs, Pansies, or the like. In order to give an idea of how it might look, I will suppose it to be planted with the following plants, which are all easy to procure:—*a a,* white Arabis, edged with blue; *b b,* Alyssum saxatile, edged with Stachys lanata; *d c, d c,* Arabis, edged with Cerastium tomentosum; *e c,* Skim-mia japonica; *f f,* Vinca elegantissima; *l l* and *m,* blue Pansy; *h,* Arabis lucida variegata; *g g,* double Daisy; *o o,* common gravel; in the alleys round the two centre figures broken bricks; in the alley round the outside I would put burnt flint (pure white), and in the circles coals. There are many who will not coincide with me on this subject; they are prejudiced against the use of such materials, because, perhaps, they have seen it carried to excess in some places, but anything in excess is distasteful to the eye. I would like to see the objections more fully explained in the columns of THE JOURNAL OF HORTICULTURE, and I should be glad if those who agree with me as to the use of coloured materials, would suggest any improvement that could be made, so that we might be able to learn various opinions on the subject.—M. O'DONNELL.

PRESERVING OUT-OF-DOORS GRAPES.

I HAVE sent you a specimen of our out-of-doors Grapes, also the glass cylinder. 7½ inches high by 5 inches in diameter, in which they were grown.



I believe it is a very old plan, but out of fashion I suppose, as I have never seen any notice of it in THE JOURNAL OF HORTICULTURE. It is a capital mode of keeping out-of-doors Grapes for late use. The oiled calico protects them from rain, and the perforated zinc keeps out birds and insects, but admits sufficient air. The Grapes were thinned when about the size of Peas; the glasses were put on immediately, and, except pruning, no attention has been given since.

The glasses have been in use here for many years with oiled calico bottoms, and shaded with limewash, but the Grapes became mouldy soon after they were ripe, and if holes were left for ventilation the wasps and flies soon finished them. I adopted the zinc bottoms two years ago, and the glasses have done very well since and require no shading.—JOHN JONES, Gardener to Col. Gladdish.

[The bunch of Grapes, Royal Muscadine, were in very excellent condition (January 2), but slightly shrivelled, and not at all mouldy or deficient in flavour.—Eds.]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the weather has been particularly open and mild up to this time, all trenching, rough digging, gravelling walks, &c., ought to be pushed on as fast as possible. Where drainage is necessary, now is a good time to execute all work of that description. When we see the agricultural world so alive to its benefits, it is strange to hear gardeners, like fatalists, lamenting over their pining Peach and Nectarine trees and bad crops, and making no effort to strike at the root of the evil. The very worst soil and situation may be improved by drainage. *Asparagus*, the beds should be soiled or manured as soon as the frost makes the ground hard enough to bear wheeling. *Beans*, sow another crop of the Mazagan, and plant out any which have been hardened off after being germinated in heat. *Carrots*, sow a moderate breadth of Early Horn, also Short Top Radish; there is no better plan than sowing them in drills alternately, covering in with sandy matter, and protecting with any available material. An excellent method of fastening down such material is to place long willow rods at convenient distances, pegging them down at each end with a strongish hook. *Cucumbers*, the plants in houses must be strictly attended to, to keep them in health; refrain from removing or injuring any of the leaves, if possible; guard against over watering, which is particularly injurious in dull weather. Prepare dung for the main early beds, and make a small seed-bed for raising the plants. *Cauliflowers*, those under hand-lights require constant attention, keep the surface stirred, dust with lime and charcoal dust; an excellent plan to catch slugs among these is to split large Carrots and lay about the plants, by picking them on mild mornings an immense number may be taken. See that the hardy varieties of *Lettuce* and *Endive* on banks or borders are properly protected, and look over the plants in favourable weather, removing decayed matter, and covering up for blanching when dry. *Peas*, make a second sowing on a warm border. Waite's Daniel O'Rourke and Early Warwick answer well for this sowing. Be careful to keep a good number of figure-4 traps constantly set, there are none better for keeping down those destructive pests, the mice. Peas coming up must have the surface soil constantly stirred, and opportunities should be watched for the destruction of slugs by dusting with quicklime. Endeavour to keep well up with all work in this department, the time is fast approaching when we shall find the advantage of having done so.

FRUIT GARDEN.

Proceed with planting, and the necessary arrangements for planting where it is not already brought to a conclusion. Prune and nail wall trees; dress those fruit trees that are infested with moss, lichen, or scale, in suitable weather; prune, train, and tie in neatly, all espalier trees, and carry away all refuse that will not readily decompose to the char heap, there to be converted into valuable manure. Fork among all fruit plantations, applying some manure, if possible, about the roots of the trees. Peach, Nectarine, and Apricot trees should be protected in due time with spruce boughs, or some other material. If frost prevails stir up the soil well with the hoe or fork close under the walls and fences, such places afford a ready refuge for slugs and other vermin. It is not a bad plan to shake a little quicklime over the earth thus disturbed.

FLOWER GARDEN.

During fine weather, like the present, continue to dig the borders where this has not been already done; edge and clean walks, lay turf, and make edgings good where that is necessary. In favourable weather keep all hands busy out of doors, leaving in-door jobs for bad days. Plant shrubs, and regulate herbaceous plants; reduce Phloxes, &c., when they require it, and replant them after well digging the ground; take care not to plant too thickly, and leave room for planting tender plants in spring and summer. See that all half-hardy plants are secured against severe weather.

GREENHOUSE AND CONSERVATORY.

As the conservatory is the chief place of resort for the family in winter, it is requisite that the flowers, &c., be at all times kept particularly clean and dry, dryness of atmosphere through fire heat will not, however, keep the plants in that luxuriant health, which not only creates a present interest in them, but also furnishes a guarantee for success in future. Great moderation, therefore, in the use of fire heat is necessary in this department, more especially in the dead of winter. A tempe-

perature of from 40° to 45° by night, and from 50° to 55° by day is at this period amply sufficient. A temperature of 50° by day and of 45° by night is sufficient for the greenhouse at present. Keep the Pelargoniums in a quiescent state, give as little water as possible, in fact, none, unless the plants show a disposition to flag in the leaf. Abundance of air is requisite, avoiding, however, cold currents, which are very liable to spot the leaf when in a tender state, through close confinement. Keep all Cinerarias, Heliotropes, Calceolarias, and other softwooded plants, &c., in the lightest part of the house, and as near the glass as possible. Correas, Epacrisos, Heaths, &c., should be placed on a bench by themselves in the most airy part. Examine daily every flowering plant, remove every decaying flower as it appears, and see that the foliage of Camellias, Rhododendrons, Oranges, and similar plants is perfectly clean. The contrast produced by the fine, clean, large leaves with the numerous blossoms, at this season especially, gives a relish for such houses, and renders them doubly capable of yielding enjoyment.

FORCING-PIT.

This pit should have a permanent bottom heat of 80°, with atmospheric moisture. Such being the case preparations must be made for securing a due succession of early spring flowers; if not already done let a sprinkling be introduced of the most popular tribes adapted for forcing-purposes, such as Persian and common Lilies, Azaleas, both hardy and Chinese kinds, Lily of the Valley, Hyacinths, and other bulbs, *Acacia armata*, *Epacris*, and the various kinds of Pelargoniums suitable for forcing, hardy and Nepal Rhododendrons, Daphnes, Deutzias, &c. The new Hybrid Roses will do better in a more moderate temperature, with the exception of the Teas, which will endure a lively heat. As these plants in general require a moderate top heat in proportion to the bottom heat in the earlier stages of their forcing, they may be kept together at one end, and receive more air in mild periods. The other end of this pit, kept closer, will be eligible for such plants as *Thunbergias*, *Gardenias*, *Franciseas*, and numerous other plants that require more atmospheric moisture.

STOVE.

The season is not yet sufficiently advanced to allow of an increase of temperature. A steady heat ranging between 60° and 65° may be sustained, if the weather continue open. The occurrence of frost will demand a reduction of temperature. Allow the thermometer to sink at night. Artificial heat without light, as has often been explained, is injurious to vegetation. Recollect always that stove plants, as well as others, require fresh air. The stove may still be gay with the beautiful *Gesnera zebrina*, *Euphorbia*, and *Begonias*, which outvie the gayest plants of summer in brilliancy and beauty.

PITS AND FRAMES.

If the tenants of these have been housed somewhat dry, and kept so, and hardened with abundance of air, nothing is necessary but to follow up these principles, and to take care to exclude frost; if, however, severe weather should occur, and they become frozen, see that they are not uncovered directly a thaw comes. Let them remain in comparative darkness until they are quite thawed, which in ordinary cases will be about two days, merely turning up the mats or straw a little at both back and front, so as gradually to inure them to the light. Examine your stock, and such plants as you are short of should now be placed in a gentle heat for the purpose of exciting their growth for cuttings. *Anagallis*, *Verbenas*, *Petunias*, *Salvias*, &c., should now be brought forward for filling beds and borders in summer. Be sure that you have enough of these. Give abundance of air in mild weather to cold pits both night and day, and withhold water from the plants at this season. Prepare soil for potting-off stove plants. This might soon be commenced.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

VERY much the same as in previous weeks, with the exception of potting a lot of Potatoes that had pushed several inches long, and filled four and five-inch pots with roots, placing two of these pots in 12 and 13-inch pots. From these we generally gather rather earlier than from those planted in beds, with a little heat below them, and as they approach perfection they can be placed anywhere under protection, and the room they now occupy in pots can be devoted to other purposes. A quicker way still is to place a single plant in a five or six-inch pot, plunge it in a mild heat, and as the top grows earth-mp

with rotten leaf mould. The curbing of the little pot causes the tubers to form and grow sooner than when they have more room.

Rhubarb put a few more roots into the Mushroom-house, with a little bottom heat from leaves, &c., and the top temperature is from 50° to 60°, as that brings on our Mushrooms as fast as we want them for use, at present every day; but we will send in the latter more seldom, if more at a time, as it is rather out of our way to make anything too common. Give even *Rhubarb* and *Sea-kale* every day, and either will be less valued than if given, say, three times per week. The same as to *Asparagus* at this season. Send it to the house every day, and it will soon be no more thought of than it is in May. Of course when there are particular parties the matter should be different, and if the gardener knows the number of days the party is to last, he will try and send the best and the greatest variety. A great many employers are never the best served when they have visitors, because they never condescend to let their gardener know anything of their intentions, and therefore nothing is sent in but what they would have had in the usual routine. For want of the gardener knowing anything of such matters, we have known many instances where rarities and delicacies for the season were sent in every day to the usual family dinner, and then when there was a particular party there was nothing rare to send. Those employers only will be the best served who give due notice of such matters; without that notice they must be satisfied with what the day will produce. *Rhubarb* has been plentiful enough since Christmas. We feel obliged to "R. F., *Liverpool*," page 3, for what he says on the subject. We agree with him thoroughly as to what he says about a high temperature for this or any other vegetable that comes to maturity in a comparatively low temperature. We corroborate also what he advances about darkness being an advantage for the earliest crop; but after the middle of this month *Rhubarb* will come on anywhere in light, where there is the requisite heat to excite it into growth. For the earliest we find placing a box or pot over it, as well as a mild heat beneath it, useful either in the Mushroom-house or any other suitable place. We are well aware that to have it early in winter it will come better if grown rapidly in the early part of summer, and encouraged to stop growing by dryness in autumn, so as to lose its leaves and go to rest sooner, for the sooner it goes to rest the sooner will it be easily excited into growth; but what we chiefly referred to, and to which our correspondent alludes, is the difficulty of bringing it in as quickly as *Sea-kale* or *Asparagus* at an early period. Before Christmas, in similar circumstances, it often requires double the time that either of these do, whilst after the new year it requires but little more time than they do. Either of the latter can be had very good in three weeks, before Christmas, though a month and milder heat will often give stronger and sturdier gatherings. In the case of *Asparagus* we shall fill another light, the roots for which we have kept in reserve; but as the lights of the frame were not of good glass, and the weather has been so dark, we have gathered the *Asparagus* and set it on damp moss in a house commanding more light, to make the heads greener before going to table.

FRUIT GARDEN.

Looked over the fruit-room, removing any specked fruit. Placed Strawberry-pots on shelves in pits where there was any room to spare. Looked over Grapes for any damping berries; damped the wood of Vines breaking in a small pit; top-dressed trees in pots in the orchard-house; prepared some litter for covering outside Vine-borders, formerly merely protected with a little stubble; covered-up the border outside of the Peach-house, where fires have now been lighted, and damped the wood several times in the day. The pipes have been fresh painted with oil and black, but the smell will be all gone before the heat will be at all strong. We notice that some recommend painting the pipes when they are cold; but if there is not much tender in the place we prefer painting the pipes when hot—say when at a temperature of about 120°, as then the paint goes on much thinner, and dries more quickly. It is best to do all this painting when the house is empty, as the effluvia from the oil are dangerous to many tender plants.

ORNAMENTAL DEPARTMENT.

Were we to enter into detail we should merely repeat about plants, &c., what has been said in the last and some previous weeks. From our own practice it may be more useful just to refer to a few matters.

1st, All *Bulbs* and *Hardy Shrubs* will be forced more easily now than they could be before Christmas. *Hardy bulbs*, or such as

are called bulbs, as Winter Aconites, Snowdrops, Crocus, &c., are the better of having only a little extra heat given; Hyacinths and Narcissus, after the pots are full of roots, will stand more; Tulips will go between the two. From 45° to 50° is quite enough for the first, from 55° to 70° for the second, and from 50° to 55° and 60° for Tulips. Hyacinths will rise more freely if a funnel or a pot is placed over the flower-stalk just after it has shown, and a mild bottom heat will assist them, and a little manure-watering as the stem rises. When wanted to bloom in glasses, and not to be grown in glasses, we know no better plan than, just when the first flowers of the spike are opening, to take the plant out of the pot, and wash away all the soil carefully with the hand in a pail of water at 70°, turn the roots carefully into the glass, and if the glass is coloured so that the water cannot be seen, put in a few nodules of sweet dried cowdung, and as many more of little bits of charcoal, fill with water at between 60° and 70°, and change every three days or so. When we used thus to manage with coloured glasses, a pinch of superphosphate of lime, as much as could comfortably be taken between the thumb and finger, placed in the water each time it was changed, would add to the size and strength of the sweet bells. A similar dressing twice a-week would also be useful, spread on the surface of the pot before watering. Sheep or deer dung collected and kept dry to sweeten for two or three months, and then hot water, when near the boiling point, poured over it, say twelve gallons to a peck, allowed to stand for forty-eight hours, and then the clear liquid used in watering, alternately with clean water, will do much to strengthen the flower-stalks; but this liquid must not be used oftener nor stronger, if regard must be had to fine distinct colours in the flowers.

All hardy shrubs, as Rhododendrons, Kalmias, Roses, and Lilacs, will do better if they have been well grown so as to fill the pots in summer, and obtain a mild bottom heat now, and from 50° to 60° top heat, with a rise in sunshine, the syringe being freely used in fine bright weather to soften the buds. When the bloom begins to open the plants must be hardened off by degrees, so as to stand in cooler places, as greenhouses. Hardy Azaleas and Chinese Azaleas require similar care, both before and after they are in bloom, bringing them on gradually and hardening them off gradually. Many a Chinese Azalea well supplied with buds will throw these buds when taken at once from a temperature of 35° and placed in one of 65°; whilst if it had obtained a few days at 45°, a week at 50°, another at 55°, and so on, all the buds would have opened kindly.

2nd, The importance of regulating temperature in proportion to light. If in such dull weather as we have lately had we give a high temperature to lots of comparatively hardy plants, we encourage weak sickly growth, which is almost sure to be attacked with insects. Hence the constant advice, Smoke with tobacco at least once a-week, in order to keep all right. We sometimes wonder what sort of an amount a year's consumption of tobacco will thus come to. A lower temperature, when there was little sun to consolidate growth, would have prevented this being weakly, and saved many pounds of tobacco. Besides, that is not all: tobacco is dangerous when growth is tender, and the foliage or flower-stems are at all damp. We have looked at half a dozen sad complaints of herbaceous Calceolarias and Cinerarias being next to destroyed by smoking them for green fly; whilst with the mild weather we have had this winter, provided these plants had been cool enough and moist enough, and therefore allowed to grow more slowly, there would have been no green fly to destroy; at least it seldom appears in such circumstances.

3rd, Transplanting Trees and Shrubs.—We have pretty well finished the most of what is to be done in this way at present. From a passing remark made on transplanting shrubs, &c., two inquiries have come to us soliciting an answer here. First, "What sort of a thing is the low-wheeled truck you speak about?" We have some waggonettes here, chiefly for moving plants, and which average 5 feet long, 2½ feet wide, with sides and ends 6 inches deep, furnished with a handle on a swivel, and two axles and four wheels, each 9 to 12 inches in diameter. Thus mounted we call them "go-shores." The sides and ends are fastened to the stout floor with bolts. When we use these for transplanting rather heavy shrubs with a ball, we take off the sides and ends, an inclined plane is made after the shrub has been undermined, and one end of the platform truck is brought under the shrub, and with the help of levers the truck and the shrub are got out of the hole, and if the ground is not very soft, and there is

enough of strength, the shrub can be taken anywhere. The second inquiry has reference to "the transplanting a lot of young Oaks growing in an unsuitable place, in good loamy soil, trees from 20 to 35 feet in height. The place they would be taken to is rather more exposed, but the ground equally good. Must be moved this year if moved at all, otherwise be grubbed up. Would be anxious to move them, but do not know how to go about it. Can give a horse, but will not be at the trouble or expense of obtaining a transplanting machine, with strange people to manage it. Must have it done, if done at all, with my own people, with such machinery as they can improvise for the purpose." Well, we have helped to move many such trees without any machinery at all, and thus we proceeded: We dug down a circular trench from 6 to 8 feet from the bole of the tree, according to its height, traced out the roots, and picked away the soil pretty well up to the bole, and then had the earthless roots and the tops carried to the place where an equally large hole had been prepared, and after having the tree set upright, after neatly shortening in the branches, packed the roots firmly and nicely with the new soil, and if rather damp gave no watering until March, but if the soil was dryish watered when all the roots were packed. After allowing time to settle—that is, whilst another tree was being planted, then the rest of the soil was placed on, and beaten firmly, except a little loose soil left on the surface. A basin was also left in case the summer should be very dry. Such trees would require securing from wind, either by three poles, or better still, by three ropes, or three chains fastened to a collar put round the stem of the tree, and attached to three stout stakes or poles, put at equal distances 8 or 9 feet from the bole. Under such circumstances as those alluded to, however, we would proceed a little differently. We would dig the trench as above, and proceed with disentangling the roots until we came to within 20 or 24 inches of the bole, we would then undermine the ball pretty well all round. We would then procure a stout timber gig, consisting of a stout axle-tree with a wheel at each end, and a stout pole to work at pleasure in the centre of the axle-tree. We would wrap a mat or two round the ball, make an inclined plane for the wheels, one of these to go down on each side of the ball; wrap a mat with some straw, &c., round the bottom of the bole of the tree to prevent grazing the bark; set the pole of the gig upright, against the bole of the tree; bring a stout iron chain from the axle-tree to go underneath each side of the ball, and fasten that tightly and securely; brace the pole of the gig and the bole of the tree firmly together, placing some litter between them to prevent grazing the bark; then attach a chain to the top of the pole, and long enough that when the other end was attached to the horse-tackle the horse would be far enough from the top of the tree when it came down. A steady pull, with the help of some leverage, will bring the pole and the top of the tree down, and raise the ball, hanging from and behind the axle-tree; another pull and a little leverage will take the wheels out of the hole, and a little on to solid ground. Then unhack the horse, have some men to keep the top of the tree right, and connect the horse with the axle-tree behind, when the root end will be brought to its destination, men looking after the top all the time. It is easy to bring the root end just over the centre of the hole, and when the top is set upright the pole may be removed from the bole, all chains unfastened, and the packing proceeded with. Though this mode requires more moving-power, yet, if well done, and the trees are not larger than stated, the ball thus secured will keep the tree secure in its place without the assistance of ropes, stakes, or chains. Two other points had better be attended to: First, never let the tree be deeper planted than it was at first; and, secondly, when removing from a warm to a colder place, some small hay-bands, or straw-bands, should be twined round the hole and principal branches, not close together, but with openings between; and this, if the bands are made loose and rough, will help to keep the trees warmer, and will also keep the bark moister. The same remark as to watering will apply as in the first mode noticed. We have known transplanted trees perish from nothing but keeping the roots in a morass. To prevent this, in all stiff soils the subsoil, if not taken out, should be well picked to allow excess of moisture to escape freely. When the soil is kept wet about stagnant roots it just ensures extra cold, whilst we should wish the soil, if possible, to be warmer than usual. The roots will push sooner when the soil is neither wet nor dry, and a little water when the buds push will be more important than much deluging now. A little lightening of the heads, so as to lessen the surface of evaporation, will also be useful; but it will be wise to do it neatly, and to cut back to

strong prominent buds. Of course McGlashan's machine would make short work of such planting; but even with the above materials, if men do the first tree very carefully and nicely under your superintendence, you must not think much of the time, as every fresh tree they go to they will move more rapidly and better. The chief advantage of such transplanting is that the trees make a show at once. They generally require a couple of years or so to get into full growth.—R. F.

COVENT GARDEN MARKET—JANUARY 6.

We have again to report abundant supplies with little or no alteration in prices. Our first consignments of Salads from France have come to hand, but at present are not much better than home grown.

FRUIT.

	s. d.	s. d.		s. d.	s. d.			
Apples..... 1/2 sieve	2	0 to 3	0	Melons..... each	3	0	5	0
Apricots..... doz.	0	0	0	Mulberries..... punnet	0	0	0	0
Cherries..... lb.	0	0	0	Neectarines..... doz.	0	0	0	0
Chestnuts..... bush.	8	0	16	Oranges..... 100	4	0	10	0
Currants, Red 1/2 sieve	0	0	0	Peaches..... doz.	0	0	0	0
Black..... do.	0	0	0	Pears (kitchen)..... doz.	2	0	4	0
Figs..... doz.	0	0	0	dessert..... doz.	1	6	6	0
Filberts..... lb.	0	9	1	Pine Apples..... lb.	5	0	8	0
Cobs..... 100 lbs.	0	0	160	Plums..... 1/2 sieve	0	0	0	0
Gooseberries..... 1/2 sieve	0	0	0	Quinces..... 1/2 sieve	0	0	0	0
Grapes, Hambro..... lb.	4	0	7	Raspberries..... lb.	0	0	0	0
Muscats..... lb.	6	0	10	Strawberries..... lb.	0	0	0	0
Lemons..... 100	6	0	10	Walnuts..... bush	14	0	20	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.			
Artichokes..... each	0	0 to 0	0	Leeks..... bunch	0	3	0	0
Asparagus..... bundle	8	0	12	0	Lettuca..... per scora	1	0	2
Beans Broad..... bushel	0	0	0	0	Mushtards..... pottle	1	6	2
Kidney..... 100	3	0	4	0	Mustd. & Cress, punnet	0	2	0
Beet, Red..... doz.	2	0	3	0	Onions..... per bushel	3	0	5
Broccoli..... bundle	1	0	2	0	pickling..... quart	0	0	6
Brus. Sprouts..... 1/2 sieve	2	0	3	0	Parsley..... 1/2 sieve	1	0	1
Cabbage..... doz.	0	9	1	6	Parsnips..... doz.	1	0	2
Capsicams..... 100	0	0	0	0	Pea..... quart	0	0	0
Carrots..... bunch	0	4	0	8	Potatoes..... bushel	2	6	4
Cauliflower..... doz.	3	0	6	0	Kidney..... do.	3	0	4
Celery..... bundle	1	0	2	0	Radishes doz. bunches	0	6	1
Cucumbers..... each	2	6	3	0	Rhubarb..... bundle	0	0	1
pickling..... doz.	0	0	0	0	Savoys..... doz.	0	9	1
Endive..... score	1	0	2	0	Sea-kale..... basket	2	0	3
Fennel..... bunch	0	3	0	0	Spinage..... bushel	2	0	3
Garlic and Shallots, lb.	0	3	0	0	Tomatoes..... 1/2 sieve	0	0	0
Herbs..... bunch	0	3	0	0	Turnips..... bunch	0	4	6
Korscradish..... bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0

TRADE CATALOGUE RECEIVED.

Lamoureux, Clark, & Co., 4, Cornwall Street, Plymouth.—General Price Current and Garden Directory for 1866.

TO CORRESPONDENTS.

GRAFTING MASTIC (Rev. C. C. E.).—We do not know where it can be obtained, except of M. L'homme Lefort, Belleville, near Paris.

REPAIRING PARISH ROAD (Index).—You must consult a solicitor. There are usually local as well as the general statutes to be considered.

STOVE WITHOUT FLEW (P.).—The stove you mention would give sufficient heat for your small greenhouse, but the fumes from the fuel would injure the plants. We recommend you to have a small gas stove, with a tube from its top passing into the open air. We used one for years.

WASHERS FOR WALLS AND WALL TREES (Mr. N. F. C.).—For the walls take fresh lime and soot in equal proportions, mix to the consistency of whitewash with boiling urine or liquid manure, and apply the wash hot, the hotter the better, to the walls, brushing it well into the holes and crevices. For the trees, take of soft soap, 8 ozs.; sulphur vivum, 1 lb.; and fresh lime, 1 lb. Dissolve the soft soap in a gallon of strong liquid manure, add the sulphur and lime, and mix thoroughly, then bring to the desired consistency by adding clay. Apply this mixture with a brush, rubbing it well into every crack, hole, and crevice, and being careful to coat but not to brush so heavily as to rub off the buds. The earlier it is done the better.

BLACK DAMASK PLUM AS A STOCK (Albis).—This Plum, recommended by Mr. Rivers as a stock on which to graft Peaches, Neectarines, Apricots, and other Plums, is the Damas noir of the French catalogues.

CHINESE PRIMULAS (A Reader).—White-flowered Chinese Primroses with red-leaf stalks are not unusual.

INSECTS IN OAK FLOOR (Yorkshire).—The insect in question is the common Anobium tessellatum. If the oaken floor were soaked with a saturated solution of corrosive sublimate, the larvæ would be killed.—W.

DISCHARGING A GARDENER WITHOUT NOTICE (A Constant Reader).—If you received your wages weekly a week's notice will be sufficient, and your house, if rent free, being really part of your wages, must be quit after the same short notice. You can recover those wages and some compensation for the house if turned out and away without a week's notice. You say certain charges are brought against you; of these we know nothing. If you have not been faithful you are not entitled to any notice.

ORANGE AND CITRON TREES UNHEALTHY (Amateur).—Your trees will be difficult of recovery. Your having them lately taken out of the pots is right, if you drained the pots well, used a compost of light turfy loam, with a free admixture of sand, removed all the old soil from the ball, and cut out the dead roots with a sharp knife. If you did not act thus do so towards the end of February. About the middle of March plunge the pots in a hotbed of about 75° with a top heat of 50° by night, and sprinkle the trees overhead twice daily. If you cannot give them bottom heat, then place them in a vinery, or, failing that, keep them in the greenhouse with the soil just moist, but upon no consideration very wet, nor, on the other hand, dry, and sprinkle overhead morning and evening with water 5° warmer than the temperature of the house. If the trees bloom, or show for bloom, as they may do, without producing shoots, rub the blooms off immediately they are seen, and if the head be very full of small twiggy shoots, thin these out considerably, leaving only the strongest shoots so as to form a well-shapen thin head. Any old partially dead wood to be removed. Keep the soil moist, but do not water copiously until the young shoots appear, and not then until the soil seems to require it, which is a good sign of the plants having roots to lay hold of it. Manure, whether liquid or solid, is poison to plants without leaves and otherwise sickly. Strong food is only for healthy plants, and yours will not need such for the first year. Do not overwater, and yet keep well supplied after growth has commenced.

ROSES AND LAURELS ON A BANK (S. G. W.).—Your bank would look extremely well if climbing roses only were planted, but not with Laurels in alternate lines. We would have it all Roses, or all Laurels, either of which would look very well, and, if anything, the Laurels would be the finer of the two, as they are so much more attractive in winter. Which ever you have, and you can have either according to your taste, the plants should be pegged down, the Roses now, during mild weather, and the Laurels in spring. If you have all Roses peg down the strongest shoots, as they will best cover the surface, and do not prune them beyond cutting out the very weak shoots. In future years all they will need is to be gone over in summer to cut out any old and straggling shoots that spoil the general effect, pegging these down instead of removing them if the ground is not sufficiently covered. In autumn, or from that season to spring, they should be looked over, and the old shoots that have flowered and are weak cut out, young strong shoots being pegged down in their place. The effect of this bank of Roses will be excellent in June and July; but at other times it will not be great. A dressing of manure when the shoots are regulated in autumn, before pegging them down, will do them good, it being neatly pointed in. If Laurels be preferred, peg down the shoots in spring before they begin to grow, spreading them out so as to cover the surface. If the shoots are produced in sufficient numbers to cover the surface, cut them in in June to within 6 inches from the ground; but if not, let them grow, and in autumn or spring peg them down, and so on annually until the ground be completely covered. When that is the case prune them early in June so as to keep them low, and go over them once or twice during the summer, and cut out irregular growths so as to produce a close, even, sloping surface. A slope thus covered is one of the finest ornaments in a garden, always looking well, and many an ugly bank may in this way be rendered ornamental.

PRUNING CLIMBING DEYONIKSIS ROSE (Idem).—Prune it next March. Be content with cutting out the old, weak, and ill-placed shoots, and train so as to allow them plenty of light and air. If the plant is weak cut it in to six eyes.

PELARGONIUMS TO BLOOM IN AUGUST (A. R. McG.).—We presume that your plants have already been stopped, but if not do so at once, by taking out the point of each shoot at the third leaf; but if they were cut in late, as we do these for late blooming, they will not as yet require stopping if they have been kept on a shelf close to the glass and just free from frost, with air daily. You cannot keep them too near the glass, or too cool, if only frost and damp be guarded against, nor give them too much air. When the shoots have made three leaves stop them, repeating this proceeding up to the first week in April, when they should be stopped for the last time. When the plants have broken after the last stopping, remove them to a cold pit, and stand them on an inverted flower-pot, so as to be not further than a foot from the glass. Train out the shoots as they grow, tying-down or otherwise regulating them so as to keep the head open and evenly balanced. Give all the air possible by tilting the lights, and protect at night from frost by a covering of mats; and by day a thin mat thrown over them will do much to retard them, but it must only be used during very bright weather, and for a few hours in the middle of the day. After danger from frost is over draw down the lights on calm nights, and on those when there is no danger of more than a gentle shower of rain, but put them on by day, tilting them high, and shade as before for a few hours during the hottest part of the day, using them at night only to protect the plants from rain and high winds. If the plants are likely to bloom too soon you may, after the trusses appear, remove the pots to a north aspect, where there is no sun from 9 A.M. to 4 P.M., protecting from wind and rain by a frame and lights. It will take six weeks from the time the trusses show till the plants come fully into bloom. Stopping the young shoots late will injure the bloom, but the freshness of the foliage will amply compensate for that. You can hardly have plants in bloom in August by picking off the flower-buds, and doing so will tend to make the plants leggy. Autumn-struck cuttings will make nice plants, but the best are those a year and not more than two years older.

SOWING CYPRESS SEED (Idem).—You may sow it in shallow pans as you propose, in sandy loam, and place them in a cold frame. Plant or prick off the seedlings in the spring of the following year. March is as good a time as any to sow the seed.

CRACKS IN CEMENTED WALL (Idem).—Neither paint nor any other composition will prevent the water oozing through the wall after frost. Your only remedy is to prevent the frost acting upon it, and unless you can do this you must be content to fill up the cracks with cement. If the wall is dry and the cracks are filled with cement, but damp comes through after a storm, then you may coat the wall with boiling coal tar, adding 1 lb. of pitch to a gallon of tar. After filling up the cracks, apply the tar when the wall is dry, or you may give three coats of Carson's anti-corrosion paint, allowing each coat to dry before the other is put on.

IMPROVING CLAYEY SOIL (E. S., Norwich).—Throw the top spit of the whole ground on one side; pare and burn the next 9 inches; spread the ashes over the whole surface, return the top spit, and fork the whole together. Bricklayers' lime rubbish will be a good manure for such a soil.

PAINT FOR HOT-WATER PIPES (K. W. G.).—Mix lampblack to the consistency of thick paint with boiled linseed oil; with this paint the pipes after they have been made as hot as possible, and keep them hot until the paint be dry. The main point is to brush the paint well in, for unless this be done effectually the composition and its application are useless. If you do not care about appearance, use red lead, which will last much longer, and so will white lead. Two coats of paint will be sufficient, but one good coat well brushed in is worth a dozen imperfect ones.

GERANIUM DAMPING (T. A. Southwood).—The leaves show that your house is very damp. We fear that you give the plants too much water at the root, and are not careful to keep the house dry. Give no more water at the root now than is sufficient to keep the leaves from flagging. Light a fire occasionally during damp weather to promote a circulation of air and to dry up the damp, and give abundance of air on all favourable occasions. The house being cold and damp is, we think, the cause of the leaves being in the condition of those sent. Keep the atmosphere drier, and they will improve as the days lengthen.

FOUNTAIN IN FERN CASE (J. J. Romsey).—It will not make the air of the case too damp. Ventilation can always regulate the dampness.

ESPERIONE VINE (Penally).—"UPWARDS AND ONWARDS" informs us, that a parcel directed to "A. B. Penally Station, &c." To be called for," will be sent from Woodstock, on the 9th inst.

FERNS SCORCHED (E. M. H.).—Your only plan will be to keep the Ferns moderately watered, and to cut away the brown fronds as they show themselves, otherwise treating the plants as if nothing had happened. Do not give them any additional heat, as that would induce a temporary increase of growth; and as for applying manure to the roots, neither now nor at any other time will it do them any good, but, on the contrary, it will kill many. Do not overwater, but keep rather dry at the roots, sprinkle the paths in the morning of bright days, and give air during mild weather, cutting away the browned fronds before they become mouldy, and all the plants will recover if they have sufficient vitality left, but they will look bare for a long time.

OWNERSHIP IN FALLEN TREE.—W. H. W. asks—"In the event of a tree falling in an orchard through wind or any other cause, is the tree the property of the landlord or the tenant?" It belongs to the landlord. The gate of the orchard would not belong to the tenant because blown down, why should the tree?

PRIMULA SINENSIS (E. C.).—Do not pick off the trusses. Give the plants the little weak liquid manure.

LYCHNIS SENJO.—W. S., we are informed, can obtain a supply from Mr. W. Dillstone, Nurseryman, Sible Ingham, Essex.

PRICE OF GRAPES (F. H. P.).—Last year the average price of Black Hamburg Grapes in Covent Garden Market was from 7s. to 15s. per lb., in February and March; from 15s. to 27s. in April; and from 8s. to 14s. in May. Muscats brought from 8s. to 14s. per lb. in February, after which time they were over. In considering what month is the most profitable to bring in a crop, you must not only take into consideration the probable price per lb. which the Grapes will realise at different times, but also the relative cost of the fuel required for early and late forcing, and the comparative weight of produce. *New Black Hamburgs* command a high price in spring, but the demand is limited.

PINE-APPLE-HOUSE (E. R. S.).—For thirty-two postage stamps you can have free by post from our office, "The Pine-Apple Manual." It contains drawings, &c., showing what you require.

FRUITING VINES IN POTS (W. C. W.).—Your Vines being in 12 and 18-inch pots you may fruit them in these, or you may pot them into 18-inch pots, providing good drainage, and not disturbing the roots. If you keep them in the 12-inch pots be content with putting the drainage right, relying on top-dressings of manure and applications of liquid manure at the same time. The Vines would carry a heavier crop were the pots placed on shallow tubs containing soil into which the roots could run after passing through the holes in the bottoms of the pots, which they would do freely. The canes should be cut-in, 6 feet is long enough, and always leave sufficient good pump eyes for a crop, and you will have them in that length or not at all.

GARDENER ILL-TREATED (One in Trouble).—If your account is a correct one, then we have no hesitation in saying that you have been a very valuable and faithful servant, and that you have been anything but handsomely treated in return. A man who entered into a place in April, all like a wilderness, and who managed to get the kitchen garden dug and cropped; the shrubbery and lawn put to rights; increased by propagating and begging cuttings, &c., the plants for bedding from three dozen to 1500; attended to horse and trap; was out every day from 8.30 A.M. to 8.30 P.M.; looked after milk; fed the cow, pigs, rabbits, and fowls; cleaned knives, boots, windows, went on errands, &c., and had only the assistance of a boy to help with the mowing-machine, and has now, besides making alterations, got the kitchen garden and shrubberies dug, Sea-kale and Rhubarb covered, fruit trees and bushes pruned and dressed,—must either have had a small place to look after, or it must be quite true that you have worked hard pretty well all the time from early in the morning until late at night. After all this you have been anything but well treated in receiving notice to leave from your master, because you gave a few sprigs of a Spindle Tree that stood near the stables to a neighbouring gardener for Christmas decoration, that gardener having been very kind in giving you cuttings, &c. The conduct of your employer would be still more indefensible if he knew that you received cuttings from others and said nothing against it, as that was something like a silent understanding that you were to do the same. Nevertheless, we must own, that your employer was quite correct in stating that you had no right, in the abstract, to give away the smallest thing without his leave. If you read our previous volumes carefully, you would see that we have frequently urged in such matters the importance of gardeners never depending on use and wont, or general custom, but to have a clear understanding with their employers; and then, of course, if they are not allowed to give away a sprig, or a cutting, whatever may be the feelings of the employer, we trust there will be honest pride and self-respect enough in the gardener never to receive a cutting from others. In such cases it is the best plan to allow an employer to purchase every fresh thing he has. The neighbouring gardeners will not respect a man any the less when they know that he cannot give, and therefore will not take. The copies of your previous testimonials are quite satisfactory, and we feel certain that you will soon be in place again, and where, we trust, your services will be better appreciated; but to secure yourself from all such unpleasantness as the present, we advise you to make sure of the give-and-take principle.

NAMES OF FRUIT (J. F.).—1, Blenheim Pippin; 3, Forge; 4, London Pippin; 5, Golden Reinette; 6, Scarlet Nonpareil. (J. H. C.).—1, Josephine de Malines; 3, Beurre de Rance; 4, Vicar of Winkfield; 5, Triomphe de Jodoigne; 6, Beurre Diel; 7, Ne Plus Meuris; 8, Chaudoncel; 9, Wyken Pippin; 10, Winter Quoining; 11, Franklin's Golden Pippin; 12, Duck's Bill.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 6th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 31	29.523	29.444	50	30	47	45½	S.W.	.29	Boisterous and showery; overcast at night. [slight frost.
Mon. . . 1	29.853	29.583	48	28	47	45	S.W.	.00	Very clear; quite cloudless; exceedingly fine; slightly overcast;
Tues. . . 2	29.952	29.614	47	37	44½	45	S.	.07	Fine; quite cloudless; boisterous, with rain at night.
Wed. . . 3	29.394	29.821	43	38	48	45	S.W.	.00	Clear and fine; very fine; overcast.
Thurs. . . 4	29.793	29.715	50	44	46½	45½	S.	.08	Densely overcast; rain; cloudy and rather boisterous; fine at night.
Fri. . . 5	29.942	29.692	45	29	47	46	W.	.00	Overcast; slight frost at night.
Sat. . . 6	30.026	30.001	43	23	45	45	W.	.04	Hazy; fine; very fine; frosty.
Mean. . .	29.860	29.687	46.57	32.71	46.28	45.28	....	0.48	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY, PAST AND FUTURE.

We are a week behind with our good wishes to all, but they are not the less hearty. We have arrived at the period when, thankful that we have been spared in health and strength, we pass the last year in review, and scan the hopes, wishes, and prospects of the present. We are grateful to all who assist at the result, when we say the task is neither gloomy nor painful. We have had a successful year. Our circulation goes on increasing, and we have to thank the public for support in every way.

Poultry not only holds its own, but it gains in public estimation. The place that belongs to it naturally is being filled. The desire for competition does not slacken, while its importance, as it bears on the question of food, is being every day recognised. This has been the result of exhibitions, and the

consequent testing of breeds, with a view to their capability either of producing eggs or providing food. Already production is greatly stimulated, and the supply increases; but much remains to learn. We still deal with poultry as with a luxury, and those who have some to spare for the market keep it for a great event like Christmas, often to the detriment of quality, and generally to a loss. Believing we are in a transition state, we point out these things lest beginners should be discouraged. We hope if we have to record the progress of poultry during the new year, we shall have to speak of a regular supply, and not of that spasmodic sending which makes a naked market this week, to be remedied by a glutted one next. The true economy of poultry keeping, and the real profit, will be soon found to be the immediate disposal of a bird as soon as it ceases to make a good return. This will be as soon as one intended for the market is sufficiently fat, and one kept for a breeder ceases to lay a number of eggs that will be more than the equivalent of the food consumed. A poultry yard should be like a beleaguered town, and the first act of the commander

should be to get rid of all unprofitable mouths. We will leave this part of our subject, and should not have gone so much at length into it, had it not seemed to us that we were preparing a sort of favourable report for next year. We have a great satisfaction both in retrospect and anticipation. We believe we are chatting with friends. For many years we have exchanged our good wishes with "all whom they may concern." We have no feud on hand, no latent ill will to gratify; and we believe if there were any sign or shibboleth by which those connected with "The Journal" could recognise each other, the contact would be preceded by an open countenance and a hearty shake of the hand. We are speaking only of our belief; our deserts must of necessity be meted by others, but we are so sure of our motives that we would not hesitate to leave judgment in the hands of those who differ from us. Enough of ourselves.

Dorkings have advanced during the last twelve months, not so much in separate pens as in the breed taken collectively. The awards of prizes show it is a wise discretion that mingles colour. Silver-Greys took prizes, competing against all comers. Competition should seek to raise all to the highest, and not to satisfy halting ambition by lower reward. White Dorkings increase very much in size and quality. We cannot note improvement in Spanish. We believe the amateurs of this beautiful breed will have again to get the foreign birds for the sake of fresh blood, and to breed out afterwards the points in which they are inferior to ours. Cochins-Chinas are still rising in popularity, and are good, but they require careful breeding. Drooping combs and vulture beaks have disfigured, and, it may be, disqualified, many an otherwise goodly pen. We are glad to see our *protégés*, the Brahmans, keeping on. We do not hesitate to say that they are destined to form a very large class, and they deserve all the honours they receive. Malays are still good, but it seems to be their province to be always in the position of the aborigines of an antipodean colony after the advent of the white man—they retain their characteristics, but their numbers decrease. The Crève Cœur class is already a success, and the breed is becoming popular. Black Hamburgs are increasing; but sufficient care is not taken to conceal their origin or their helpers. The white face shows too often. It reminds us of the helps that forty demands when it would appear twenty. Golden and Silver-pencilled Hamburgs have been beautiful as ever, and, we doubt not, have been as free layers. We can speak in unqualified praise of the Spangled; the Golden being almost perfect, the Silver very beautiful. The next class is one of our difficulties. What means can be adopted to increase the entries in the Poland classes? The quality of the birds shown is excellent, but the numbers are small—too small. The Distinct Varieties have flourished, and another French breed has made good its claims—"The La Flèche," facetiously called "The French Dorking;" an excellent fowl, we know, but we must draw a line somewhere. Just fancy anything as good as "our Dorking"—the fowl of fowls: capital breeder, no wet nurse required, and the best of food. The Game, as usual, are perfect. They cannot improve. We must believe the amateurs of this breed are imbued with its propensities, and must ask for a division of classes—one to be judged on its merits as a fighting community; the other would feed on a milk diet, destroy their "horrible propensities," and have them judged as capable of fighting, but detesting the very idea of such barbarity. Failing such division, the exhibitors will be in the position of those who, when we were at school, viewed the chameleon, only they will eat each other, and not the birds. Bantams have held their own. Game, Blacks and Whites, have far outnumbered the Sebrights. The latter have failed nothing in beauty, but the Silvers are getting Golden. The weights of Geese and Ducks have spread all over the land, and told their story. They may be vulgar, but they are right English food; and called on to plead as to having harboured a wish for Duck and early peas, or Goose, apple sauce, and French beans, we should have no resource but to plead guilty, and to throw ourselves on the mercy of the court. And the Turkeys—twenty pounds of good meat! When we look at them we fancy the white, succulent, flat side cut off the breast (no one who can carve a Turkey cuts from point of breast to crop), bounded by the green stuffing, and relieved by the slice of cherry ham, and we think well of those who increase such meat. May their shadows never be less.

We have reached the end of our tether. Every subject is exhausted, except that of our good wishes for all. It is said, That which is disagreeable is put off to the last, but we believe

that which is pleasant is also deferred. Is it that anticipation is before reality? We believe not. The man who feels what he is about to say is seldom eloquent. "Abuse me," said a first-rate speaker to an audience, "and I don't care a snap of the finger for you all; use me kindly, as you have done, and I am dumb." So are we.

Friends, Contributors, Subscribers, we bid you God speed for the new year. We thank you for the past. We hope for the future. We wish you every good; we wish you happiness and prosperity; and that, without distinction of any kind, 1866 may be—

A HAPPY NEW YEAR.

FIRST NATIONAL SHOW OF THE POULTRY CLUB.

THIS, which is to be held at Rochdale on the 2nd, 3rd, and 5th of February next, promises to be very successful. Why Rochdale was selected we do not know; but even if less accessible than might be desired, the prizes are sufficiently liberal, and the entrance fees sufficiently moderate to secure a large number of exhibitors, and, we hope, a numerous attendance. There are no less than fourteen silver cups, and the prizes vary in each class from £3 for the first, to 10s. for the last. Entries close January 20th.

FIRST IMPRESSIONS OF BINGLEY HALL.

"First impressions are everything." This is one of the canons of ladies' criticism. The fair sex believe in it thoroughly, but especially in regard to themselves. Thus, for example: A lady, a good wife, and a good house-keeper into the bargain—(Will our modern fast young ladies make the last-named? I doubt it)—was anxious to receive a guest with all honour, and to make a good first impression upon him, particularly as to the appointments and finish of her house, for her husband had frequently told her that this gentleman's home was perfect in every fitting up, and that the furniture was faultless in its arrangement. Her anxiety, then, what good wife can doubt? Just before dressing for dinner she had been very busy, and time had flown, she thought, faster than usual. She glanced round her drawing-room. Was it quite in order? Were the anti-maccassars all right?—the covers off all the chairs, and that ottoman glorious with worsted work? Yes, the cover was off that. The whole looked perfect—nothing stiff and formal, but all in a negligent-elegant yet orderly way, just as only an English gentleman's room can look when he has a good wife, when lo! looking upwards the lady espied some dust on the chandelier. Quick as thought she mounts the table, and begins to remove the obnoxious palpable powder; when oh! alas! horrible to relate, that dreaded guest was announced—a terrible, over-punctual man, fond of quoting Lord Nelson's half-an-hour-before-time story. To be caught standing on a round table dusting a chandelier! worse, to have to make the humiliating decent duster in hand, and thus welcome the gentleman! "To make such a first impression," instead of advancing from her chair by the fire, extending an all-graceful jewelled hand, with the daintiest of pocket-handkerchiefs in the other—'t was too bad, it spoils the whole evening; and when she entered half an hour afterwards all right for the party she felt embarrassed, troubled, awkward. "What a first impression to have made!"

"First impressions are everything." How many of us married men must with a shrug own the truth of this ladies' canon.

"First impressions are everything," reads aloud to her husband one of our married lady admirers. He has been grumpy, but hearing these words he looks up, and she is gazing at him with that first-impression look of her's. "'WILTSHIRE RECTOR' is right there, my pet," he says as he turns, grumpy now no longer, a kind smile on the reader. "First impressions are everything." "Tell me not that, I knew it too well before!" raves some love-sick youth. "I saw her—I see her still—standing on the doorstep of her father's house. She was going out to play croquet. Her parasol hung on her right-hand little finger. She was buttoning her left-hand glove, and glancing down with her eyelashes—happy eyelashes!—kissing her fair cheeks. Ah! she knew I was looking at her! Oh, it was maddening!" Poor simpleton! She knew nothing of the kind; she was only looking down on her glove and thinking.

"I must really get a new pair, for these are nearly worn out." "First impressions are everything." Well, we must all own they are a great deal. You may try to reason yourself out of it, but you cannot.

Now, I was determined to let nothing spoil my first impressions of Bingley Hall. I begged friends not to tell me anything about the place. Had I heard it mentioned in the train I intended to have instantly closed my ears with my forefingers, unheeding what a peculiar first impression I should be making upon my fellow passengers. I wished my mind to be a sheet of blank paper on the subject. Should Bingley Hall prove to be a grand feudal structure of the date of Richard the First, built by Alfred de Bingley, well, be it so, but do not tell me beforehand. Should it prove to be a brick building, time of Victoria, all well and good; but do please let me get a fair unbiassed first impression of it, that is all I want.

The weather is as fine for the Birmingham Show as can be expected at this time of the year. If in December you have it dry abovehead and not frightfully cold, be thankful; as to dirt beneath, thick hoots on and you are all right. Bristol station reached, and on by the Midland Railway. Clear of Bristol smoke at last. On by Berkeley Road—would that I could see Berkeley Castle, but I cannot, nor yet can I catch one glimpse of the Severn. Gloucester! well, there is the Cathedral—"pretty church that for the country," as the Cockney said (fact, I assure you), when he first saw Canterbury Cathedral. I am travelling on right comfortably with a poultry enthusiast by my side, a clergyman of course; a bright young girl, his sister, just smitten with the love of fowls and Pigeons, opposite to him, while my *vis-à-vis* is one of the outer world as to poultry. He feigns to scorn "cocks and hens," and only goes to Birmingham to see the cattle and the dogs. I am not hopeless of him; I think he is but half an opponent, and I have a good hope that the taste shown in his beautiful garden will shortly extend to his poultry yard, and "those wretched mongrels" will be dispatched in a few months. Four friends in a railway carriage, merrily chatting, beribboned and great-coated, with a poultry show at the end of the journey—nay, the poultry show, and who would not be happy? Cheltenham station, but I see little of the town; of Tewkesbury nothing. Worcester, with its great bishop—a favourite, and no wonder, with the late Prince Consort—is soon passed; then on to the Black Country, and soon near to Birmingham. Red brick houses, smoky atmosphere, wet, black, narrow streets. On further, creeping on, and things begin to improve. I noticed that at the stations, especially from Gloucester onwards, I began to see eager agricultural faces waiting for the train—faces saying plainly, "We are going to the Cattle Show." I saw others not wholly agricultural, and yet eager, whom I knew I should meet (I did), in the Poultry Show, catalogue in hand. Of Bingley Hall I heard nothing, happily. An innocent voice did ask indeed, "Is it a large Show?" and was answered, "Large! I should think so! A hundred and fifty pens of Game Bantams, besides the Black, White, and Yellow, to say nothing of the larger fowls." Then my friend at my left was an exhibitor at Bingley Hall. His thoughts were evidently there. How he longed to see his pens, and yet the sublime indifference he assumed! But in spite of it, how his conversation turned again, and again, and again—and no wonder—upon his prospects! Now his spirits sank to zero—"They'll not be noticed!" Anon they rose, turning to me with "Don't you think that Dorking cock will do something?" Then at intervals, "Those stupid Judges! I believe they only guess after all; they really know nothing about it." I do not think I dare become an exhibitor, it must be so wearing to the nervous system. I would advise all life assurance companies to add to their terrific questions this one, "Are you an exhibitor of poultry?" with an N.B., "If you are, we cannot insure your life."

At Birmingham at last, as that explosion in the proof-house tells us—Birmingham, the land of guns and gunmakers. And what a station this one in New Street is! surely larger than the one at Paddington. Soon, passing some beautiful specimens of modern street architecture, I turn to the left, and am one of a stream of people on their way to Bingley Hall. Presently I pass the famed Town Hall; surely 'tis some beautiful temple transplanted from Greece. As I trudge my not weary way I remember that the Birmingham Show is fondly called "The Mother of Shows." Here the experiment of bringing poultry together for exhibition and competition was first tried in 1847, and here a show has been held each year since. Birmingham is undoubtedly well situated for the purpose—in the heart of England, accessible from all sides, far

enough north, and yet not too far, with an enterprising population, many of them devoted from time immemorial to birds. A first-prize at Birmingham is the ambition of many a poultry fancier. "I don't care for little shows, I want to win at Birmingham, I shall not be satisfied until I do:" this is the feeling. Then other Committees feel, "What do the Birmingham Committee do? What do they say?" Thus musing I walk on; but a placard catches my eye, "To the Dog Show," and to the left I see a new building called "Curzon Hall," which has become for the time "a howling wilderness." Further, then a turn to the right, and I am brought to a standstill, where carriages, and cabs, and foot-passengers are jostled together, and on the curbstones of the opposite pavement the ticketless stand gazing and longing to enter. Passive in the hands of a black-helmeted policeman (I wonder if Millais could have brought tears to our eyes if instead of a Black Brunswick he had painted a policeman), I am guided to a green-baize screen, and pass, sorely jammed, through a turnstile, and I am in—Bingley Hall.

In front of me is a large hollow square, with a narrow gallery above, and in the said square fat beeves, and cows, and sheep, and pigs, some of the creatures marvellously fat; there are also agricultural implements to the left. I often wonder when I see a number of people feeling fat cattle how many are the wiser for so doing; but it looks farmer-like and learned, so it is done. But a shrill crowing (I had not yet heard the howling and yelping of the dogs), guides my feet to the left; when, descending a few steps, I enter a side hall not galleried, and occupied, large as it is, by nothing but—poultry: number of entries, 1675! Think of that! I wander round perfectly bewildered. I am free to confess that my first impression was—confusion. I was confused, and permitted myself to be. Round and round I went, then through the cross paths (so to speak). My only hope the first day was to become used to the scene, and on the next, having learned something of localities, to examine the different varieties of poultry at my leisure. I was like a boy in London for the first time, he wonders and is bewildered, then presently he begins to know squares and streets.

I ascend (after hours of wandering and wondering, feeling that chaos had come back to earth, and that its inhabitants, to make it more chaotic, were crowing cocks), the narrow gallery before mentioned partly around the cattle hall, and find the Pigeons; a pleasant change this gentle and but occasional cooing for ear-piercing crowing. Opposite to the Pigeons in the gallery lay wondrous roots, and I am entreated to examine them; but in close proximity to beautiful birds I felt a rooted objection to them, and would not notice them. I spend hours in the Show, among the fowls or in front of the Pigeons, gradually becoming used to the scene, and yet my principal feeling was amazement! Four o'clock comes, and with that hour a tremendous crowd. I had kept myself tolerably perpendicular till then, occasionally spun round by some preposterous crinoline, feeling as a top must feel the moment after the string round it has been drawn suddenly away. But now the crowd becomes crushing—almost dangerous. Darkness was coming on when, getting more bewildered as the crowd increased, I had the happiness to be recognised by my future host, and carried off clear of Birmingham smoke and crowds to his charming residence and hospitable hearth. Such of Monday, my first day in Bingley Hall.—WILTSHIRE RECTOR.

(To be continued.)

PHILOPERISTERON SOCIETY.

THIS Society, formed in 1847 for the improvement of every variety of Pigeon, held its nineteenth anniversary at the Freemasons' Tavern on Thursday last. The attendance of visitors was not quite so numerous as on many former occasions; nevertheless, a vast number were admitted by tickets to the great hall of the Freemasons' Tavern, in which the Exhibition was held. Those who had not previously witnessed this interesting collection must have been highly gratified at the sight of such a number of Pigeons of almost every variety known to the fancier.

A splendid collection of Carriers was exhibited by Messrs. Square, Date, Hedley, and Everitt. A Black cock, the property of the first-named gentleman, elicited much admiration—in fact, a finer specimen is seldom seen, the wattle being perfection. A Dnn hen, the property of Mr. Date, was also much admired.

Mr. Wicking as usual showed some superb specimens of Magpies, Turbits, Fantails, Jacobins, &c., all in most beautiful condition and health.

Almonds were better represented on this occasion than they have

been for some years past, Mr. Lucy and Mr. Merck bearing the palm.

Mr. Percivall exhibited a pen of splendid Dragons, some of which have taken prizes in all parts of the country; also some Short-faced Baldheads, Mottles, &c. Mr. Esquilin's Yellow Tumblers were much admired, being particularly fine in colour.

We regret that this Exhibition, which has always been so largely contributed to by a splendid collection of Powters, should on this occasion have been entirely without that much-admired variety. On the whole, however, both members and visitors must have felt much pleased with the day's proceedings.

PAISLEY ORNITHOLOGICAL ASSOCIATION SHOW.

This annual Exhibition took place on the 1st inst. in the new Volunteer Drill Hall. Every year the collection of birds seems better than in the previous one, but on this occasion it greatly excelled in quality and variety any Show which the Association has held. Upwards of 1200 birds were exhibited, and an unusually large number of sales were effected. The accommodation in the new hall was also excellently suited for the Show, and though the weather was disagreeable, the visitors poured into the Exhibition from the opening till the close.

We append a list of the prizes:—

SPANISH.—First, J. Henderson, Carfin Mill, Motherwell. Second W. Creelman, Kilmarnock. Third, A. Paterson, Airdrie. *Chickens.*—First, J. Ridpath, Edinburgh. Second, A. Harvey, Stewarton. Third, T. Knowles, Aberdeen. Silver Cup, A. Yuil, Airdrie.

DORKINGS (Coloured).—First, W. Reid, Hayston, Kirkintilloch. Second, H. Heys, Springfield House. Third, J. Elsworth, Campsie Junction. *Chickens.*—First, Third, and Silver Cup, R. Campbell, Cardross. Second, R. Logan, Netherton.

DORKINGS (White).—First, T. Wallace, Roselind Cottage, Troon. Second and Third, J. Aitken, Paisley.

CHINESE.—First, H. Price, Glasgow. Second and Third, J. Stuart, Thistlebank, Helensburgh.

BRAMA POOTRAS.—First, J. Stuart. Second, R. Abercrombie, Paisley. Third, J. Bell, Overmerton House, Partick.

OLD SCOTCH BREED.—First and Medal, C. Mc'Dairmid, Market Street, Glasgow. Second and Third, J. Paul, Govan Station, Glasgow.

HAMBURGS (Golden-spangled).—First, H. Currie, Ardrossan. Second, and Cup, R. Cunningham, Stewarton. Third, J. M'Adam, Rosebank Cottage, Bnsby.

HAMBURGS (Golden-pencilled).—First and Cup, J. Urquhart, Ballat Cottage. Second, R. Murray, Paisley. Third, J. Paton, Stewarton. Highly Commended, J. Urquhart.

HAMBURGS (Silver-spangled).—First, J. Stewart, South Arthurlie, Barhead. Second, S. C. Noble, Kendal. Third, A. Glen, Erskine.

HAMBURGS (Silver-pencilled).—First and Second, J. Paton. Third, J. Crookston, Bishopbriggs.

POLANDS (White-crest).—First and Second, J. Paul.

POLANDS (Any other colour).—First, W. R. Park, Melrose. Second, W. Ramsay, Johnstone. Third, A. Jardine, Cardonald.

GAME (Black-breasted, and others).—First, J. M'Nab, South Arthurlie, Barhead. Second and Cup, W. Easton, Abbey Place, Jedburgh. Third, J. Anderson, Ruthven House, Meikle. Highly Commended, A. Gibb, Ayr.

GAME FOWLS (Any other colour).—First, A. M'Colloch, Trees, Barhead. Second, J. Anderson. Third, W. Easton.

GAME BANTAMS (Any colour).—First and Medal, J. Bell. Second, J. Sharp, Johnstone. Third, A. Campbell, Blythwood.

BANTAMS (Black).—First, A. Jamieson, Kilmarnock. Second, A. Sym, Kilmarnock. Third, W. Lockhart, Kilmarnock.

BANTAMS (Any other kind).—First, W. Raeside, Irvine. Second, W. Morris, Paisley. Third, D. Murray, Edginton Castle.

CROSS ON ANY OTHER BREED.—First, W. White, Paisley. Second, A. Campbell. Third, J. Fulton, Beith.

DUCKS (Aylesbury).—First, A. Cunningham, Craigends. Second, R. Campbell. Third, J. Crookston. Highly Commended, W. M'Keggie, Bowfield, Howwood. Commended, H. Heys.

DUCK (Any other kind).—First, A. Campbell. Second, Mrs. A. Arthur, Cumnock. Third, J. Crookston.

PIGEONS.

POWTERS.—First, R. Fulton, Duke Street, London. Second, G. White, sen., Paisley. Third and Medal, R. Fulton.

CARRIERS.—First, G. White, sen. Second, R. Fulton. Third, G. White, jun., Paisley.

FANTAILS.—First and Medal, J. Sharp. Second, W. R. Park. Third, J. R. Rennards, Helensburgh.

RUFFS.—First, J. Sharp. Second, A. Middleton, Monmouthshire. Third, R. Barclay, Camb Bank.

SHORT-FACED TUMBLERS.—First, R. Fulton. Second, G. White, sen. Third, D. Raeside, Saltcoats.

TUMBLERS (Any other kind).—First, W. R. Menzies, Crossmyloof. Second and Third, J. Sharp.

ANY OTHER DISTINCT BREED.—First, J. Prentice, Glasgow. Second, J. R. Rennards. Third, J. Sharp.

COMMON PIGEONS.—First, J. Glasgow, Dalry. Second, W. Menzies, Kilmarnock. Third, J. Neilson, Johnstone.

CANARIES.

PAIR FOR SILVER MEDAL.—W. Houston, Paisley.

YELLOW COCK.—First, W. M'Leod, Glasgow. Second, G. Ayton, Glasgow. Third, R. Wood, Paisley. Fourth, T. Buchanan, Glasgow.

BUFF COCK.—First, J. Graham, Kilmarnock. Second, A. Kelly, Paisley. Third, J. Richmond, Kilmarnock. Fourth, G. M'Alpine, Renfrew.

YELLOW HENS.—First, R. Paterson, Glasgow. Second, J. Graham, Kilmarnock. Third, A. Kelly, Fourth, J. Wilson, Galston.

BUFF HENS.—First and Silver Cup, W. Souden, Paisley. Second, J. Graham. Third, J. Kelly, Johnstone. Fourth, C. M'Williams, Glasgow.

PAIR PIEBALD CANARIES FOR CAGE.—G. M'Alpine.

PIEBALD YELLOW COCK.—First, T. Buchanan. Second, A. Kelly. Third and Fourth, G. Haddow, Kilwinning.

PIEBALD BUFF COCK.—First, J. Mathews, Glasgow. Second, A. Crawford, Johnstone. Third, R. Wylie, Paisley. Fourth, W. M'Leod, Glasgow.

PIEBALD YELLOW HEN.—First, R. Calderwood, Kilmarnock. Second, J. Wilson, Galston. Third, W. Robertson, Paisley. Fourth, W. Paterson, Glasgow.

PIEBALD BUFF HEN.—First, J. Mathews. Second, J. Richmond. Third, R. Wood. Fourth, T. Buchanan.

YELLOW GOLDFINCH MULE.—First, W. R. Menzies. Second, W. Fleming, Glasgow.

BUFF GOLDFINCH MULE.—First, J. R. Adam, Ayr. Second, J. Graham. **GOLDFINCH.**—First, G. Haddow, Kilwinning. Second, A. Adam, Paisley.

BULLFINCH.—Prize, A. Cunningham. **HOME OR FOREIGN.**—First, J. Agnew, Paisley. Second, G. B. Armour, Paisley.

JUDGES.—For *Hodley*: Mr. J. Crawford, St. Rollox, Glasgow; J. Steven, M.D., Ardrossan; Mr. R. E. C. Benton, Darnlie House; Mr. W. Farquhar, Barhead; D. Dougald, M.D., Strathvan; Mr. J. Holburn, Stewarton; Mr. H. Todd, Paisley. For *Pigeons*: Mr. G. J. M'Lean, Edinburgh; Mr. J. Paton, Stewarton. For *Small Birds*: Mr. G. Grant, Paisley; Mr. W. White, Renfrew; Mr. D. Buchanan, Paisley; Mr. M. Wilson, Paisley; Mr. T. Buchanan, Glasgow; Mr. J. Wren, Pollokshaw; Mr. A. Brown, Stewarton; Mr. W. Taylor, Glasgow.—(*North British Daily Mail*.)

ABERDEEN POULTRY SHOW.

The fifth annual meeting of the Aberdeenshire Association for the improvement of Poultry, Pigeons, and Canaries, was held in the Artillery Gymnasium, Queen Street, Aberdeen, on Monday and Tuesday, the 1st and 2nd inst. The following is the list of awards:—

SPANISH.—First and Cup, Miss B. Ridpath, Edinburgh. Second, E. Draper, Northampton. Third, G. Wallace, Aberdeen. Highly Commended, A. Cochran, Perth. Commended, Mrs. M. U. B. Cross, Monifieth, near Dundee; T. Knowles, jun., Aberdeen. *Chickens.*—First and Cup, S. Mitchell, Aberdeen. Second, W. Meff, Aberdeen. Third, J. H. Wilson, St. Bees, Cumberland. Highly Commended, W. Meff. Commended, T. Knowles, jun.

DORKINGS (Silver-Grey).—First and Cup, J. Gordon, Manar, Aberdeen. Second, Hon. Mrs. Arluthnot, Inehmartine, Inchture. Third, J. E. Wilson. Highly Commended, T. Knowles, jun. *Chickens.*—First, J. Curror, Comieston, near Edinburgh. Second, D. King, Aberdeen. Third, A. F. Williamson, Blackburn. Highly Commended, A. Copland, Kintore; T. Knowles, jun.

DORKINGS (Any other variety).—Cup, First, and Second, Hon. Mrs. Arluthnot (Silver-Greys). Third, J. Anderson, Meikle (Dark Grey). Highly Commended, T. Knowles, jun. Commended, Miss Black, Banchory Terman; J. Anderson (Dark Grey). *Chickens.*—First and Second, J. Anderson (Dark Grey). Third, J. K. Fowler, Aylesbury. Highly Commended, Mrs. M. U. B. Cross; Hon. Mrs. Arluthnot (Dark Grey). Commended, Mrs. M. U. B. Cross; T. Knowles, jun. (Dark Grey).

COCHIN-CHINA (Buff and Cinnamon).—First and Cup, W. Hendry, Aberdeen. Second, T. Knowles, jun. Third, Messrs. Bown & Greenwood, Barragote, *Chickens.*—First, J. Poole, Ulverston, Lancashire. Second, T. Knowles, jun. Third, Messrs. Bown & Greenwood. Highly Commended, Mrs. Tocher, Aberdeen; G. Murray, Aberdeen; C. Pease, Southend, Darlington. Commended, Miss E. Aglionby, Grasmere; W. Hendry, Aberdeen; Hon. Mrs. Arluthnot; T. Knowles, jun.

COCHIN-CHINA (Any other variety).—First and Cup, E. Tudman, Ash Grove, Whitelure, Salop (Partridge). Second, H. Yardley, Birmingham. Third, J. K. Fowler (Partridge). *Chickens.*—First, E. Tudman (Partridge). Second, J. Poole, Ulverston, Lancashire (Grouse or Partridge).

BRAMA POOTRAS.—First and Cup, R. W. Boyle, Bray, Co. Wicklow, Ireland. Second, H. Lacy, Hebbin Bridge, Yorkshire. Third, C. Pease. Highly Commended, Hon. Mrs. Arluthnot. *Chickens.*—First, R. W. Boyle. Second, J. K. Fowler. Third, Mrs. Carnegie, Rediall, Foulden. Highly Commended, R. O. Farquharson, Haughton; T. Knowles, jun. Commended, J. Clark, Foehabers Station; Mrs. M. U. B. Cross; Hon. Mrs. Arluthnot.

GAME (Red).—First, J. Anderson. Second, W. Hay, Aberdeen. Third, Mrs. M. U. B. Cross. Highly Commended, Mrs. Bennet, Aberdeen. Commended, J. Wood, Wigan, Lancaster. *Chickens.*—First and Second, J. Anderson. Third, J. Wood. Very Highly Commended, J. H. McNah, South Arthurlie, Barhead. Highly Commended, J. Wood; A. Stapleton, Premay, by Insh.

GAME (Any other variety).—First, S. Matthew, Stowmarket, Suffolk (Duckwing). Third, F. L. Roy, Younger of Newthorn, Kelso (Duckwings). Third, J. Anderson (Duckwings). Commended, J. Anderson (Duckwings).

HAMBURGH (Golden-pencilled).—First, Mrs. Macbray, Midbeltie, Kincardine O'Neil. Second and Third, J. Riach, Aboyne.

HAMBURGH (Golden-spangled).—First, A. Copland. Second and Third, Mrs. Stronach, Aberdeen. Commended, A. Copland.

HAMBURGH (Silver-spangled).—First, M. U. B. Cross. Second and Third, Mrs. Stronach.

POLANDS (Any variety).—First, W. Silvester, Hampden View, Sheffield (Gold). Second and Third, Comatess de Flahault, Tullylalan Castle, Kincardine-on-Forth (Buff and Silver).

ANY OTHER VARIETY.—First and Second, Hon. Mrs. Arluthnot (Crève Cœur and La Flèche). Third, Comatess de Flahault (Crève Cœur). Commended, Hon. Mrs. Arluthnot (Crève Cœur).

GAME BANTAMS.—First, Rev. G. Raynor, Kelvedon Hatch Rectory, near Brentwood, Essex. Second, J. Anderson. Third, W. F. Entwisle, Otley, Yorkshire. Very Highly Commended, Mrs. M. U. B. Cross. Highly Commended, Mrs. M. U. B. Cross. Commended, G. Spalding, Drumsturdie, near Dundee.

BANTAMS (Any other variety).—First and Second, M. Leno, Markyate Street, Dunstable (Silver-faced and Gold-faced). Third, J. Ness, Pathhead, Kirkcaldy (Gold-faced). Very Highly Commended, Mrs. M. U. B. Cross

(Silver Sebright). Highly Commended, H. E. Emberlin, Leicester (White); Mrs. M. U. B. Cross (Golden Sebright).

TURKEYS (Any variety).—First, Hon. Mrs. Arbuthnot. Second, Mrs. Carnegie. Third, J. Gordon. Highly Commended, Mrs. Stronach. Commended, Mrs. Carnegie; J. Gordon.

GESE (Any variety).—First and Second, Hon. Mrs. Arbuthnot (Toulouse). Third, J. K. Fowler (Toulouse). Commended, Mrs. Carnegie (Toulouse).

DUCKS (White Aylesbury).—First and Second, J. K. Fowler, jun. Third, A. Farquhar, Elswick, near Stonehaven. Commended, Mrs. F. W. G. Gray, Aberdeen; J. K. Fowler.

DUCKS (Any other variety).—First, J. K. Fowler (Rouens). Second, T. C. Harrison, Hull (Brown Call). Third, J. Anderson (Rouen). Highly Commended, J. Menzies, Kincardine-on-Forth (Rouen); J. Anderson (East Indians). Commended, Mrs. Carnegie (Rouen); Mrs. F. W. G. Gray (White French); Hon. Mrs. Arbuthnot (Rouens).

SELLING CLASS (Any variety).—First, J. Anderson (Dorkings). Second Mrs. Rennett (Game). Third, H. Ashton, Manchester (Nankin Bantams) Highly Commended, W. Anderson, Cove, by Aberdeen (Spanish); R. Tate, Leeds (Game Bantams). Commended, Mrs. Black (Dorkings).

SINGLE COCKS.

SPANISH.—First, T. Knowles, jun. Second, W. Meff. Third, G. Wallace, Dorking. —First, G. Campbell, Tillinamolt, New Pitsligo. Second, Mrs. Black. Third, Countess de Flahault. Highly Commended, A. F. Williamson, Caskieben Mains, Blackburn; W. Forbes, Whiteford, Pitcaple. Commended, Mrs. W. Pyper, Belhelvie Village.

COCHIN-CHINA.—First, T. Knowles, jun. Second, Mrs. Tocher, Aberdeen. Third, W. Massey, Fulford, York. Highly Commended, W. Hendry; G. Murray. Commended, G. Murray.

BRAHMA POOTRA.—First, J. K. Fowler. Second, Hon. Mrs. Arbuthnot. Third, J. Masson. Highly Commended, P. Campbell, New Deer; T. Knowles, jun. Commended, Mrs. Stronach.

GAME.—First and Cup, J. Brough, Carlisle. Second, M. Billing, jun., Birmingham. Third, W. Gamon, Thornton-le-Moors, Chester. Very Highly Commended, F. W. G. Gray; T. Burgess, Burleydam, Whitechurch, Salop; A. B. Dyas, Madeley, Shropshire; T. Knowles, jun. Commended, W. Boyes, Beverley, Yorkshire; R. Swift, Southwell, Notts.

HAMBURGH.—First, G. Campbell. Second, Mrs. Stronach. Third, P. Campbell.

SWEETSTAKES FOR GAME COCKERELS.—First and Cnp. N. Grimshaw, Burnley, Lancashire. Second, J. H. Macnab. Third, M. Billing, jun., Birmingham. Fourth, A. B. Dyas. Highly Commended, J. H. Macnab; T. Burgess; J. Anderson; F. L. Roy, jun., Nenthorn, Kelso. Commended, C. Jamieson, Forfar.

SWEETSTAKES FOR BANTAM COCKS.—First and Cup, M. Leno. Second, G. Maning. Third, J. W. Morris, Rochdale, Lancashire. Fourth, Rev. G. Raynor. Highly Commended, W. P. Entwisle; Sir G. M'Pherson Grant, Bart., Ballindalloch; J. Crossland, jun., Wakefield; F. L. Roy, jun. Commended, W. T. Hay, jun., Aberdeen; W. Hodgson, Darlington.

PIGEONS.

POWERS (Any colour).—First, M. Sanderson, Edinburgh. Second, J. R. Robinson, Sunderland. Very Highly Commended, J. Hay; M. Sanderson. Highly Commended, H. E. Emberlin. Commended, F. M'Cræ, Aberdeen. **COCK**.—First, M. Sanderson. Second, J. R. Robinson. Very Highly Commended, M. Sanderson. Highly Commended, F. M'Cræ; M. Sanderson; J. Thackray, York. Commended, M. Sanderson. **HEN**.—First and Medal, J. R. Robinson. Second, M. Sanderson. Highly Commended, H. E. Emberlin. Commended, E. E. M. Royds, Rochdale.

CARRIERS (Any colour).—First, T. Sheffield. Second, H. Allsop, Birmingham. Highly Commended, W. Massey, York. Commended, W. Tocher, Aberdeen; H. Martin, Glasgow; T. Knowles, jun. **COCK**.—First, W. Massey. Second, T. Colley. **HEN**.—First, H. Martin. Second, W. Massey. Highly Commended, F. M'Cræ; T. Colley.

ALMOND TUMBLERS.—First and Third, J. R. Robinson. Second, J. Thackray. Highly Commended, T. Knowles, jun. Commended, W. Tocher.

TUMBLERS (Any colour).—First, J. McDonald, Aberdeen. Second, H. Yardley. Highly Commended, T. Knowles, jun. Commended, M. Sanderson; J. R. Robinson.

FANTAILS (Any colour).—First, J. R. Robinson. Second, J. Thackray. Very Highly Commended, J. R. Robinson; J. Rae, Guestrow, Aberdeen. Highly Commended, H. Yardley; T. Knowles, jun. Commended, J. McDonald; T. Knowles, jun.

JACOBS (Any colour).—Medal, T. Knowles, jun. First and Second, J. T. Lawrence, Liverpool. Very Highly Commended, J. R. Robinson; J. T. Lawrence. Commended, J. T. Lawrence; H. Yardley.

TREBITS AND OWLS (Any colour).—First, J. Thackray. Second, H. Yardley. Very Highly Commended, H. E. Emberlin; A. Murray. Highly Commended, Mrs. M. U. B. Cross; W. Massey; J. Hay. Commended, J. R. Robinson; Mrs. M. U. B. Cross; H. Yardley.

EARNS (Any colour).—First, J. Thackray. Second, W. Massey. Very Highly Commended, J. T. Lawrence. Highly Commended, J. R. Robinson.

TRUMPETERS (Any colour).—First and Second, J. R. Robinson. Very Highly Commended, E. E. M. Royds; H. Yardley.

ANY OTHER VARIETY.—Medal, First, and Second, J. Thackray (Magpies and Nuns). Very Highly Commended, J. Hay (Dragons). Highly Commended, E. E. M. Royds (Nuns); Countess de Flahault (Romans); H. Yardley. Commended, J. Percivall, Peckham, London (Archaegals).

CANARIES.

BELGIAN (Yellow).—Cock.—First, A. Murray. Second, A. Barnett, Aberdeen. Third, J. Mitchell, Aberdeen. Very Highly Commended, A. Murray. Highly Commended, W. Sirrell, Aberdeen. **HEN**.—Very Highly Commended, J. Wishart, Aberdeen. Highly Commended, A. Murray.

BELGIAN (Buff).—Cock.—Very Highly Commended, J. Mitchell. **HEN**.—First, R. Buist, Aberdeen. Second, R. Smith, Inverury. Third, W. Wilson, Aberdeen. Very Highly Commended, J. Mitchell.

BELGIAN (Fleeced).—Cock.—First and Third, J. Falconer, Aberdeen. Second, W. Mitchell, Aberdeen. Very Highly Commended, A. Middleton. **HEN**.—First, J. Ross, Aberdeen. Second, J. Skinner, Aberdeen. Third, R. Ross, Aberdeen. Very Highly Commended, R. Buist.

SCOTCH FANCY.—First, R. Ross. Second, J. Ross. Third, W. King, Dundee. Very Highly Commended, J. Ross.

ANY OTHER VARIETY.—First, W. Aiken, Aberdeen (Common Fleeced Cock). Second, A. Middleton, Aberdeen (Fleeced half-Belgian Cock). Third, J. Mitchell (Common Cock).

GOLDFINCH MULE.—First, Second, Third, and Very Highly Commended, J. Hunter, Aberdeen.

BIRDS OF 1865.

BELGIAN (Yellow).—Cock.—First and Third, J. Mitchell. Second, W. Wilson. Very Highly Commended, R. Buist. **HEN**.—First, J. I. Gardea, Aberdeen. Second, J. Wishart, Aberdeen. Third, A. Middleton. Very Highly Commended, J. I. Garden; J. Mitchell.

BELGIAN (Buff).—Cock.—First, A. Gemlo, Aberdeen. Second, A. Middleton. Third, A. Murray. Very Highly Commended, W. King. **HEN**.—First, J. Law, Aberdeen. Second, J. Mitchell. Third, W. Sirrell.

BELGIAN (Fleeced).—Cock.—First, J. Ross. Second and Third, A. Murray. Very Highly Commended, J. Nicoll, Aberdeen. Highly Commended, A. Middleton. **HEN**.—Very Highly Commended, J. Ross.

DUMFRIES AND MAXWELLTOWN ORNITHOLOGICAL SOCIETY'S EXHIBITION.

The seventh annual Exhibition of Canaries, Poultry, Pigeons, and Parrots, of the above Society was in the Mechanics' Hall, Irish Street, on the 2nd and 3rd inst. It was one of the finest shows of the kind ever held in the south of Scotland. In the number of entries, superior condition of the birds, their excellent quality, and admirable arrangement of the coops, &c., it exceeded all former competitions.

Such a display of fowls has never been witnessed in this district. Every bird was in splendid feather, and seemed a pattern of its kind, and the Judges must have had no light task in comparing the points of excellence in each, and making the awards. Of the different descriptions of Game fowls there was a large display, and the White and the Black specimens were beautiful birds. For Spanish fowls Mrs. Smith, Broomhills, stands unsurpassed, her fowls having gained the chief premiums in both classes. They were reared, we understand, from eggs furnished by Miss Smith, Braes. Dorkings were numerous, and the competition good; but there were few *Cochin-Chinas*. *Hamburghs*—Spangled and Pencilled, Golden and Silver, old and young—were well represented, and added greatly to the attractions of the Exhibition. Though the display of *Brahma Pootras* was not large, it included some fine birds. Mr. Miller, Bowes, Terregles, showed a pair of well-feathered Guinea-fowls. The competition among the *Bantams* was very keen, as the number shown was large, and the quality of the birds in general excellent. A better show of *Pigeons* we have never seen anywhere, and the varieties must have greatly surprised the generality of visitors, as there were no fewer than fifteen. Besides the more common breeds were Nuns, Trumpeters, Blue Brunswicks, Antwerp Carriers, Archangels, and Turtle Doves, all beautifully clean and in fine feather. There were few *Parrots* exhibited, and the only foreign birds competing were a Green Parrot, St. Helena Canary, and pair of Love Birds. The British birds shown were a Crossbill, Siskin, Redpole, Goldfinch, and Cock of the North. Mr. M'Cririe, Southern Counties' Asylum, had a fine aviary, in which was a happy family of Bullfinches, Goldfinches, Grey Linnets, Redpoles, Chaffinches, Green Linnets, Siskins, &c. The Judges' awards gave general satisfaction, but some were not satisfied, and we were sorry to see a Dumfries exhibitor so far forget himself as to break through all law and order by removing the coop containing his fowls. It was well for the success of the Exhibition that his example was not followed. The arrangements seemed to be perfect, and were highly creditable to Mr. Maxwell, Secretary, and the members of the Committee.

GAME (Black Reds, Blacks, and other Reds and Blues).—First and Silver Medal and Second, W. D. Dickson, Carron Croft. Commended, T. Maxwell, Maxwelltown. **CHICKENS**.—First, S. Lord, Lockerbie. Second, J. B. Lockerbie, Wallace town. Commended, J. Stobo, Jericho.

GAME (Duckwings, Whites, and other Greys).—First, A. M'Kie, Maxwelltown. Second, T. Henderson, Dumfries. Commended, S. M'Millan, Chickens.—First, T. Henderson. Second, J. B. Lockerbie. Commended, C. Turner, Dumfries.

SPANISH (Black).—First, Mrs. Smith, Broomhills. Second, J. Kerr, Brocklehurst. Commended, T. Maxwell, Allanton Mill. **CHICKENS**.—First and Silver Medal and Second, Mrs. Smith. Commended, R. M'Keazie. **DORKINGS**.—First and Silver Medal, W. F. H. Arndell, Barjarg Tower. Second, Miss M'Holm, Hillhead. Commended, J. Maxwell, Dalswinstou. **CHICKENS**.—First, Miss M'Holm. Second, Miss M. A. Johnstone, Terregles. Commended, J. Maxwell.

COCHIN-CHINA (any Colour).—Prize, Miss Biggar, Braes House. **CHICKENS**.—First, Mrs. Moffat, Kirtle Bridge. Second, Mrs. Waugh, Castlehill, Lochmaben.

HAMBURGH (Golden-spangled).—First, T. Mnsgrave, Longtown. Second, W. Currie, Maxwelltown. Commended, R. Murray, Maxwelltown. **CHICKENS**.—First and Silver Medal, Miss Biggar. Second, T. Mnsgrave. Commended, R. Kerr, Barjarg.

HAMBURGH (Golden-pencilled).—First, Mrs. Blacklock, Hutton Park, Lockerbie. Second, T. Johnstone, Waterside, Terregles. Commended, W. Stewart, Rashgill. **CHICKENS**.—First, W. Wallace, Kirkmahoe. Second, R. Smith, Greenbrae. Commended, J. Jardine, Maxwelltown.

HAMBURGH (Silver-spangled).—First, C. Inglis, Lockerbie. Second, Mrs. Crombie, St. Michael Street, Dumfries. Commended, T. Connel, Locharbriggs. **CHICKENS**.—First, R. Jardine, Moffat. Second, W. Currie. Commended, S. Boyes, Blairshinnock.

HAMBURGH (Silver-pencilled).—First, R. Young, Locharbriggs. Second, Miss Johnstone, Broadholm. **CHICKENS**.—First and Silver Medal, T. Mnsgrave. Second, W. C. Stewart, Kirkcudbright. Commended, E. Young.

BRAHMA POOTRA.—First, Mrs. Waugh. Second, Mrs. R. K. Howat, Mable. **CHICKENS**.—First, Mrs. Waugh. Second, Mrs. R. K. Howat. Commended, Mrs. R. K. Howat; Mrs. Waugh.

SCOTCH GRAYS.—Prize, C. Robertson, Eaglesham, Glasgow.

BANTAMS (Gold-laced).—First and Silver Medal, W. W. Anderson, Chapel, Moffat. Second, G. Smith, Dumfries. Commended, T. Wright.

BANTAMS (Black).—First, Mrs. Coupland, Dumfries. Second, J. Thomson, Maxwelltown. Commended, J. Irving, Dumfries.
BANTAMS (White).—First, J. Melbourne, Dumfries. Second, T. Maxwell. Commended, R. Tecuna, Dumfries.
GAME BANTAMS (Black Red and other Reds).—First, J. Douglas, Maxwelltown. Second, R. Brownrigg, Porterstown, Keir. Commended, J. Douglas.
GAME BANTAMS (Duckwing and other Greys).—First, J. Sharp, Canal Cottage, Johnston. Second, A. Mitchell, Hawick.
BANTAMS (Any other Variety).—Prize, J. Palmer, Maxwelltown.
DUCKS (Rouen).—First, J. Boyd, Southwick. Second, Miss M. J. Russell, Moffat. Commended, W. W. Anderson.

PIGEONS.

SHORTFACED TUMBLERS.—First, W. Currie. Second, R. Henderson, Maxwelltown.
COMMON TUMBLERS.—First, J. Sharp (Blue Beards). Second, R. Henderson.
CARRIERS.—First, R. Henderson. Second, J. Paterson, Dumfries.
POWTERS.—First, J. Sharp. Second, J. Thomson.
JACOBS.—First and Second, J. Sharp.
FANTAILS.—First, J. Sharp. Second, W. Greig, Elmbank.
COMMON PIGEONS.—First, W. Currie. Second, W. Howat, Dumfries.
ANY OTHER DISTINCT BREED.—First, J. Sharp (Blue Brauswicks). Second, A. Mitchell (Nuns).

CANARIES.

SCOTCH FANCY.—Yellow Cocks.—First and Silver Medal, J. Graham, Kilmarnock. Second, J. Thorpe, Dumfries. Third, J. Harding, Maxwelltown. **Hens.**—First, J. Thorpe. Second, J. Muir, Kilmarnock. Third, J. Graham. **Buff Cocks.**—First, J. Graham. Second, J. Muir. Third, J. Thorpe. **Hens.**—First and Third, J. Thorpe. Second, J. Little, Dumfries.
PIEBALD.—Yellow Cocks.—First and Silver Medal, J. Low, Beattock, Moffat. Second, J. Thorpe. Third, R. McCubbin, Annan. **Hens.**—First and Second, J. Thorpe. Third, R. Edgar, Maxwelltown. **Buff Cocks.**—First, J. Low. Second, J. Little. Third, R. McCubbin. **Hens.**—First, J. Low. Second, J. Little. Third, R. Edgar.
GOLDFINCH MULES.—Yellow.—First, J. Kirk, Dumfries. Second, J. Thorpe. Third, R. Davidson, Carlisle. **Buff.**—First and Third, R. Davidson. Second, W. Fleming, Holywood.
GOLDFINCHES.—First, J. Wilson, Dumfries. Second, J. Thorpe, Third, D. Coupland, Maxwelltown.

PARROT (Any colour).—Prize, Miss Brown, Dumfries.

FOREIGN BIRD (Any other variety).—Prize, J. Armstrong (Love Birds).
RAREST BRITISH BIRD (Any variety).—Prize, J. McCrie (Pair of Cocks of the North).

JUDGES.—For *Canaries and Parrots*: Mr. T. Huddow, Glasgow, and Mr. G. Crawford, Beith. *Poultry and Pigeons*: Mr. J. Paton, Stewarton, and Mr. R. Bailey, Carlisle.—(*Dumfries and Galloway Standard*).

KIRKCALDY POULTRY SHOW.

The annual Exhibition of the Fife and Kinross Ornithologia Society, was held in the Corn Exchange, Kirkealdy, on Monday and Tuesday, the 1st and 2nd inst., when the following prizes were awarded:—

DORINGS.—Chickens.—First and Third, J. Spalding, Leslie. Second, J. Stock, West Bridge. Highly Commended, T. Y. Craig. Cock Commended, J. Stocks.

COCHIN-CHINA.—Chickens.—First, Mrs. Oswald, Dunnikier. Second, T. Y. Craig.

SPANISH.—Chickens.—First, J. Macaully, Edinburgh. Second, A. Bates, Perth. Third, R. McGregor, Perth. Cock Commended, T. Knowles, jun., Aberdeen.

HAMBURGH (Spangled).—First, R. Stewart, Kelty. Second, A. Penman, Kelty by Blair Adam. Third, D. Bluelock, Dumfermline.

HAMBURGH (Pencilled).—First, A. Pratt, Kirkealdy. Second, J. Ness, Pathhead. Third, D. Kilgour, Crossgates. Highly Commended, D. Baird, East Weatys. Commended, J. Meiklejohn, Oakley.

GAME (Black and Brown Reds).—First, H. Goodall, Kirkealdy. Second, W. Donaldson, Raith. Third, A. Spalding, Raith. Commended, T. Y. Craig. **Chickens.**—First, H. Goodall. Second, R. Stewart, Kelty, by Blair Adam. Third, R. Hutchison, jun., Braehed. Highly Commended, J. Steedman, Kirkealdy. Commended, T. Baird, Anchtertool.

GAME (Grey, and others).—First and Second, P. Bernard, Leslie. Third, A. Spalding. **Chickens.**—First, T. Mathew, Leslie. Second, T. Williamson, Links. Third, J. Lyall, Links. Commended, W. Mitchell, Perth.

BANTAMS (Any variety).—First, R. McGregor. Second, D. Brown, Perth. Third, J. Speed, Leslie. Commended, W. Foote, Kirkforth; A. Haggart.

ANY OTHER BREED.—First and Second, Countess de Flahault, Tullyalan Castle (Crève Cœur and Silver Poland). Third, Mrs. Roddick, Aberdeen (Brahma). Highly Commended, J. Middleton, Clayholes, Dysart (Silkies). Commended, Countess de Flahault (Buff Poland).

SELLING CLASS (Any Breed).—First, J. Stocks (Dorking). Second, E. Stewart. Third, J. Taylor, Tillochburgh (Dorkings). Highly Commended, G. Paul (Golden-pencilled Hamburgs).

SINGLE COCKS.

GAME (Any variety).—First, C. Jamieson, Forfar. Second, R. Stewart. Third, J. Gilmour, Milton Balgonie. Highly Commended, D. Brown, Perth; A. Spalding.

COCHIN (Any variety).—First, Mrs. Oswald. Second, Lord Loughborough. Third, T. Y. Craig. Commended, Mrs. Oswald.

HAMBURGH (Any variety).—First and Third, A. Pratt. Second, D. Penman, Boreland. Highly Commended, J. Ness, Pathhead; G. Paul.

BANTAM (Any variety).—First, R. McGregor. Second, A. Mills, Kirkealdy. Third, D. Brown.

PIGEONS.

TUMBLERS.—First, J. E. Spence, Musselburgh. Second, R. Robertson, Kirkealdy.

FANTAILS.—First, J. E. Spence. Second, A. Crosbie, Melrose. Highly Commended, T. Couper, Carstairs.

ANY OTHER VARIETY.—First, H. Spence (Moaly Powters). Second, T. Couper (Nuns). Highly Commended, A. Mills (Powters). Commended, A. Spalding (Nuns).

CANARIES.

SCOTCH FANCY (Yellow Cocks).—First, R. Hunter, Oakley. Second, W. Bonthron, Kirkealdy. Third, J. Tweedie, Kalty.

BUFF COCKS.—First, W. Bonthron. Second, G. Bluney, Perth. Third, J. Kerr, New Scene, Perth.

YELLOW HENS.—First, W. Bonthron. Second, J. Smith, Dundee. Third, J. McGregor, Dundee.

BUFF HENS.—First and Third, G. Bluney. Second, J. Stevenson, Dundee.

BELGIAN FANCY (Yellow Cocks).—First, S. Crawshaw, Lochec. Second, T. Kerr. Third, T. Hay, Dundee.

BUFF COCKS.—First, T. Kerr. Second, G. Laidlaw, Galashiels. Third, W. King, Dundee.

YELLOW HENS.—First, T. Kerr. Second, W. Bonthron. Third, G. Laidlaw.

BUFF HENS.—First and Third, S. Crawshaw. Second, W. Tinline, Galashiels.

FLECKED (Yellow Cocks).—First, D. McDonald. Second, J. Smith. Third, W. Halkerston, Dundee.

BUFF COCKS.—First, J. Smith. Second, R. Hunter. Third, J. Ford, Freuchie.

YELLOW HENS.—First, A. Chalmers, Woodside. Second, R. Hunter. Third, W. Ronthron.

BUFF HENS.—First, J. Kerr. Second, J. Smith. Third, A. Clark, St. Clairtown.

MARKED GOLDFINCH MULES (Yellow Cocks).—First, J. Robertson, Aberdeen. Second and Third, W. Kirk.

BUFF COCKS.—First, W. Kirk. Second, A. Fleming, Dysart. Third, T. Marshall, Pathhead.

SELLING CLASS (Any variety).—First, Second, and Third, Mrs. Wilson.

JUDGES.—Poultry and Pigeons: Mr. John Ridpath, Edinburgh; *Canaries:* Mr. John Mitchell, Perth; Mr. Robert McClelland, Dundee; Mr. Alexander Hope, Kirkealdy.

CORK AND SOUTH OF IRELAND POULTRY SHOW.

The sixth annual Exhibition of this Association was held in the Athenaeum, Cork, on Wednesday and Thursday, the 3rd and 4th inst. The following is the prize list:—

SPANISH.—First, B. W. Boyle, Dundrum, Co. Dublin. Second, R. P. Williams, Dublin. Commended, R. P. Williams; J. W. Dyas, Blackrock; Miss L. Pike, Besborough, Cork. **Chickens.**—First, R. W. Boyle. Second, Mrs. Dring, Rockgrove. Highly Commended, J. C. Cooper; R. P. Williams. Commended, R. P. Williams; J. W. Dyas; H. L. Tivy.

DORINGS (Coloured).—First, R. P. Williams. Second, Mrs. Dring. Highly Commended, T. O'Grady, Rouagrove, Bandon. Commended, T. O'Grady.

DORKING (Silver-Grey).—First and Second, T. O'Grady.

DORINGS (White).—Prize, J. C. Perry.

DORINGS (Coloured or White).—First, Mrs. Dring. Second, Mrs. Webb, Knocktron, Knocklong. Highly Commended, T. O'Grady.

DORINGS (Silver-Grey).—First and Second, T. O'Grady. Highly Commended, Mrs. H. Brown.

COCHIN-CHINAS (Buff or Lemon).—First, R. W. Boyle. Second, F. W. Zurhorst, Donybrook, Dublin. Commended, Mrs. Hay.

COCHIN-CHINA (Partridge or Grouse).—First, J. C. Cooper. Second, Mrs. Dring.

COCHIN-CHINA (White).—First, Miss L. Pike. Second, F. W. Zurhorst. Highly Commended, F. W. Zurhorst. Commended, J. C. Perry.

BRAMA-POOTRAS.—First and Second, R. W. Boyle. Highly Commended, J. Byrne; J. C. Perry. Commended, Hon. Mrs. H. B. Bernard, Coolmaine, Bandon.

CREVE-CŒURS.—First, J. C. Cooper. Second, F. W. Zurhorst. Commended, Countess of Bandon, Castle Bernard; J. C. Perry.

GAME (Black or Brown Reds).—First, J. C. Perry. Second, R. W. Boyle. **Chickens.**—First, J. Jeffrys. Second, G. Langtry.

GAME (Duckwings or Files).—First, R. W. Boyle. Second, J. C. Perry. **Chickens.**—First, W. D. Allyn. Second, J. C. Perry.

POLANDS (White-crested).—First and Second, J. C. Perry.

POLANDS (Silver).—First, Second, and Commended, R. P. Williams.

POLANDS (Golden).—First and Second, R. P. Williams.

HAMBURGS (Golden).—First, R. W. Boyle. Second, C. H. Cooper. Highly Commended, Mrs. Dring.

HAMBURGS (Silver).—First, Mrs. H. E. Bernard. Highly Commended, J. C. Perry.

BANTAMS (Sebright).—First, J. A. Fitzpatrick, Cork. Second, Hon. Mrs. Bernard.

GAME BANTAMS.—First, J. Dowling, jun. Second, J. A. Fitzpatrick. Commended, J. A. Fitzpatrick; N. W. Roche; F. Hodder, Cork.

JAPANESE SILKIES.—First, J. A. Fitzpatrick. Second, F. Hodder.

ANY OTHER VARIETY.—First and Second, J. C. Cooper (La Fleche and Malay). Highly Commended, F. W. Zurhorst (Sultans). Commended, Mrs. Dring (La Fleche); J. C. Perry (La Fleche).

TURKEYS.—First, J. C. Cooper. Second, F. W. Zurhorst. Highly Commended, T. O'Grady. **Poult.**—First, J. C. Cooper. Second, T. O'Grady. Highly Commended, R. Briscoe, Fermoy.

GESE.—First, R. W. Boyle. Second, J. C. Cooper. Highly Commended, J. C. Cooper; Countess of Bandon. **Goslings.**—First, Miss Deedle. Second, J. C. Perry.

DUCKS (Aylesbury).—First, R. P. Williams. Second, J. C. Cooper. Highly Commended, R. P. Williams. **Ducklings.**—First and Second, R. P. Williams. Highly Commended, Countess of Bandon.

DUCKS (Rouen).—First, N. D. Parker, M.D., Cork. Second, R. P. Williams. Highly Commended, J. C. Cooper. **Facklines.**—First, W. H. Massey. Second, R. W. Boyle. Highly Commended, R. P. Williams.

ANY OTHER VARIETY.—First and Second, Countess of Bandon (Mexican and Muscovy).

SPECIAL PRIZES (open for competition to subscribing members only).—Silver Cup (presented by F. W. Zurhorst, Esq.), R. P. Williams. The

Perry Medal, J. W. Dyas (Spanish). Mrs. Lyon's Medal, J. C. Perry (Spangled Hamburgs). Mrs. Harvey's Medal, T. O'Grady (Dorkings).

SWEEPSTAKES.

DORKING PULLETS.—Prize, J. C. Cooper. Highly Commended, J. C. Cooper.

SPANISH PULLETS.—Prize, Mrs. Dring. Highly Commended, J. C. Cooper.

PIGEONS.

POWTERS (Yellow Pied).—First, J. Montgomery. Second, Dr. Harvey. **POWTERS (Black Pied).**—First, J. H. Perrott. Second and Highly Commended, J. Montgomery.

POWTERS (Blue or Silver Pied).—First, J. Montgomery. Second, J. H. Perrott. Highly Commended, J. H. Perrott. Commended, J. Muir. Dr. Harvey; A. E. Ussher.

POWTERS (Red Pied, Mealy, or other Colour).—First and Second, J. Montgomery. Highly Commended, Rev. T. Townsend; J. H. Perrott. Commended, A. W. Shaw.

POWTERS (White).—First, J. Montgomery. Second and Highly Commended, J. H. Perrott.

CARRIERS (Black).—First and Second, G. A. Wherland. Highly Commended, R. W. Shaw; Dr. Harvey. Commended, C. A. Wherland; H. L. Tivy; R. Fulton.

CARRIERS (Dun).—First, Dr. Harvey. Second, G. A. Wherland. Highly Commended, R. Lane; G. A. Wherland. Commended, T. Clarke; J. Muir. **CARRIERS (Blue or other).**—First and Second, G. A. Wherland.

ALMOND TUMBLERS (Short-faced).—First, Second, and Commended, A. W. Shaw.

TUMBLERS (Short-faced Almond).—First and Second, Dr. Harvey. Commended, J. B. Ellenrassett; J. Lloyd.

TUMBLERS (Short-faced Mottles and others).—First, A. W. Shaw, Lime-riek (Black Mottles). Second, R. Fulton, Deptford, London. Highly Commended, R. Lane, Cork (Black Mottles).

TUMBLERS (Short-faced Balds or Beards).—First, Dr. Harvey (Blue Balds). Second, A. W. Shaw (Blue Beards). Highly Commended, Dr. Harvey (Blue Bald).

TUMBLERS (Common Balds or Beards).—First and Second, A. W. Shaw (Black Balds and Blue Beards). Highly Commended, J. Dowling, Black-rock (Yellow Balds).

TUMBLERS (Common, any other colour).—First, J. Pike, Besborough, Cork. Second, R. Lane (Black Mottled).

BARBS (Black or Dun).—First and Second, G. A. Wherland. Highly Commended, J. H. Perrott, Hayfield, Cork; A. E. Ussher, Campshire, Coppoquin.

BARBS (Any other colour).—First, G. A. Wherland (Red). Second, J. H. Perrott (Red). Highly Commended, G. A. Wherland; J. H. Perrott (Yellow).

JACOBS (Red or Yellow).—First, J. Lloyd. Second, J. Pike. Commended, G. A. Wherland.

JACOBS (Any other colour).—First, J. Perry (Mottled). Second, T. Clarke, Cork (Mottled).

FANTAILS (White).—First, J. H. Perrott. Second, T. O'Grady, Rough-grove, Bandon. Highly Commended, G. A. Wherland. Commended, T. Clarke; J. Pike.

FANTAILS (Any other colour).—First and Second, J. Pike (Blue). **OWLS (Blue or Silver).**—First, A. E. Ussher. Second, J. H. Perrott. Highly Commended, A. E. Ussher.

OWLS (Any other colour).—Prize, J. Pike (Yellow). **TRUMPETERS (Mottles).**—First and Second, J. H. Perrott.

TRUMPETERS (Any other colour).—First, J. Perry (White). Second, T. O'Grady (White). **TURBETS.**—First, T. O'Grady. Second, J. Dowling. Commended, Rev. T. Townsend, Bandon.

NUNS.—First, J. Dowling. Second, A. E. Ussher. **MAUPRES.**—First, Rev. T. Townsend. Second, E. M. Roys, Rochdale.

ANY OTHER VARIETY.—First, J. Perrott (Brunswicks). Second, Dr. Harvey (Brunner Powters, White). Highly Commended, Dr. Harvey (Brunner Powters, Black).

SWEEPSTAKES for Pigeons, hatched in 1865, and bred by Exhibitor.

POWTER (Any colour).—Prize, J. Montgomery, Belfast (Black). Highly Commended, J. Montgomery; Dr. Harvey (Red). Commended, R. Fulton.

CARRIER (Black).—First, R. Lane, Cork. Highly Commended, G. A. Wherland, Cork. Commended, J. Muir, Glasgow.

CARRIER (Dun).—First, Dr. Harvey. Highly Commended, J. Muir.

SPECIAL PRIZES FOR PIGEONS.—Silver Cup (presented by the Society), G. A. Wherland. Silver Medal (presented by Patrick Goulding, Esq.), G. A. Wherland (Black Carriers). Commended R. Lane. Silver Medal (presented by G. A. Wherland, Esq.), J. Montgomery (Red Powters). Commended, J. H. Perrott (Black Powters). Silver Medal (presented by Henry Hawkins, Esq., Belfast), Medal and Commended, G. A. Wherland (Black Barbs).

SONG BIRDS.

CANARIES (Yellow).—First, A. Veitch. Equal First and Second, F. M'Loughlin.

CANARIES (Green).—Prize, H. Keating.

MEALY (Any other colour).—Second, A. Veitch (Buff Pied).

GOLDFINCH MULES.—First, J. Fitzgerald. Second, H. Keating.

BLACKBIRDS.—First, J. Fitzgerald. Second, J. Perry.

THRUSHES.—First and Second, W. Waters.

SKYLARKS.—First, J. Lennie. Second, R. Daly.

BULLFINCHES.—First, J. Dowling, jun. Second, H. Keating.

GOLDFINCHES.—First, H. Keating. Second, J. Fitzgerald.

LINNETS.—First and Second, J. Dowling.

TRIMMING COMBS—VULTURE HOCKS IN COCHIN-CHINA.

I SHOULD be very glad of a reliable opinion on the subject of one or two of the points of Cochins. My birds seldom breed a cockerel without a side sprig to his comb. Is this considered

by Judges to be a very serious defect in the case of a bird whose other points are good? To take a particular example: I have a Buff cockerel over 11 lbs. in weight. His only defect is that the last serration but one of his comb has the appearance of being split down the middle, making two sprigs instead of one, and both slightly leaning on opposite sides. I know that it is a custom of dealers to cut off a side sprig while the bird is young, and that, after the comb has been developed, this in most instances cannot be detected; but is this, I am assured general, practice considered fair and straightforward?

Another point on which I should be glad of further information is that of vulture hocks. Many birds have a slight apparent tendency to this fault, in which I do not think that it should be considered a serious defect—I mean where the feathers behind the knee, though quite fluffy and soft, are slightly pointed, but without projecting stiffly and beyond the other leg feathers? Indeed, are not almost all birds with very heavily feathered legs subject to this drawback? This, too, is a case where, I am told, birds are trimmed every day beyond the possibility of detection. Is it not, therefore, a pity that so great a stress is beginning to be laid on a point which, except in the case of the objectionable stiff feathers, is rather an exuberance than a defect, and which may be so very easily removed by trimming?—CLERICUS.

[It is a very common practice to trim slightly the combs of Cochins and Spanish. In both breeds any approach to double comb is a disqualification, and the suspicion of it is therefore avoided. The practice is not confined to dealers, but is common, we believe, to all. It is not considered unfair, but in deciding between two birds of equal merit the trimmed comb would turn the scale against its possessor. A razor or very sharp knife is used for the operation, and the "sprig" should be removed by cutting downwards. This leaves little trace, but a practised eye can always detect it. Vulture hocks are only recent introductions into the Cochins, and should be discouraged. Detection is easy if the feathers are cut off, difficult if they are pulled out. Careless breeding has introduced these faults. Birds have been selected for the sake of new blood, and for the introduction of some point in which they excelled, but which also possessed a failing. Both have been inherited, and sufficient pains have not been taken to breed out the fault. A pen with very moderate beauties, but without one real fault, must be successful over another of great excellence, but with an admitted fault.]

[The foregoing is from the pen of one of our most able poultry Judges, and we will only add a few words on the subject of vulture hocks. We had Buff Cochin-China fowls with these hocks as long since as 1850. They were from Mr. Sturgeon's stock. The Poultry Club, in its standard, says the vulture hock is objectionable, but not a disqualification. We cannot assent to its being objectionable, for we consider that it adds to the good figure of the bird. This is a matter of taste. If poultry fanciers agree in reprobating vulture hocks, breeders have no alternative—they must aim at producing birds without them.—Eds.]

FOUL BROOD.

I HAVE delayed writing on this subject until I could give a full account of the results of the summer's experience. I will now describe what has taken place in my own and my neighbour's apiary.

In October, 1864, No. 187, was detailed the means which my neighbour took to free his hives from the disease, by beating out the bees into clean skeps, and the result has been, that not a single diseased cell has since been seen in all his stock of fourteen hives. In order to ascertain if honey from diseased stocks given to a young hive would be the means of causing the disease, after the other hives were sent away to the heather he kept a young hive at home, and found an eke below it containing a quantity of foul brood and honey, which was cleaned out in two days, when it was removed. He also gave the same hive five skeps to clean out, one after the other, all having foul brood and honey. That same hive gave off its first swarm this year on the 4th of June, and as yet all the other swarms it sent off, as well as the old one, are free from foul brood. This case is so different from that of some of your correspondents, that it adds to the mystery of the cause of foul brood, and how it may be cured.

While my neighbour has succeeded in entirely freeing his apiary from this disease after having it so long, I have now to

report that I found it in two of my hives after they had come from the heather. It was only in one bar of each, and about half the size of a man's hand. I allowed it to remain to see if it would extend further, or to see if the bees could clean it out of the cells. I examined them on the 14th of December, and found that all the cells were cleaned out with the exception of eight or nine, and these were in progress of being cleaned out also. I found a large quantity of brood in all stages in the hive, and all in good health. I have never known a hive of mine breeding in December before. The queen is the Ligurian which Mr. Woodbury sent in a small box in 1863.

I cannot account for the disease being in these two hives, while I have other twenty entirely free from it, all being treated alike. It had occurred to us that it was possible that a hive might be overheated during its removal to the heather from want of sufficient ventilation, but the hive to which I allude was not sent to the heather, as I was not disposed to risk it on such a rough journey.

I had a case during the summer which I thought at one time would go far to prove that Mr. Lowe was right in regard to chill being the cause of the disease, and that those, along with myself, who hold a different opinion, would require to acknowledge their mistake. For myself I can truly say that none would have been more ready to have done so had such been the case.

In order to observe the whole proceedings in the interior of the hive, I had one made with glass sides, and only one comb in breadth, so that both sides of the comb could be seen at all times. It was made to contain four Woodbury bar-frames, which can be removed, and others substituted in their place, when required. During a hot day in the summer, while trying to put some combs straight which the bees were not building properly, two of them broke down, and the queen was killed, although I was not aware of it. Two-thirds of the bees left at the time, and a quantity of honey was taken by the other hives, but one-third of the bees remained with the brood, and were rearing three young queens, when I removed the four bars into my observatory hive. Two of these bars had a large quantity of brood in all stages, the other two had only a few in each. There were just as many bees as covered the two bars, and about one hundred bees remained with the young brood on the other two, but they were unable to keep up the heat, so that the grubs died, and all turned black, the bees leaving them entirely. Here, thought I, it is where Mr. Lowe was right, and myself wrong, and I was about to write and admit it, but deferred until I saw the result. When a queen was hatched, and laying eggs, as the young bees filled the hive they began and cleaned out all the dead black grubs, leaving the cells as clean as ever they were; but although that brood remained in the cells six or seven weeks after death, it never passed into corruption like diseased brood: so that I am more than ever convinced, that whatever foul brood may be, it is something more than a chill to the young brood, and that by removing the combs of foul brood as it appears, and putting the bees into clean hives, it can be mastered. It is only by good sanitary measures, carried out thoroughly with bees, as well as with everything else of the animal kingdom, that we can ever expect them to thrive.—ALEX. SIEBNER, *Yester Garden.*

[Your neighbour's experiment proves the truth of Dzierzon's statement, that honey taken from foul-breeding stocks may be given with impunity to healthy colonies in the autumn, because during winter it is in the absence of brood all consumed by adult bees. For the same reason simple excision at that season may, and sometimes does, work a radical cure; and it appears even possible that, favoured by the cessation of breeding, the bees themselves may, unaided, work their own salvation in cases wherein the disease, being recent, has not progressed to the virulent stage.—A DEVONSHIRE BEE-KEEPER.]

DYSENTERY IN BEES—LIGURIANS.

I AM, or I think I may say we are, much obliged to the "DEVONSHIRE BEE-KEEPER" for his able article on dysentery, and I think Dzierzon is correct in many of his reasons for it; but I do not fancy that the hives have anything to do with it, or feeding late, as I had five straw skeps, and all were fed nearly alike, but only one suffered from this disease. I shall be glad to hear from others of your correspondents upon this subject.

Two of my Ligurian stocks have turned out crossed with

black drones, although they have Ligurian queens. Will there be any risk, by keeping them among the others, of their drones crossing with the true Ligurians again, and making them hybrids?—A. W.

[If the queens themselves are really pure bred, they will breed pure Italian drones (but mixed workers) in spite of the first cross.]

CROWN-BOARDS.

WOULD a wooden frame 1½ inch thick and 2½ inches broad, filled inside with straw bands and sewed with cane, be more suitable for the tops of Woodbury hives than wood tops?—I. T.

[Straw crown-boards (if the misnomer may be allowed) made in the manner you describe, would, we think, be better than the ordinary wooden ones.]

OUR LETTER BOX.

WEIGHT OF DORKING COCKS (*Constant Reader*).—"Upwards" certainly means "above" 10 lbs.

DORKING COCK'S COMB (*Château Fallon*).—The two combs, hollow in the middle, but joining at the points, form what is called a cup comb. It was very common of old, and is so now in the poultry districts. It was not fashionable, and was therefore discouraged at exhibitions. It is not only no disqualification, but occurs in birds as pure bred as any having single or double combs.

PEA FOWLS (*S. D.*).—Pea fowls are always considered destructive in a garden.

INCUBATOR (*Tycho*).—The incubator we have spoken of lately is not yet advertised.

SHIFTING FOWLS (*F. E.*).—We do not think your fowls would be injured by being removed in a basket every night, but we would suggest straw at the bottom instead of paper. The plumage may be washed with soap and water, put on and wiped off with a sponge. The outer part only of the feather wants washing; and when it is clean the bird should be put in a basket with clean hay or straw, and placed before the fire till quite dry. Some use soda, but it is found to be injurious to the feather.

SPANISH COCK'S COMB FALLING OVER (*Spanish*).—Alteration in diet will sometimes have an effect upon the combs. Old fanciers used white peas for the purpose; they are said to harden plumage and comb. It is more often the result of breed. Some are more prone to fall over than others. We would never breed from such.

COCHIN-CHINA FOWLS DEFICIENT IN SIZE (*Norice*).—Chickens to be large must be well fed when young, but over-feeding is no advantage to a fowl at any age. When, however, you say all take their luck together, what luck is it? Do they live in a farm yard? Have they means of obtaining any other food than that given to them by hand? We advise you to keep all together, and to feed well, then to select the best for exhibition. Staked meal morning and evening, whole corn at mid-day, grass, lettuce, table and kitchen scraps, constitute good feeding.

BANTAM HEN (*M. S.*).—She is overfed. The soft egg, &c., are evidence of over-fatness. Feed her by herself very moderately; chiefly boiled potatoes and plenty of lettuce leaves.

DORKING COCK'S WING BROWN (*J. H. Tring*).—No colour can disqualify the bird you mention unless be were black or white. The dark brown on the wing is not even a disadvantage. Dorkings have no special colour unless they are shown as Silver-Greys.

"C. E.'s" letter is received, and will be noticed next week. This and some other subjects are unavoidably postponed till our next Number.

AUSTRALIAN GRASS PARROQUET PANTING (*A. M. F.*).—The panting of your bird arises from its being too fat. We would recommend you to withdraw the maw seed, it is too stimulating and binding, and let it have Canary and a small quantity of millet; scald some oats for about twenty minutes, and let it have a few, also a few not scalded, and a turf of the longest grass you can obtain; try also a little soaked bread and milk.

CLEANING FLOOR-BOARDS (*J. R. B.*).—Your stock being well provisioned and populous was the reason of so many bees congregating on the floor-board, and in such a case there was little need to disturb them, so stung a colony being well able to deal with impurities as they arise. The middle of a fine day is the best time for changing floor-boards, as well as for performing most apiarian operations, and your mode of proceeding was a very good one.

BEE-POOD (*Prospere*).—We find lump sugar dissolved in water, in the proportion of three parts (by weight) of sugar to two of water, and boiled a minute or two, an admirable substitute for honey in feeding bees. "Fruit Gardening for the Many" can be had free by post from our office for five postage stamps. It contains directions for peach-pruning.

POULTRY MARKET, — JANUARY 8.

THERE is a good supply of poultry, and a fair demand. Pheasants are very plentiful, and sell badly.

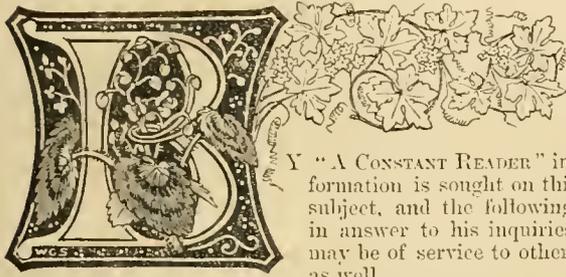
	s.	d.	s.	d.		s.	d.	s.	d.	
Large Fowls	3	6	to	4	0	Grouse	0	0	2	4
Smaller do.	2	6		3	0	Partridges	2	0	2	6
Chickens	1	9		2	0	Hares	3	0	3	6
Geese	6	0		6	0	Rabbits	1	4	1	5
Ducks	0	0		0	0	Wild do.	0	9	0	10
Pheasants	2	0		2	6	Pigeons	0	10	1	0

WEEKLY CALENDAR.

Day of Month	Day of Week	JANUARY 16—22, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	h.	
16	Tr	Epacris.	41.6	39.7	36.2	19	1	af	8	19	af	4	13	af	7	28	4	
17	W	Erica byemalis.	42.6	39.8	36.7	13	0	8	21	4	51	7	35	5	1	19	25	17
18	Th	Erica Willmoreana.	41.7	31.4	35.6	16	59	7	22	4	26	8	40	6	2	10	44	18
19	F	Fuchsia Dominicana.	43.1	30.7	36.9	18	58	7	24	4	55	8	2	8	3	11	3	19
20	S	Sun's declination 20° 6' S.	42.6	31.3	36.9	15	57	7	26	4	22	9	17	9	4	11	21	20
21	SUN	3 SUNDAY AFTER EPIPHANY.	43.8	32.8	38.3	18	56	7	27	4	49	9	32	10	5	11	18	21
22	M	Gastrolobium acutum.	44.3	32.8	38.6	16	55	7	29	4	19	10	48	11	6	11	54	22

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 42.8°; and its night temperature 31.5°. The greatest heat was 60°, on the 19th, 1823; and the lowest cold 41° below zero, on the 19th, 1838. The greatest fall of rain was 0.85 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

ACHIMENES CULTURE.



Y "A CONSTANT READER" information is sought on this subject, and the following, in answer to his inquiries, may be of service to others as well.

The Achimenes is a plant easily cultivated, and, though requiring a higher temperature than that of a greenhouse, will, nevertheless, do well there after June, when, for the most part, there is a deficiency of blooming plants in such structures. Achimenes also succeed well in a heated vinery.

Early in February the bulbs are taken out of the pots in which they have been grown the season before, and are laid pretty thickly on the surface of a pan filled to within an inch of the rim with a compost of two-thirds light turfy loam, and one-third leaf mould. They are then covered with half an inch of fine soil. If the soil is in a moderately moist state no water is given, but if dry a little is afforded to bring it into a moist condition. The pans are then placed in a hotbed of about 75°, and a top heat of 60° or 65° by night. Here they remain until the shoots are an inch long, when the plants are placed in their blooming pans.

Achimenes never look so well as when grown in pans. The sizes which I think most eligible are 12 and 18 inches in diameter, and 8 inches deep. The first size allows of nice specimens being grown, and the second of very fine ones. The pans should be clean, and have good-sized crocks placed over the holes, which should be five in number, and not less than half an inch in diameter. Above these crocks lay an inch of broken pots, then an inch of the riddings of the compost, and fill up to within an inch of the rim with a compost of two-thirds loam from rotted turves a year old, cut 3 inches thick, placed in alternate layers with fresh horsedung, turned over twice, and, previous to use, chopped fine with a spade, but not sifted; one-third leaf mould, three parts reduced, sifted to free it of sticks, &c., and well mixed with the loam; and one-sixth of silver sand. The plants are then taken up with a stick, and a row of the smallest placed around the pan half an inch from the rim, and exactly an inch apart; put in another row 1½ inch from the first, and an inch apart, and so on to the centre of the pan, which should be a little higher than the sides, say an inch for an 18-inch pan. The smallest plants are put at the outside, the next largest in the next row, and so in order to the largest in the centre. A gentle watering is then given, and the pans are placed in a house with a moist atmosphere (as that of a vinery at work), and with a night temperature of 60°, bearing in mind that the nearer the plants are to the glass and light the stronger they will grow, and, unless they are

stiff and strong, it is vain to expect a good bloom. Water sufficiently to keep the soil moist, but do not deluge them, nor, on the other hand, allow them to suffer for want of it. Never give water unless they seem in want of it; the leaves are not to be allowed to flag, but when the soil appears dry, and is so to the feel, give a good watering. Gently syringing with water of the temperature of the house will be of advantage up to the time of the blooms expanding, but avoid syringing in dull weather, and let the leaves be dry before the sun shines powerfully upon them, otherwise they may spot. If drip from the roof fall upon the pan, either stop the leak or remove the pan at once. Should green fly make its appearance, fumigate with tobacco when the plants are dry. Thrips will not interfere, unless the atmosphere is much too dry; if they do, tobacco smoke will destroy them.

When the plants are from 3 to 6 inches in height they will need tying; the sticks should be small and neat, made of laths, and painted green. They ought to be not less than 18 inches long, whilst for some kinds 2 feet will be better. A space of an inch or so was left below the rim at the time of potting; this should now be filled up with a mixture of equal quantities of the previous compost, passed through a half-inch sieve, and coddung one year old beaten and also passed through the sieve, with the addition of one-sixth of silver sand well mixed in. This, placed upon the surface between the plants to a depth of three-quarters of an inch or an inch, will, after a time, show its effects in the strength of the plants and the bloom. Commencing with the centre, one stake is to be put to each plant, and the plant loosely fastened to it in an erect position with a thin strip of bast matting. Continue the upright staking until the second row from the rim is reached, then every alternate plant of that row should be staked upright, and the others inclined from the perpendicular towards the rim of the pan. Every second plant in the outer row should be staked with an inclination corresponding to those staked upright in the second row, and at an angle of 45° from the perpendicular of the pans rim. Side shoots will be produced; do not tie them, but let them grow loosely, but, if they become as strong as the main shoots, and are straggling, they should be staked. Continue to keep the shoots tied up as they grow, and, when the buds show, every alternate watering may be of weak liquid manure until the plants are fairly in bloom, when they require a plentiful supply of water.

The plants will be in bloom in the end of June and in July; those in 18-inch pans will be fine masses of bloom from 12 to 18 inches high, and from 2 feet to 2½ feet through. Their beauty will be prolonged by placing them in a drier and cooler atmosphere, where they can be slightly shaded, as in a greenhouse or conservatory not highly ventilated. When the bloom is over they should still have a light situation, and the supply of water ought to be diminished, and, when the foliage becomes brown, it may be cut away, and the pans placed on a damp floor in a dry place, as under the shelves of a house, having a temperature of not less than 40° nor exceeding 45° from fire heat.

At their let may be started in March, kept in a hotbed for a time until they have grown and are potted off, and then removed to ainery or other house until they flower. They will do well in the greenhouse whilst in bloom, and even grow there after June, if the house be closed early, and be converted for the time into a stove by husbanding sun heat. Plants started in March will bloom in July and August; those started in April will do so in August and September. Plants allowed to start of their own accord in vineries, having a little fire heat in spring, will mostly bloom in September; whilst those in a late vinery will just be coming into bloom in the end of September. Plants started at the end of May or early in June bloom freely in the stove in October and November.

Aeloniens are stove plants, and require to be started in a hotbed in order to do at all well in a greenhouse, to which they need not be removed until they are of a size fit for blooming.

Some have a practice of taking the bulbs out of the pot in winter and storing them away in paper; they shrivel, however, and though it is not well to keep them wet, they certainly are best kept in the soil in which they grew, and if the pots are placed on a damp floor the bulbs will turn out in spring plump, though the soil may be like dust. Another common practice is to thrust the plants after blooming under the staves, which is of all times that at which they require light and a diminished supply of water to mature the bulbs.

A dozen of the best kinds of which I have experience are:—
Carl Welfarth.—Crimson purple with carmine spots, close habit. Very free bloomer.

Lord Pemberton.—Flowers large, blue. A profuse bloomer; grows rather tall.

Mato.—Crimson scarlet, and yellow-spotted eye. Fine.
Scopium.—Vermilion, richly marked; habit good, pyramidal.
Sir Tremaine Thomas.—Bright crimson, rather tall. Good.
Mauve Perfection.—Of a mauve tint. Free-blooming and good.

Marquette.—White. The best of its colour.
Duzzel.—Flowers of medium size, scarlet; dwarf habit.
Igneus.—Flowers small, of the brightest scarlet, produced in great profusion; habit good.

Amorée Verschaffelt.—Lilac white, violet lines, and carmine spots. Good in every respect.
Carminata elegans.—Rosy carmine, of fine form. A free bloomer.

Baumanni hirsuta.—Violet purple, good habit, free bloomer.
—G. A. Dy.

CONSEQUENCES OF LIGHTING A CONSERVATORY BY GAS.

I HAVE the care of a newly erected conservatory, 60 feet long, 20 wide, and 18 feet high; it has a table stage along the front and one end, beds down the centre, and along the back wall. It has been filled and planted about two months, and everything looked very well till last week, when, as my employer was going to have a large party, he wished to have it lighted with gas. I told him I had heard that gas was very injurious to plants; but he thought if it were placed nearly up to the roof, and there was a chimney to carry off the fumes, it could not do them much harm, as it would be nearly 15 feet above them. He accordingly had two sun-lights, consisting of fifteen burners each, fixed. They were alight three nights, two while the workmen were there, and on the night of the party. On entering the conservatory the following morning I was perfectly astonished—in fact, almost ready to shut the door and run away. The plants looked miserable; everything seemed parched and looked as dry as if it had not been watered for a month. Geranium leaves were yellow; Solanum capsicastrum, and *Acacia dealbata*, pubescens, and grandis, with scarcely a leaf on them; the Camellias had dropped nearly all their flower-buds; and the foliage of other plants, though still looking green, came off at the slightest touch.

Is the gas, do you think, to blame for all this mischief? My master does not seem at all satisfied about it. He thinks I neglected to water the plants; but that is not the case, as I watered them the day before the gas was lighted, and I know they were quite as wet as plants should be at this time of year. In the event of gas being used again, do you think it would be advisable for me to well water and syringe the plants in the afternoon, and leave the ventilators in the roof wide open?—J. A.

We have little doubt that the gas did the mischief, owing

to some defect in the chimney used to carry off the fumes. We know of several houses that are lighted at night on festival occasions; but the gas-burners are placed near the apex of the roof, and there are small narrow ventilators all the way, which, even if opened a little, allow the fumes of the burned gas and the heated air to escape. It would be well to have the plants sufficiently watered, not overwatered, before using gas again; but our experience would not enable us to judge as to the propriety of syringing the plants all over before lighting the gas. At first sight it would seem that the moisture on the leaves would keep the gas from injuring them; but then we know that even when tobacco smoke is applied to some plants when the foliage is wet the plants will be more injured than the insects, whilst to destroy the insects and not hurt the plants the foliage can scarcely be too dry. We shall be obliged if any of our readers will state their experience as to wet and dry foliage when exposed to gas fumes. The true remedy we suspect to be a free escape of heated air and fumes to the open air.

THE PUBLIC GARDENS OF PARIS.

HORTICULTURE, as undertaken by the civic authorities of Paris, has become considerably extended since the public department of "Promenades et Plantations" was established in 1858 under M. Alphand, the chief engineer of "Roads and Bridges." In fact, to this beginning is in a great measure to be ascribed the recent spread of ornamental gardening in all parts of France; and the good example set by the gardeners of Paris has given a fresh impulse to horticulture generally throughout the country.

The Bois de Boulogne was the first of the series of public gardens formed by the city, and it was the Emperor who suggested the gigantic undertaking of remodelling this flat, dusty tract of ground, which was scantily covered with a barren vegetation. The task was carried out with unexampled vigour and rapidity, and the result has been the most delightful and extensive park known. Soon other gardens followed on the boulevards, which radiate through the most populous quarters, those suffering most from want of air and space. The crooked streets and foul gutters have given place to beautiful promenades and smiling oases of verdure and flowers—charming retreats, to which infancy and old age alike resort—resting-places for the mother of the family, and the workman snatched from the seductions of the tavern. These new gardens have become great favourites with the people. There the workman makes his meal on the same seat as that on which the old soldiers of the empire relate their past exploits, while such of them as are the birds' friends call them to snatch a morsel of bread from their hands.

All the quarters of Paris have now their public gardens; their principal localities, however, are La Tour St. Jacques, the Marché du Temple, the Champs Elysées, the Conservatoire des Arts et Métiers, the Park of Monceaux, the Marché des Innocents, Place Montholon, St. Clotilde, Batignolles, Belleville, Grenelle, Montrouge, Malesherbes, and Charonne. To these must be added other heavy works now in course of execution, as those at the Bois de Vincennes, which will soon be a rival to the Bois de Boulogne, and the park of Buttes-Chaumont, which will be one of the most curious transformations of the age.

To keep up such an extent of gardens it will readily be conceived how great must be the amount of labour and materials required. Under the direction of the chief engineer, M. Alphand, and the two engineers who divide Paris into two sections, the gardening staff of the city is as follows:—1 Superintendent, 1 Head Gardeners, 2 Foremen, 2 Inspectors of Plantations, 20 Chefs d'Atelier, and an army of gardeners amounting to not less than 300, without counting the office staff and others indirectly connected with horticulture.

To feed the whole of the public gardens there are five establishments, distributed as follows:—1st, The parent establishment of La Muette (Passy), for the propagation of hothouse, greenhouse, and bedding plants. 2nd, That for annuals and herbaceous plants at Vincennes. 3rd, A nursery for Conifers, American plants, and evergreens at the Bois de Boulogne. 4th, A nursery for deciduous trees and shrubs at the Bois de Boulogne. 5th, A nursery for large forest and ornamental trees at Petit Bry, near Nogent-sur-Marne.

I will not speak of the out-door departments, as they resemble those of large nurseries; but the establishment of La Muette, from its extent and the peculiar features which it presents, deserves special notice. Situated near one of the entrances to

the Bois du Boulogne, the La Muette gate, at the extremity of the fashionable quarter of Passy, this establishment covers an area of nearly five acres between the Rue de la Tour, the Avenue de l'Empereur, and the old historical castle of La Muette. The railway between Auteuil and St. Lazare cuts the ground into two unequal parts, of which the smaller is taken up by frames, the orangery, sheds, cellars, &c.

The frames are more especially intended for raising plants from seed, and for the extensive propagation of softwooded plants for bedding, such as Pelargoniums, Verbenas, Calceolarias, Salvias, Fuchsias, Chrysanthemum frutescens, &c. There are altogether 2900 lights set in straight lines, and arranged in sections according to the description of plants grown in each. The frames are shortly to be replaced by a range of fifty low houses communicating with each other, and forming the most complete assemblage of glass houses ever seen. Each section is in charge of an under-foreman under the general direction of the foreman, and he has two or three assistants, with whose aid he has to manage from 100 to 150 lights. He alone is responsible for the plants, also for the breakage of glass, and other casualties arising from carelessness, and as a compensation he receives a small monthly allowance. The advantages of this system are, that the workman takes better care of the plants and materials committed to his charge, economy is consequently secured, and the men, being confined to one department, speedily gain great experience of the particular plants with which they are engaged. To give an idea of the immense number of plants raised at the Fleuriste de la Muette (that is the name of the establishment), I may state that it amounts to nearly 3,000,000 a-year, Pelargoniums alone counting for 290,000, Cannas for 70,000, and other principal genera in proportion.

The orangery or conservatory, constructed in a very economical manner, is 226 feet in length, and is used for the protection in winter of hardwooded plants taken up in autumn for planting-out in the following year. A large shed of the best construction serves to shelter soils, peat, and various composts, as well as spades, rakes, watering-pots, and light tools. Down the middle for the entire length of the shed runs a table 18 feet wide, at which sixty men can pot with freedom the innumerable plants struck from cuttings in the frames. Spacious cellars, 9 feet 10 inches high, cut out of the rock at great expense and at a considerable depth below the surface, extend beneath the frames. They are intended for protecting in winter tubers and rhizomes, such as those of Dahlias, Cannas, &c., taken up in autumn. They may also be used as a workshop for the gardeners in severe frosts, and as gas will shortly be laid on, they will be still better adapted for the purpose.

On the other side of the railway are the trial ground and glass houses. Whenever a new plant is announced it is purchased at any price, and here tried, for the city of Paris will not lag behind in the race of gardening progress. If the plant is hardy it is grown on trial out of doors along with kindred plants, and under different modes of culture, and after two or three years' experience it is adopted or rejected; but it must possess many good qualities to dethrone its rivals, and be extensively propagated. The effect is here studied, especially in masses of one species or variety, rather than in heterogeneous assemblages of plants without unity or harmony. The trial is all the more severe, because long experience has taught mistrust of the high-sounding, often specious, descriptions given by dealers in novelties. If the plant is adopted it is sent to Vincennes, where it can be propagated in such numbers, and over an extent of ground, that it could not be at La Muette.

The houses, which have been successively erected from 1858 to the present time, are not equalled in extent in any other part of France. They consist of twenty-one ranges, divided into sections according to the mode of culture required by the different classes of the plants, and cover an area of 95,800 square feet. The largest house has an area of 18,222 square feet, is 31½ feet in height in the centre, and is in three compartments. The central one is filled with a splendid collection of Camellias from 15 to 23 feet high, planted out, and several of them once formed part of the celebrated collection of the Empress Joséphine at Malmaison. Of the two side divisions one is devoted to the protection of those ornamental-foliaged plants which have risen so much in favour during the last few years. There may be seen trees of Wigandia, Nicotiana wigandioides, which is covered in winter with superb drooping panicles of white flowers, Montagneas, Polymnia, Aralia papyrifera, and many

other handsome tropical plants. The division on the other side contains a number of large specimen Palms, Pandanus, and Cycads, which are almost unrivalled. Among them are magnificent examples of Sabal Blackburniana, Scaevola, Pandanus, Phoenix, Thrinax, Livistonia, Zamia, Cycas, Ceratonia, &c., not to mention a numerous collection of novelties, in fine condition, amounting to upwards of 390 species. Another large house, in three spans, holds the remainder of the collection of large Camellias; these are in tubs, and whilst those planted out afford a multitude of cut blooms, these are used to decorate the apartments of the Hotel de Ville at the great balls given by the Prefect of the Seine; indeed, all the large stove and greenhouse plants are principally grown for this purpose. Ordinary greenhouse plants, such as Azaleas, Acacias, Epacris, Heaths, &c., are grown along with the Camellias, and receive much the same treatment as regards culture.

A square pavilion, filled with very tall Palms, Dracenas, Ficus, Aralia, &c., forms a vestibule to a high lean-to containing a collection of no less than 110 species of Ficus. Ficus elastica (Urostigma elasticum), or the Indianrubber tree, takes up the greatest amount of room, although there are some other species of nearly equal merit for beds of peat soil out of doors in summer.

Further on, in sections according to the description of plants grown in them, are large and fine houses devoted to Dracenas, to Aroids, to Ferns, to large-leaved Solanums, to Begonias, to Musas, to Hibiscus, to Pelargonium grandiflorum, to large Caladiums, &c. Lastly, other two houses deserve special mention: these are the propagating-house and that which goes by the name of the "serre de sevrage."

The propagating-house is employed for the rapid propagation of all hothouse and hardy plants that do not strike readily in frames, and the appliances are such as are nowhere else to be seen. It is impossible, however, to convey a clear idea of the arrangements from mere description; suffice it, therefore, to say that there are shelves all round, and, besides, two bark beds, in the interior of which shelves rise in gradation like the steps of a stair, and under these run the hot-water pipes enclosed by sheets of iron. The pipes, sixteen in number, are 4½ inches in diameter, and run all round the house. Being thus confined within the pit they maintain the heat of the tan in which the pots are plunged, and afford that degree of bottom heat which is so favourable to the emission of roots. The step-like arrangement of the shelves covered with tan, on which bell-glasses are placed, allows of the young plants being kept very close to the glass. Six young gardeners are employed throughout the year in propagating, and for plants difficult to strike or raise from seed special means are provided. This house furnishes about a million of young plants every year.

The "serre de sevrage" is that in which the young plants are placed as soon as they have recovered from their first transplantation or potting, and when they are well established they are removed to their respective houses or frames to make way for new comers. A portion of this house is occupied with choice specimens of new stove plants on trial, or for propagation.

I may add that the other branches of this establishment, such as seed-rooms, storehouses, &c., are well organised, and that the regulations are most judicious, and so, too, are those with regard to the superintendence, order, and discipline of the men. Lectures on the theory and practice of horticulture are periodically given by the heads of departments to the workmen and apprentices, and discussions held. The expenditure for this great establishment does not exceed £8800 a-year.

Such is the organisation of an establishment the like of which does not exist in the whole world, and which proves what horticulture can do for the ornamentation of the capital of a great nation.—ED. ANDRÉ, *Jardinier Principal de la Ville de Paris.*

IREFINE HERBSTII.

ALLOW me through your valuable Journal to say a few words on behalf of the Iresine Herbstii. I planted a large bed of it in this garden last season, and although we had a large number of beds planted in the usual way with bedding plants, not one was so much admired as the above, more especially during the months of July, August, and September—in fact, it was beautiful up to the middle of October. I also consider it invaluable for the stove for this season of the year. I have some fine specimens in eight-inch pots 2 feet through, and

about the same in height. Therewith enclose a portion of the foliage for your inspection. The plants from which they were taken are growing in a temperature of about 65° or 70°.—ISAAC HILL, *Gardener, The Poles.*

The specimen leaves were very deep-coloured, and fine.—
EDS.

GLEANINGS FROM ROCK AND FIELD TOWARDS ROME.—No. 10.

One day we remained in Florence showed us more and more of the wondrous change that had fallen upon that city of dullness and repose. And such strange life too! I stood and wondered how faculties that had remained so long unused could all at once have burst forth into such active play. I was like a very child gazing into the shop-windows, reading the titles of books, pamphlets, and newspapers—halfpenny newspapers—perhaps a trifle too scurrilous, a trifle too free with the names of king, ministers, and people; and I must confess in my lair sometimes standing a little on end at only the titles of the publications. The great reaction seems to have been too much for the heads of the good people of Florence; they are like thirsty men, unaccustomed to strong drink, placed before an overflowing tankard, they think more of quenching their thirst than of after-consequences. I comforted myself with thinking that after awhile these wrongs would right themselves.

Another strange feature was the churches. On many sides I heard murmurs of the persecutions to which the church was subjected, long faces were pulled, and the direst prophecies uttered as to what would be the future result. The future was beyond my ken; but the present, as far as the Church of Rome went, seemed highly satisfactory. I saw, indeed, fewer monks and priests, but more services; less show perhaps, but more reality. I found churches filled with praying people, that once were comparatively empty, and judging by what I saw my impression was that the Church had received freedom rather than persecution. Of course there was, what some people would call, the reverse side of the shield. I thought so when I drove to what once had been the *Pharmaceutica* of St. M. Novella, where the dear old white-robed monks had used to distil the most fragrant essences from delicious flowers, and make "*pastiglie di profumi*" of wonderful potency; but alas! the few monks that had been left had no time to distil aught but sad forebodings to their ancient house and to do the real work of the convent; so we had to return without pastils or scent, if I except the flavour of garlic, which seems to pervade every monk and monastery as inseparably as the smell of peat pervades an Irish beggar through years of mendicancy in England.

Again, when I went to see the matchless frescoes of Fra Angelico in the convent of S. Mareo, and found soldiers expected there. I thought it was the reverse of the shield with a vengeance! and it brought to my memory that it was not the first time soldiers would invade the convent of Savonarola and Fra Bartolomeo. There are no paintings in Florence that I more love to look upon than those of Fra Angelico; it seems as if the reflection of the inner life of the good "*frate*" shone brightly and purely on every feature of the blessed angels he loved so much to depict.

One of the favourite drives from Florence is to the Carthusian Monastery of La Certosa in Val d'Emo, from whence the monks distribute food and medicine to the poor for many miles round. There are many beautiful wild flowers growing around the convent, and amongst them a large ragged-looking *Paonia* of a pinkish lilac colour, which was flowering in great profusion. I believe it to have been the *Paonia peregrina*. I have never seen it growing wild in any other locality.

In the fields near Bellosquardo, shining brightly amidst the fresh green corn, I gathered quantities of *Gladiolus communis*, the colour being quite as good, though the spikes of bloom were not so large as when under cultivation in England. The fields of Italy are so richly decked with flowers in all the wild luxuriance of Nature untouched by art, that I grew to love them better than the untidy gardens, suffering from the spasmodic exertions of gardeners who thwart Nature without introducing art.

From the beautiful fields I passed into the garden of the Villa Bellosquardo, and there I saw Orange trees, full of fruit and bloom, in large tubs filled with the very richest compost,

its ugliness so unconcealed that one turned away disgusted from the golden fruit and full rich blossom. Beneath the walls of this villa there is a magnificent view of Florence; we went there to watch the setting sun. All around us were hedges of roses—the common China and the Yellow Banksian, the latter trailing its buff blossoms over walls and trees, from which it depended in innumerable festoons reaching almost to the ground, where the deep blue Corn-flower (*Centaurea cyanus*), was growing in pleasing contrast of colour. Below us lay Florence with her graceful towers, her gently-flowing Arno, with the silvery gleaming Birch trees by its side, while stretching far away was a dreamlike distance of fair soft grey hills, with pleasant-looking villages dotted about the intervening valleys. To the right was the tower of Galileo; and as the eye gazed upon it strange thoughts would come to the mind of the curiously one-sided nature of the Pope's infallibility—"so infallible," as a Catholic in Rome said to me one day, "in spiritual matters, so very fallible in all temporal affairs." One could not but remember the strange scene in the convent of Minerva in Rome, when Galileo, then seventy years of age, was forced—some say by torture—to abjure on the Gospels his belief in the Copernican doctrines. Rising from his knees, we read, that the old man turned to a friend, and whispered, "*E pur se muore,*" "It, the earth, "moves for all that!" but as there was no little bird to whisper in the ears of Pope and Inquisitors Butler's famous epigram—

"He who consents against his will
Is of the same opinion still."

I trust they were satisfied that the imposed oath had settled the question and the earth's motion together.

But I have wandered far away from Bellosquardo, and from the low wall on which we sat watching and listening. Presently from a neighbouring villa came forth a pretty-looking lady, work in hand, and by her side two little children, one holding his father's hand. They, too, came and sat down, the pretty mother working and chatting away, while the children played at bo-peep with their parents and the stranger. Then there came a party of monks in brown habit, rope girdle, and sandals; with eyes bent on the ground they passed quickly on, sitting down at a little distance, when forthwith, mingled with the scent of Roses, came the abomination of garlic. With the monks came a small party of young lads in the black cassock and felt hat of the seminary. Then arrived a party of Americans with a courier, Murray, and cigars. Striding the wall as though it were a mule's back, they puffed away in total defiance of the "smoking prohibited" that English ladies carry so plainly written on their faces. Happily they soon "did" the view, hurrying on to another, while a trio of Italian girls took their place, the sweet music of their tongue blending in perfect harmony with the scene. We were a strange party, attracted from such distant lands to gaze on the glory of that setting sun, sinking down so peacefully behind the western hills.

It was in Florence that I noticed for the first time the *Cereis siliquastrum*, or Judas Tree, its clusters of red bloom having much the appearance of a red *Acacia*. Here, also, I met with the *Petunia nycetagineiflora*, or *Petunia Tree*; the blossoms are of the softest lilac, with a grey tinge, they hang in drooping masses, and have a most delicious scent (?). The tree is as large as a moderate-sized Apple tree, and is most graceful-looking. Cheap as bouquets were in Rome, they were much cheaper in Florence, and much more beautiful; for half a paul I could buy the most lovely Roses and Lilies, and, what is more, I could choose my nosegay from a huge basket of flowers freshly gathered, with the morning dew still resting upon them, and, moreover, I could have a long chat about them into the bargain. Some of the streets are quite converted into gardens, quantities of shrubs and plants being arranged against the wall, and railed round. How I longed to put felonious hands through the bars and gather for myself! There were Roses, yellow, white, and pink; *Deutzia gracilis*, with its feathery white blossoms; *Coronilla*, and a hundred other dainty flowers. I wondered how they would have looked after a two-days sojourn in Regent Street.

One of the most interesting sights of Florence is the royal manufactory for the "*pietre commesse*," or Florentine mosaics, where the most finished pictures are wrought in precious stones, and the workmanship is so delicate that these inlaid mosaics may be easily taken for paintings, and the groups of flowers look so natural, one is half tempted to try if they have any scent. The marbles and stones of which the mosaics are composed are collected from every country under heaven,

so that in one small space, not larger than your hand, you would see the treasures of the most remote lands brought together; there would be dark agate from Derbyshire, petrified wood from Hindostan, opals from Hungary, turquoise from Persia, &c. The work is very slow and tedious, so that it takes nearly twenty or thirty years to finish any great undertaking! In the time of the ex-Grand Duke I went to see the unfinished monument of the first Grand Duchess, when the second had grandchildren! The opals are the most difficult stones to manage, as it is necessary to set them in a hollow space, whereas all other stones rest on some flat surface. The imitation of flowers is exceedingly perfect, and in this I noticed a decided improvement, the study of Nature having given place to a certain amount of mannerism that once prevailed.

The Ceterach was the only Fern I noticed about Florence, and that was very small.

From Florence we went to Bologna by rail. I wish my pen could give the very slightest idea of what those simple words include; never could I forget that railway journey! the awful precipices, the frightful chasms, over which we sped on our perilous way; now passing through the very heart of a great mountain, emerging from its side on a narrow pathway that seemed to tremble and quiver at our weight; again entering the Apennines by tunnels so close and long that the compressed air was like a great weight on the brain, and respiration became difficult; now shooting out on a frail wooden bridge spanning over a torrent rushing down far below; now gliding along the very face of a rock, so high that one recoiled from measuring the depth below; the glowing sunset giving the richest colouring to the scene, and after sunset came the moon, and then—Bologna.

Bologna is the very quaintest of all the quaint old towns of Italy. It has the gravest look of learning lurking about its heavy arcades and sober red-brick buildings; the leaning towers bend down towards each other, as if proposing problems in a whisper, and sober-coated ravens describe circles in the air, and everything in the old town has a wise and winking look, as if it had studied too much for its health.

At the Villa Reale on May 3rd I found the royal gardener putting out his bedding plants, which did not seem more forward than ours in England. I noticed but few young plants, the Geraniums were for the most part those of the last year much cut down; they had been kept during the winter in earth-pits, with very slight protection. The Orange trees were large for trees growing in tubs, and very healthy, but these, too, had been protected during the cold season. The gardener was, like all the Italians, most polite, he left us to wander about the garden and gather wild flowers as we liked, and on my admiring some brilliant *Ixia* (*Ixia crocata*), he immediately gave me a large potful, tying them up for me, flowers, leaves, and bulbs, in a tidy bundle, and telling me I need not touch them till I wanted them to plant in August. The peculiarity of the *Ixia crocata* is the transparency of the base of the corolla, which, when the sun was shining on them, gave the flowers the appearance of fire. In these gardens I gathered handsome specimens of the *Orchis pyramidalis* and the *Anemone hortensis* still in bloom. There was also a very fine *Petunia nyctaginiflora* [?]. The white *Acacias* were in their first fresh bloom.

The picture-gallery of Bologna contains Raphael's *St. Cecilia*, some good *Francias*; but the gems are from Guido's masterly hand, his *Crucifixion*, *Sampson*, and *Murder of the Innocents* are magnificent compositions.—*FILIX-FEMINA*.

MILDNESS OF THE SEASON.

THE day before Christmas-day I picked a very fine bloom of *Gloire de Dijon* Rose from a north wall, but on the last day of the year from the same tree I cut six or eight beautiful blooms, one or two being as exquisitely shaped as we should get them in May. Still further to show the mild character of the weather here, in Somersetshire, I saw on the 3rd of January two male specimens of the brimstone butterfly (*Gonepteryx Rhamni*), flying about. I saw them in the same parish, but about a mile apart. I was completely astonished at the sight of the first, and he certainly was either astonished at me, or at finding there were no flowers and leaves. He did not appear to approve of the temperature, though the morning was sunny and bright, and he alighted on the ground, and I captured him, thinking it worth while to add to my cabinet a brimstone taken on the 3rd of January! I injured him rather in the catching, but otherwise he was a good specimen. The other did not settle,

but flew about very strongly, to the surprise of a woman to whom I pointed him out, and who evidently seemed to consider that something serious would happen. I am not aware that the brimstone butterfly hibernates, as the small tortoiseshell very frequently does—of the latter, I have seen five or six at a time in my saddle-room—if they do not, these must have emerged from their chrysalis state at a very early period of the year. I should be very glad to know whether they do hibernate.—*Y. B. A. Z.*

OUT-OF-DOOR STRAWBERRY RIPE IN JANUARY.—What a season we have had so far! On Saturday one of our men brought me a fully grown and nearly ripe Strawberry; strange for the 6th of January! I fear we shall suffer for it.—*J. R. PEARSON, Chilwell.*

BANISHING MOLES.

I HAVE in my charge a large Rose-bed, the Roses are on their own roots, and pegged down; lately moles have mined among them, lifting some of them nearly out of the ground. My employer is not willing that the depredators should be caught, as he considers they do good by destroying wireworms. That, of course, I cannot deny, but the question is, Will the good done by them be sufficient to compensate for the injury they may do to the Roses? without taking into account the trouble of having continually to clear away the heaps of soil thrown up by them, and the untidy appearance they give to a place.—*C. C.*

[We have tried to drive moles away with bruised green Elder leaves, which you cannot, however, now obtain, and used bruised Laurel leaves in the runs of moles, with fair effect; and in the winter time we have opened the runs in different places, and poured in a little tar. Independently of the scent, they cannot endure anything filthy on their fur.]

GARDENING IN JAPAN.

My first visit to Yedo, soon after arriving in the country, being but short, and, owing to other circumstances, offering but limited opportunities for seeing the suburbs of the city, I was anxious to renew it, more particularly for the purpose of visiting the commercial gardens in the neighbourhood. By the courtesy of the Hon. Robert H. Pruyn, United States Minister, my wish has been gratified. Early on the morning of July 13th, in company with Mr. Portman, Secretary of Legation, and another visitor, I started for a twenty-mile ride on the Tokaido, to the great city.

The road, for the greater part of the way, presents the appearance of a continuous village. After passing the town of Kanagawa, the Rice fields are cultivated close to the margin of the road, extending like a green carpet to the rising ground, about a mile distant, and gradually coming nearer to it as you approach Yedo. Until you arrive at the river Logo, the spot of greatest interest is where Mr. Richardson was murdered two years ago. The road here, for the distance of about a mile, is bordered with Pine trees; and though of rather stunted growth, they give relief to the monotony of the dead level. Passing through the town of Kawasaki you arrive at the river, a stream of considerable length, and navigable for flat boats for a distance of about thirty miles. This river is the limit, toward Yedo, to which foreigners may ride by treaty stipulation; but, from the nervous state of feeling produced by several attacks on them when away from Yokohama, the privilege is not now often taken advantage of.

Here you dismount, and are ferried across to the other side in scows. The road from here, until you approach Sinagawa, a suburb of Yedo, is less closely built up than the part of the road just passed over. For two or three miles distance from the river the land is quite flat, yet not low enough for the cultivation of Rice. The soil is a light sandy loam, and well suited to the cultivation of vegetables. Occasionally, as you pass along, you see orchards of trained Pear trees, of the kinds peculiar to the country. The trees are planted, as nearly as I could judge, from 12 to 15 feet apart. After attaining the proper height, the tree is allowed to form branches, and these are trained to a rough framework of the same height, perfectly level, and extending over the whole area of the orchard. What object the cultivator has in training them in so careful a manner I have not as yet ascertained; but why may it not have its advantages in enabling him to secure his crops in the highest possible condition? Every fruit is thus brought into view, and within reach of the gatherer, who, where trees are left to grow in their natural form, too often

runs the risk, in order to secure some tempting prize displaying its beauties on some inaccessible branch, of injuring the tree, or worse, possibly himself.

After crossing the river, we soon arrive at the famed Tea garden at Omura, celebrated for its Plum trees, so attractive when in flower. At the season we went up, they presented nothing more than Plum trees usually do.

The pains taken to bring every available space into cultivation for Rice, proves its value as the chief support of the people. Here and there in the fields spots of land are seen which, having been originally a little higher than the surrounding surface, and unsuited for Rice, have been levelled off, and are cultivated with vegetables. These dry spots are usually skirted with Pines, which apparently have been planted to prevent the soil from being washed away by heavy rains.

The country roads around Yedo are exceedingly pleasant, and generally sufficiently wide for two or three persons to ride abreast, and frequently for long distances completely overshadowed by trees. Numerous patches of bamboo are met with in every direction, and must be a source of considerable wealth to the country. It enters largely into the economic uses of the people, and for the purpose of hoops for pails and tubs of all sorts it takes the place of iron, hickory, and oak, used for the same purposes with us. The young and tender shoots in the spring are also in demand as an article of food.

To supply the wants of so large a city, the cultivation of vegetables is extensively carried on. The varieties, at the season of my visit, consisted chiefly of Beans, Onions, Egg-plants, Tomatoes, Carrots, Squashes, and Cucumbers. The manner of preparing them for market is exceedingly neat; everything being carried in baskets, they are brought in the best possible condition. The manner of cultivating the Cucumber was to me somewhat novel, and it appeared in some respects superior to our mode. Instead of sowing the seed in hills, it is sown in double rows, as Peas are frequently done, only at a greater distance apart, both between the rows and the plants, say 3 feet between the first. The vines are supported by placing bushwood along each row, forming an arch, over which they may grow. The advantages this method presents are, that the fruit is always clean and straight, of a uniform colour on all sides, and can be gathered without incurring the danger of injury to the vines by trampling on them.

The leaves of *Amaranthus melancholicus* are eaten as a vegetable, being boiled as a Spinach. A species of *Sagittaria* also appears to be used for the same purpose, as I observed, in one or two instances, small plantations of it in the corners of Rice fields. The large, fleshy roots of the *Nelumbium* are a staple article of food in the winter season.

One of the most attractive rides in Yedo, in which you see the chief business part of the city, is to the temple of Asakusa. In going there, the roads around the Tycoon's and Daimio's residences are usually chosen, by which means you are enabled to have a good view of the moat and embankment that surround them. The space in which these residences are built, is an elevation of land considerably higher, in most parts, than the land immediately surrounding. The moat, which varies in width from 50 to 150 feet, has been dug at the base of this elevation, and is level with the streets on one side, but presents a high and steep bank on the other. In some places it is filled with *Nelumbium* and other aquatic plants, making, when in flower, a splendid show. The bank on the other side of the moat is covered with grass, nicely kept in order, with occasionally a few trees planted. The top is surmounted with a row of trees, mostly Pines, some of which have their branches extended downwards, relieving in a great degree the formality which such works usually present.

Surrounding the temple at Asakusa are extensive grounds, in which are included various shows, and places for practising archery. The most interesting part to me was that portion occupied by a florist's establishment. Here you find everything kept in the neatest order. The plants are arranged on elevated stages, shaded with rolls of fine bamboo laced together, forming open mats, which can be rolled up when desired. They are much superior to a framework of lath, sometimes used by us for sheltering plants from the sun. The principal stock of plants consists of those most suited to Japanese tastes—viz., dwarfed Pines and *Retinosporas*, *Sago Palms*, variegated *Podocarpus*, *Aucubas*, *Selaginellas*, &c., many of which are sold at what we would consider very high prices. I was surprised to find growing here three distinct varieties of *Verbenas*, which I was not aware had been introduced; also *Jasminum grandiflorum*, and a species of *Franciseca*. With these exceptions, together with a dwarf variety of *Sago Palm*, there was nothing of especial interest

that I had not seen offered for sale in Yokohama. The grounds contained several species of trees unknown to me, which I would have purchased if I could have obtained small specimens. A pond full of scarlet *Nelumbium*, the flowers standing on tall footstalks above the foliage, like immense Tulips, had a very fine effect. The Japanese gardeners cultivate a number of varieties of them having double flowers, and with various markings and shades of colour, some of which I hope to be fortunate enough to send home alive. The scarlet *Chirodeudran* seemed to be a favourite, and large plants of it, grown in ornamental porcelain pots, made a fine show. The Japanese do not entertain our objections to growing plants in glazed pots; all their fine specimens are grown in them, and I certainly have not been able to see that they do not thrive equally as well as in any other kind.

One day was devoted to a visit to the gardens at Dangozaka and Someia, two villages adjoining each other on the outskirts of the city. We took an early start. Two friends and the usual escort of mounted officials constituted our train; and although we considered the latter more ornamental than useful, the Government, under real or assumed regard for our safety, insisted on their attendance.

One side of the road which unites the two villages is bounded almost entirely with small nursery grounds. These at Someia are larger than those at Dangozaka; but at none of those visited did I see a finer collection of plants than at Asakusa. After visiting five or six the guard became rather impatient, as I expected they would, at my frequent stoppages, and inquired what I wanted. I explained to them that I had a garden at home, and wanted to see, for the purpose of purchasing what new plants I could find. As is often the case, they, not being interested, could not appreciate my motives; and as it was already past noon, and very warm, with a long ride before us, I agreed to return if they would conduct us home as far as possible by some country road, instead of through the city. To this they assented, and conducted us back through a series of charming wooded roads and lanes lined with hedges on either side, and through the city within the second moat of the castle, whereby we had a more extended view of that part of Yedo.

None of the gardens visited, or those seen on my ride, were very extensive, the largest containing but an acre or two of land; yet I am satisfied that there are larger establishments somewhere in the neighbourhood, where trees are the principal objects of culture. I am impressed with this opinion from the quantities brought to Yokohama for ornamenting the gardens of foreign residents, and for sending away.

Another ride we took was to a celebrated tea-house on the other side of the river from Asakusa. This part of the city is intersected by numerous canals of great value for the easy transportation of heavy goods in a country where wheeled vehicles are of the rudest description. Above the city, almost as far as the eye can see, is one continued Rice field, which in former years was an immense marsh, redeemed from the overflow of the river by a wide dyke. The top, in most places planted with trees, constitutes the road along which you ride. The amount of labour employed to bring into cultivation the almost innumerable Rice fields all over the country is not to be estimated; but they are monuments of the toil of the people, and if neglected but for a few years, would become covered with a rank and noxious vegetation. Near the Tea garden we visited the residence of a retired merchant, who had the reputation of possessing a beautiful garden. In this I was disappointed, it being only of a larger size than ordinary, but presenting no remarkable features, either in style or its contents. Our disappointment in this respect was compensated by the kind hospitality of the aged proprietor and his family, who entertained us with tea and fruit, and did everything that Japanese courtesy demanded to render our visit agreeable.

One of the horticultural attractions of Yedo is the large *Wistaria* spoken of in Fortune's "Visit to Japan." Unfortunately, it was too late to see it in flower, but, judging from the still remaining flower-stems, it must present a rare object of beauty when in blossom. It is trained on a flat trellis overspreading an area of more than 400 square feet.

In our rides about the city, we frequently met with horses laden with cut flowers, in which an extensive trade is carried on. The varieties are such as are most abundant at the particular season of the year, and just then consisted of *Chrysanthemums*, *Wahlenbergia sinensis* (?), a species of *Veronica*, and a few others.

In the rear of the legation residence in a small wood, in which are a number of large trees of *Torreya nucifera*. It is a very handsome species, growing to a height of 50 feet. If it prove hardy, it will be a valuable addition to our list of evergreens.

The large tree of *Ginkgo biloba*, preserved from the fire that burned down the buildings last year, still retained the attractions it had when seen on my first visit. When better known with us, the *Ginkgo*, as an ornamental tree, will meet with a more extended cultivation than it now receives.—T. Hogg.—(*American Gardener's Monthly*.)

PAINTING WOOD.

THE preservation of wood by paint is a matter of great importance to all who have glass houses. The best way of applying paint, as also the materials of which it is composed, are generally left to the painter, who is supposed to understand his own trade; the price of the work, the number of coats, and the colour to be employed, are generally matters of discussion; the quality of the ingredients is taken for granted. Are those wise who pay for a given surface to be painted without knowing what kind of paint is likely to be employed? From my own experience I think not. The majority of painters know little of the nature of pigments, and are as little able to judge of the quality of what they purchase as those who employ them. White paint ought to be carbonate of lead; what it often is would be difficult to say. I have seen it rub off like a coat of whitewash.

But suppose we obtain really good paint, and oil of the best quality, we still are not safe. Something to cause the paint to dry quickly is almost a necessity, particularly for outside work, and the best paint may be spoilt. The protoxide of lead (litharge) is an excellent dryer for dark colours; the acetate of lead (sugar of lead) is equally good for light colours; but some stuff called patent dryers is generally used. What is this? Requiring no grinding, easily mixed, drying readily, it appears just what the painters want, but what is its effect? Have you ever seen an old oil painting cracked in all directions like a piece of scorched pork? If you ask an artist the cause he will perhaps tell you "Oh that man's pictures all crack, he used too much wax in his colours." Just the same effect is seen in almost all the common painting now. Ask the painter the reason, and he will tell you it is the sun on the varnish. Show him the paint is cracked down to the wood, and, therefore, it cannot be the varnish. Show him a door which faces the north, and, therefore, it cannot be the sun, and he will probably tell you he really cannot say what is the reason. My own opinion is these patent dryers are the cause, and the effect is in exact proportion to the amount used. Put a double or treble dose in your paint and see if it is not so. Whether I am right or wrong it may do good to call attention to the subject.—J. R. PEARSON, *Chilwell*.

LEGACY TO THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—I beg to apprise you of the death of Mr. Henry Scott on the 5th inst. He was for very many years gardener to Wynn Ellis, Esq., of Ponsbourne Park, Hertford. He was a subscriber to this Society since 1845, and, by his will, has left a legacy to this institution of £200. This is certainly a noble example, and needs no comment from me.—EDWARD R. CUTLER, *Secretary*.

COLLYER & ROBERTS' TOBACCO TISSUE.—This patented preparation for fumigating is used the same as tobacco or tobacco paper. Mr. Eyles says that "it is decidedly preferable to the paper in common use," and other head gardeners bear testimony to its efficacy as a destroyer of the thrips and green fly.

THE MODERN PEACH-PRUNER.—No. 20.

ORCHARD-HOUSE PRUNING AND TRAINING.

BUSH trees in pots have apparently the advantage of being easy of formation; but, though readily kept in shape for a season or two after potting, they are apt to be thrown out of a true balance by any strong vertical shoot which may be overlooked. It is, therefore, on the whole, safer to induce the bush tree to assume some more regular shape, such as the pyramidal. In this case we may, by extra width at the base, cause the tree to look much like an ordinary bush, whilst we retain the advantage of having a main central stem from which the branches can be more symmetrically developed than if the tree divided into two or three strong branches at the

outset. By keeping the top of this low pyramid very little in advance, and allowing the base to extend freely beyond the pot, this form assumes an aspect different from the lofty pyramid with its comparatively slender base.

When, however, the bush form is retained, it is imperatively necessary to keep the centre open to the influences of sunshine and air. In this case, also, regularity of form is not only more pleasing to the eye, but conduces to the duration as well as to the productiveness of the tree. It is necessary, generally, to peg down the leading branches so as to induce the tree to form the U or goblet shape, and also to keep the branches at proper intervals by means of slender rods. One season of neglect is enough to spoil the whole appearance of any bush tree; indeed, it is rare we see any very handsome specimens after a certain age. Half-standards are much easier to keep in form.

Generally speaking, after a maiden tree has been headed down to six or seven buds (an odd number being preferable), the shoots proceeding from these buds should be trained carefully from the outset, and regularly stopped to equalise their growth. Should the tree not put forth a sufficient number of shoots, cut off the ends of those formed early in June, and from their points second growths will spring from which the requisite number can be selected to shape the tree. This is for ordinary bushes; possibly for U-shaped trees where the shoots are strong, it would be preferable to cut them back in May so as to induce them to fork lower down. The equalising of the whole form is to be continually attended to by stopping any shoot which protrudes. By cutting to a bud which points outwards the centre is kept more open in any case. Any laterals, later in the season, on the upper portions, can be slightly equalised as shown in No. 14.

At the October pruning the tree is formed according to the shape decided on. Goblet-shaped trees, with long vertically inclined shoots—*i. e.*, branches in future, should have these left longer and not much shortened-in. Perhaps one-fourth is sufficient, generally speaking, to suppress now. A few laterals may thus be retained within these dimensions, and these should be cut-in to two buds. Low pyramids will have to be cut back to a convenient group of triple buds, or to some single wood-bud looking outwards. Tall pyramids are treated in much the same way. The first winter-regulation is important for the beauty of the tree. In pyramids our greatest attention is needed to establish the lower portions from the commencement, and never to allow these to languish, nor to bear too early.

During the ensuing summer the side-shoots are to be stopped at three leaves, &c., as before directed in No. 18, for potted trees. If the summer-stopping of this, the second, season of the tree being in a pot, has been regularly done at the winter regulation, the tree will begin to assume a certain definite shape, and the pruner will be less puzzled than in dealing with more irregular forms.

It is always better to avoid cutting down potted trees, and rather to rest them for a season, by removing the fruit and re-modelling them. Whenever, however, a tree resists this care, it will be found that it suffers from some serious cause. The roots should be carefully examined, and if unhealthy the tree should be at once removed and another young one brought forward from the reserved stock. A few trees thus reserved will save much annoyance. Overcrowding is a fertile cause of the trees becoming shapeless and unproductive. In general, also, sufficient attention is not given to selecting handsome and regular shapes for potted trees.

The advice of some experienced person is of great use in the disposition of the trees in an orchard-house. The variety of forms and climates precludes any general rule in this matter, and, doubtless, we have all very much to learn in this respect. We have started from a good and tried basis, however, and may experimentalise without serious risk. The mere beginner, however, had better be cautious, and secure the soundest advice within his reach; at least, in such important points as the best shape and situation for his new house, and the selection and disposition of the trees within it.

If the summer stopping of the shoots be both easy to describe and to perform, the same cannot be said of the winter pruning. In this case there is no better way than to have recourse to our classification of the Peach shoots, and to state in what respect the winter pruning of each differs.

Peach trees in pots are stopped at three leaves, as soon as five are formed; and second growths at two leaves, as soon as three are formed; third growths generally to one more leaf, unless autumn growth be desirable to relieve the tree. (See,

No. 18.) In the open air, however, the first summer stopping is made at four good leaves, as soon as six are developed; and second growths are stopped at two leaves, as soon as four more are grown. This gives us more freedom and secures junction-buds, and also the triple groups below them. This is described in No. 17.

This style of stopping to four leaves is also the best for diagonal cordons on the back walls of orchard-houses when single, and, therefore, at about 15 inches' interval. If planted at 12 inches' interval between the leaders (being double or triple), then stopping to 3 inches may be advisable. Even then, in many cases, four leaves may be left with advantage, especially at the base. We have thus one single system of summer stopping adapted to orchard-houses, and to trees on the open wall. It will now be seen, also, that the winter regulation of the shoots can be conducted without any more distinction between house and open wall.

Recurring, then, to the classification of the shoots, it may be laid down as a fixed rule, that Classes 5, 6, and 7, should never be touched at the winter pruning. (See No. 9, Vol. VIII, p. 380.) Class 5, or the cluster-spur, is a perfect type, able to bear, and also to extend by means of its central leaf-bud. It is found in abundance on trees in pots, and on all kinds of cordons on walls. It is the mainstay of the close-pruning system. Figs. 5, 20, and 21, in support of this view, are photographed. On the shoots of diagonal-cordons of a certain age, this class is most common. In *fig.*

fig. 22, all marked *r*, are cluster-spurs, or "bonquets de Mai," as the French call them. Class 6, is the same spur after bearing. (See *fig.* 6, No. 9.) A little practice will enable the pruner to recognise it, and as it is short and has a terminal leaf-bud, it must be left untouched now, so as to make a new shoot during the summer. Of course, all below this growth will be bare for ever, but this is not of much consequence, as is evident in *fig.* 22, where *c* shows its relative length and position. Class 7, or fruit-spray, is also a valuable type

of shoot, very common in close pruning. In *fig.* 7, (No. 9), and in *fig.* 22, where it is marked *a*, we have examples of this class. In *fig.* 20 (No. 18), it is also seen, the engraving being taken from a photograph; it has a terminal leaf-bud, and can bear, having single blossom-buds. If it had no wood-bud close to its base, it might not be so useful, but it generally has. Whenever, however, it occurs in the centre of bush trees in pots, it will then be found to be too long and liable to become straggling; in fact, too like Class 8. It may, but only in this case, be cut out, otherwise when it occurs in close pruning it should be retained as much as possible.

Class 8, *fig.* 8, page 380, is barren spray, or "chiffon," as Dubreuil calls it, an unsatisfactory class of shoot, which had better be suppressed whenever no great gain is caused thereby. Bush trees in pots are frequently ruined by such shoots, and they indicate neglect of summer stopping, or weakness of the tree from want of air, &c. This type has single blossom-buds, but no terminal leaf-buds, hence its name.

Class 2, *fig.* 2, page 324, fruit-shoot of the ordinary character. In long pruning it is seen of almost any length; but in close pruning the beautiful shoot shown in *fig.* 21 is what we should prefer to see. In this case, being only about from 4 to 6 inches in length, we may allow it to remain untouched at the winter pruning, and cut it close in to the one or two wood-buds seen at its base, after it has produced fruit. When longer it then becomes useful to form a new branch, and thus ceases to have

the distinctive character of the shoot seen in *fig.* 21. Class 3, or the mixed shoot, is also common in young trees, and useful to shape them. Whenever, then, either of these types occur as extensions of any form of tree, they should not be shortened after the first year or so. In close pruning we soon cease to think of them as shoots, and rather incline to regard them as useful to bear the shorter ones only.

Class 1, *fig.* 1, page 324, Pure Wood-shoot. Naturally inclined to grow long, and having a few feeble blossom-buds at its extremity. Seen in young trees, and also in the extensions of older forms, and only useful in this respect, as laying the foundation of ripen wood.

Class 4, *fig.* 4, page 325, the Gross Shoot, or "gourmand" of the French. A vigorous development of Class 1. Useful to form young trees quickly, but to be carefully watched in older forms lest the tree be thrown out of balance. As the main stem of a healthy pyramid in the border, or in the case of a fan-shaped tree on the wall, where it is preferred not to divide the tree into two wings, much progress is made by it. It is readily known by its darker colour, the smallness of the leaf-buds, and the premature laterals thrown out at the upper portions. In close pruning, however, all these naturally long shoots become, practically, only useful to form the tree, while the naturally shorter shoots are retained to bear the fruit. By allowing the branches to remain at full length after the first or second season, and by the close summer stopping of the shoots,

we increase this distinctive character, and thus return to first principles.

Although more regular forms are desirable, there is no reason why irregular fan-shaped trees should not bear well when closely pruned. In some cases this form may be even the best adapted, and, no doubt, much advantage is gained by having a biennial supply of young and healthy wood. Gaps made by unskilful pruners may thus be filled up. *Fig.* 22, however, clearly shows how it is possible to have regularly disposed branches, and, at



Fig. 22.

the same time, to preserve the spurs on them for many seasons without recourse to amputations or fresh wood. In this specimen, drawn from nature from a diagonal cordon about ten years, old it is evident that the double spur is as old as the parent tree, and this without being more than a few inches in length or half an inch in diameter. The left spur bears the marks of numerous suppressions of former shoots. It retains two of these three or four seasons old, and only respectively 1 inch and 2 inches long. On the upper one are the cluster spur *b* and the fruit spray *a*; on the lower one is another cluster *b*, and this same type after bearing, *c*. Springing from the very base is a pure wood shoot *d*, which has been cut back to two wood-buds to form succession shoots. The spur on the right is not so thick as its fellow, but also shows marks of work. It bears three fruit sprays *a* and four cluster spurs *b*. Also at its base we find a shoot having groups of triple buds (class 2), and cut back above the lowest of these groups. This shoot is cut back for the same purpose as that marked *d*, and is itself marked *e*. It is, therefore, quite evident that the whole of the two aged spurs might be cut off after bearing, leaving some four or five new shoots springing from *d* and *e*. These spurs and their beautiful fruit-bearing shoots thus seen, are really a triumph of close pruning. No one can reasonably doubt that there is a promise of abundant fruit here, lying close to the wall, and produced by a type allowed to be that which bears the very largest Peaches. It would not be at all

necessary to remove these fine old spurs, as the shoots on them will not become very long for some time, so that the "modern close pruner" is never embarrassed by any want of material to select from. His great aim must be to endeavour to prune the shoots on the "alternate system," seen in *figs.* 18 and 19, which, duly attended to, will, after many seasons, produce specimens resembling *fig.* 22.

It remains only to add that *fig.* 23 represents the plan of

formation of a wall of diagonal cordons. As my good friend Mr. Rivers has lately erected a house which he justly estimates as likely, from its immense proposed length and novelty of design, to prove "one of the sights of Europe," and, as the back wall of this house is devoted to diagonal cordons, perhaps this design may be useful. A Represents the angle of a diagonal cordon against the wall. It might be even lower. B Would be a single cordon without the addition of the leader b, which will

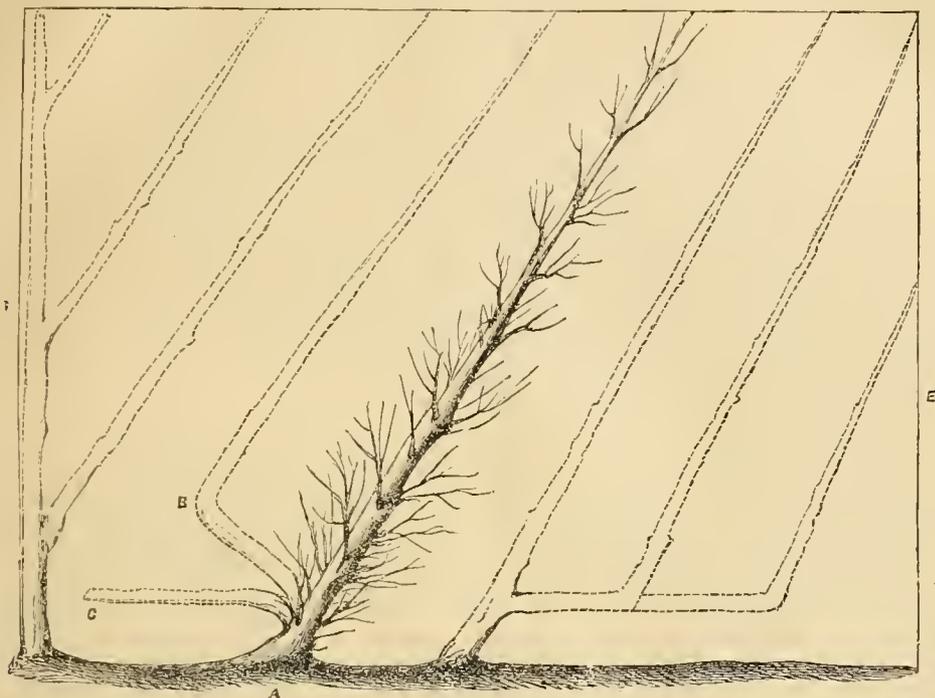


Fig. 23.

make it a double diagonal cordon. c Is a short branch to fill up an interval; not very necessary, nor very productive. d Is an upright cordon from which leaders are taken to fill up the wall space at one end, while e shows how the other end should be finished. If the horizontal portion of e were first well established, the leaders could be readily developed from it. It is also of importance in forming the double or triple cordon to keep back the second leader about half way the length of the first, otherwise the second leader would, from its vertical posi-

tion, absorb too much sap; in other words, establish the first leader well before the others are formed.

The late and lamented Dr. Lindley, in reviewing cordon training, objected to the sharp angle made at b, as shown in the frontispiece of that work. It is now remedied; but in actual practice it never was so severe. Otherwise, he thought well of this system, and it is now presented under an improved aspect, the result of five more seasons of experience.—T. C. BRÉHAUT.

WORK FOR THE WEEK.

KITCHEN GARDEN.

LITTLE out-door work can now be done where snow has fallen, and we believe this to be the case pretty generally. As this will be a leisure time, apply it in making preparations for the forthcoming spring. Let plenty of pots/berds be broken of different sizes, prepare stakes of all kinds and paint them, see that all the pots are perfectly clean and in a dry shed, and employ the men about such work as can be done within-doors, and which we have already pointed out. Carrots, as soon as the young plants in the hotbed are about an inch high, thin them out to 3 or 4 inches apart. Radishes are sometimes sown in the same bed; when this is the case they should also be thinned, and, when ready for use, they must be drawn with care, so as not to injure the tops of the Carrots. Cauliflowers, should the weather prove severe, the frames containing young plants should be covered with mats, or some material, to protect them; plants in the open ground should have some pliable rods bent over them, and then covered with mats. Cucumbers, as soon as the young plants have perfected their seed leaves, they should be potted, two in a pot, about 4 inches in diameter, using some of the soil already in the frame; plant them deep in the pot, so that a little fresh soil can be added as they grow.

The fruiting-bed should now be made; after the heat is up stir the dung inside the frame every other morning until the heat is sweet and regular. *Kidney Beans*, the plants in bearing should be placed in saucers or shallow troughs having some soil in them, which should always be kept moist; this will encourage the growth of roots, and will also prevent the heat of the flue or pipes drying the soil at the bottom of the pots. *Lettuce*, protect the frames which contain young plants for spring use, when the frost is severe; those which contain Cabbage Lettuce for present use must also be covered up. *Mushrooms*, beds should now be made in sheds or houses purposely fitted up for a spring supply. The horse-droppings should be well beaten down, and the bed should not be less than a foot in depth. Temperature-sticks should then be thrust to the bottom in several places and examined daily; when the heat has become somewhat regular, and not exceeding 80°, the spawn may be inserted just below the surface, and the bed afterwards earthed up. *Strawberries*, a few dozen pots may be placed in a frame where there is a gentle heat, the frame being so much more congenial to their growth than the atmosphere of a house. Continue, as occasion may require, to cover a portion of *Sea-kale*. *Rhubarb* may also be forced in a similar manner.

FRUIT GARDEN.

Some recommend deferring the pruning of Peach, Nectarine, and Apricot trees till late in spring, or, at all events, till the period when severe frosts are not likely to occur. It is certain that by late pruning the force of vegetation may be considerably weakened. The French recommend it for trees that are over-vigorous, but it is much better to effect this object by a reduction of the foliage of the over-luxuriant portions, whilst the weaker are allowed to retain all their foliage, for, by this means, the weak are encouraged and the strong checked, thus balancing the force of vegetation throughout. Late pruning weakens the whole, the side branches as much as the upright; it does not tend to produce the equilibrium so desirable, and therefore must be considered objectionable. The only question, then, is, Whether it may be best to prune now, and ensure the buds pushing boldly, supposing no severe frost should occur, or defer pruning, in case the weather should prove injuriously severe. In the one case the advantages are great and certain, whilst the injury that even severe frost occasions to well-ripened wood is trifling; besides, if such frost should occur, a slight protection will be sufficient. In pruning Gooseberry and Currant bushes let the centre of the bushes be kept open and free, and cut out all branches that cross one another, leaving the leading shoots about 10 inches apart, and topping at a bud inclining to the open space. All lateral twigs not required to form branches should be spurred-in to a few eyes. The fruit is borne on short natural spurs, or on clusters of buds formed on the old wood itself, and also on young shoots, which should be shortened to one-third of their length. Old worn-out branches to be cut back to a well-placed shoot.

FLOWER GARDEN.

The weather having changed to snow, leave off digging borders for a time, particularly when the soil is of a stiff nature. When snow has fallen it may be necessary to look round the shrubberies and relieve any of the trees and shrubs of their burden, where they are likely to sustain any injury. Secure all plants from frost that are likely to be injured by it.

GREENHOUSE AND CONSERVATORY.

A day temperature of 55° will be quite sufficient here at present; if this cannot be maintained without strong fires, be content with 45° and moderate fires, remembering that with this low temperature a very small circulation or motion in the air will suffice. A higher degree of heat would both hurry the beautiful Camellias and other choice flowers past their best, and also create a necessity for the application of more atmospheric moisture, which, unless a warm roof is secured by covering, must end in drip, to the great prejudice of the delicate flowers. Those who possess only one small greenhouse, and are desirous of a variety of early flowers, may now introduce from the cold frame or pit a few of the early Dutch bulbs, provided their pots are full of roots, without which the application of heat is vain. They should be kept in the darkest part of the house, or what will be more congenial to their habits, covered overhead with a mound of soil. The two points are easily accomplished by first piling up a mound (moss would do), and then inverting a pot over the whole. The continued damp atmosphere which has prevailed for some time, especially about London, has caused great destruction amongst many soft-wooded plants, they should be carefully examined individually, and every infected leaf or branch removed. Occasional slight fires must be applied, but this should be carefully and judiciously done, or the cure will be as bad as, if not worse than, the disease. The injury greenhouse plants suffer from overheating is at least equal to that from frost.

STOVE.

Examine the various tubers and bulbs that are dormant, and see that they are in a proper condition, neither suffering from wet nor mouldiness. Achimenes and similar plants will soon require to be excited; there is little to be gained, however, by commencing before the season. When heat is applied to start them during winter, the shoots are of necessity drawn and etiolated. It is at all times better to do things well in good season, for it is scarcely possible to do them well at a bad time. The art in this department at the present season is to prevent plants from growing.

FORCING-PIT.

The tank forcing-pit may be made everything that can be desired wherever there is a regular provision for bottom and atmospheric heat from a fire; but it is not so with the dung forcing-pit in the dead of winter. The following plants may now be introduced with every prospect of success, the plants being in

good order:—Gardenias, Hedychiums, Gesneras, Daphne encourum, Clorodendrons, Cytisus, Homocynckles, Sweet Briar, Roses, Lilacs, Rhododendrons, Azaleas, Kalmias, forcing Pinks, especially the Anne Boleyn, Aloysia citriodora, Hydrangeas, and Heliotropes. It is not meant that these are all equally eligible for forcing, but that any or all of them may be attempted if well prepared for the purpose in the previous summer, by early growth, early rest, and a potful of healthy roots. With such a miscellaneous mixture it is evident that no extremes of atmospheric management should be pursued; the amount of moisture which the Gardenias, for instance, will revel in would prove prejudicial, if not destructive, to such plants as the Heliotropes.

PITS AND FRAMES.

Should the lights become green from damp or other causes, take advantage of favourable weather and have them washed, it helps to strengthen the plants at this dull season by admitting more light. Surface-dress the pots, and pick off all damp leaves. Place in heat *Lobelia fulgens*, *splendens*, *ignea*, &c., for potting off in February; they do much better treated in this way than potted off earlier, as the young roots, having been excited, take at once to the soil. *Calceolarias* which were put in last October are now ready to pot-off: therefore do this at once with such as are rooted, and should there be any that are not, place them in a gentle bottom heat. All new kinds of *V. renas*, where the stock is short, should be excited for cuttings.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

SEE last week as to vegetables in general, and Sea-kale, Rhubarb, and Asparagus in particular. Had a nice frost on Tuesday morning, which enabled us to have some dung wheeled from old hotbeds to borders and quarters now stocked with winter stuff, but which ere long must go into less room. What storms of wind and hail on Monday and Tuesday! On the afternoon of the latter day, though the wind was westerly and the barometer low, the sky was so clear and sharp, that we had to get everything we could in the way of litter for protection; but it was next to a false alarm. However, it is of no use to shut and double-lock the stable-door when the steed is stolen. As an act of retaliation, a lot of Cauliflowers, &c., we did not uncover on Wednesday, though after breakfast we were unable to wheel without making a mess, and therefore, took to other work. One secret every gardener should aim at possessing, and that is, the knowledge how to do work without making work. Of course there are occasions when a job must be finished whatever the weather is; but much available labour will be turned to the best account when the work is proportioned to the weather.

Mushrooms.—For fear of frost put in a little litter over the bed in the open shed, and which is still producing, but more sparingly now. The first bed in the Mushroom-house on a shallow shelf having produced heavily, and shown signs of decline, though many *Mushrooms* are coming as pin-points, the surface being a little rough by twisting off the crop, we gathered the two or three dozen of the larger *Mushrooms*, stuck the stalks in damp moss to keep for a day or two, as by that time the others will be large enough, and swept the bed nicely all over with a hand hair broom, so as to leave the surface smooth and hard again; and as the bed seemed moist enough, just sprinkled a little dry hay over it, and put two or three barrowloads of hot dung in what some day will be the ground bed, below this platform one. Judging from what generally takes place, in about ten days, when the *Mushrooms* that are buttons now are gone, the bed will be pretty well covered in good condition by those now scarcely larger than pin-points. This slight sprinkling of hay over the surface of the bed will keep the bed more equal in heat and moisture than making the house hotter would do, and then the fuel also is saved.

Lest some should think we are wasteful with our hay, we may mention how we obtain it. On parts of the lawn at a distance from the house, and where a number of evergreens grow, we do not cut the grass until it is of a good length. So many leaves of evergreens, and bits of twigs, render it unfit for hay for cattle, but when nicely made and placed in a little rick it becomes useful for all such purposes, and also for covering up plants under glass, in frames and pits, in very severe weather. We keep this as a reserve-heap as long as we can. One year, after we had placed our *Geraniums* for beds,

under mats, calico, and frames of straw made so thin as to let light enough through them, we would have lost most of our plants by a severe frost in the end of April, if we had not possessed a piece of this rough stuff to go to and shake gently all over them. We shall never forget Mr. James Barnes, of Bicton, saying in one of his pithy papers, "A few hours will sometimes destroy the preparations of a season, and the mortifying thing then would be, that the sun would shine as brightly, and the grass would grow as green, and the birds would sing as merrily, as if there had never been that cruel frost that made such havoc in a few hours as to pretty well embitter for you all the pleasing events of the season."

Our second piece in the Mushroom-house, say 13 inches deep at back and 10 inches in front, that was spawned nearly seven weeks ago, is now beginning to have white places on the surface, in which the incipient Mushrooms can just be perceived. In this bed there is also a sprinkling of the rough hay, and in these cold days when we put the hand on the surface of the bed, there is just that nice gentle warmth that tells us the spawn is working away kindly. The third piece is spawned and earthed up, and going on all right, and the fourth piece has the dung beaten down; and as it had been dried a little and thrown into a heap in a shed before bringing it on, there has been no trouble with an extra moist atmosphere as there was at first, and to counteract which we used mats suspended over the first bed, as detailed some time ago. Our practical friends will excuse these simple details, as some who are beginners fail because they neglect simple matters. From circumstances we could not make a large bed if we wished, and we have become so used to these small beds, and having them in succession, that we do not think we would care to change if we could. Good Mushrooms, valuable at all times, are particularly so in winter, and are easier grown than they are in summer. One word let us add for the benefit of amateurs who try to grow them in empty stalls of stables, byres, &c., and that is, when the weather becomes cold, just add a little more covering over the bed, and lessen it when it is milder. Always bear in mind that an excess of heat is more dangerous than cold. The spawn will stand much cold, if not run out with too much wet. The bed should never be hotter than the hand, when that hand is as warm outside as the blood is inside. The surface of the bed, before the Mushrooms come through, may feel a little warm—about 70°, but, as soon as safely through they will be better if the temperature is from 55° to 60°; but much lower would do, provided the bed was not too much cooled. We are glad to find that some are growing Mushrooms in large pots. We like boxes better, because the wood secures a more equable temperature, but either will do. One advantage of the pots is, that if the material become too cold to produce Mushrooms freely, the pot may be plunged in a heap of fermenting material so as to raise the temperature to from 70° to 75°, but taking care that the surface is not continued at that heat.

Asparagus.—Had the beds and single rows and ridges, where the buds were near the surface, covered with half-rotted dung and tree leaves from spent hotbeds, which will make them all secure from the frost, and help to nourish them besides. We will throw a lot of burnt rubbish and clay over this when we can, which, from the vegetable rubbish contained, will act very much in the way of a salt-dressing. Top-dressing Asparagus we consider of more importance than placing manure at great depths, and did we not want the short cuttings from the lawn for other purposes, we would give a fair portion of them to Asparagus-beds.

As it happened, we need not have troubled ourselves as to frost at present, for during the night there has been, what has been expected, a heavy fall of snow, measuring 8 inches deep in open places, this Thursday morning, and the snow still falling heavily. The first part of the winter has resembled that of 1860-61, and if there should now be an approach to that season, the snow if it remain some time will be a great protection, though it will hinder out-door work.

Kidney Beans sown in four and five-inch pots have been transferred in a piece into nine-inch pots, using rich light soil that had been warmed. This plan is, perhaps, better than sowing in boxes and then transplanting, as that always gives a little check. After this season we prefer sowing in pots, or boxes, where they are to produce, filling the pots three-parts full, and placing about five Beans in a pot; but this requires a good deal of room at first, one pot occupying the space of a number of small ones, and the small ones answering equally well until the stems begin to run.

Cucumbers in rather large pots placed about the middle of a

small pit that they might have more light in this dull weather. Cucumbers and Melons may now be sown where there is a suitable heat, but we always think that young Melons do best when raised in a hotbed, though they be transferred afterwards to beds heated by hot water or flues.

FRUIT GARDEN.

Strawberries in pots are just beginning to move. Those set on very slight hotbeds, as detailed lately, are also moving, and when the weather changes we shall take them into the Peach-house, where, as lately stated, we have lighted the fires, and there are signs of movement; the temperature from fire heat is from 45° to 50°, but seldom up to the latter figure as yet, with air early and a rise from sunshine when we can. Cut most of the late Grapes to hang up, so as to have the house cleaned in this stormy weather; washing glass, woodwork, Vines, stages, &c., with soap water, syringing all with warm water, taking away a little of the surface earth of the floor, so that all shall be clean and nice. Few things look worse than the glass of houses dirty and covered with green slime, and strings of fungous matter suspended from the sash-bars and walls as if these had long been strangers to limewash. Washed these walls well before colouring them afresh. These little precautions do much to keep away shoals of insects. This house we shall fill with plants directly, and they will remain there until the buds break naturally. We generally bring all the Vine-stems to the front of the house until the buds all break, because they are thus out of the way, and break more regularly from being for the whole length in a similar temperature. Last season they were suspended under the roof about 2 feet or more from the glass, and in that position also they broke pretty regularly. This last plan involves less trouble afterwards, but for early forcing we prefer the first mode.

Orchard-houses.—Fortunately we have a heap of Laurel twigs that had been used as evergreen wreaths, and as the roofs of those houses are now covered with snow, we shall bruise a lot of these shoots, and have two or three fires in each house to fill it with smoke from these bruised leaves, &c., taking care so to cover each fire heap with moss, that no flame shall issue. This Laurel smoke will find its way into every hole and cranny, and kill everything that is alive. We shall do this by way of precaution, for though no insects have shown themselves still there may be some, and the smoking will cost nothing but the labour. The paint and the wood of the trees should be dry before such smoking. If the wood and paint are wet the paint will assume a dark colour, from a prussiate of lead, but even that will wear off if let alone long enough. The less lead there is in the paint the less will it be affected by such smoking, even if the paint be wet.

ORNAMENTAL DEPARTMENT.

As soon as the men can stand out, the walks and thoroughfares must be cleared, and many shrubs eased of the weight of the snow, which otherwise would bend them down and break them. All plants in cold frames and pits, from having had plenty of air, and being kept very cool, and shut-up cool, will have no uncovering whilst the snowstorm lasts, unless it remain a very long time. There is no better protecting medium than the snow, and why should we remove it? As soon as the snow begins to melt, however, it should be removed, and cleared away from the sides, so that the moisture may not soak down and rise again among the plants inside.

We have frequently stated that where there is nothing but *Cold Frames and Pits* for keeping bedding and other half-hardy plants, instead of going down in a pit to obtain heat, it is better to go up for dryness. We have lately done little in this way ourselves, but we have previously proved the advantage of it. Let the platform for the frame or pit be some 6 or 9 inches above the surrounding soil, have a sloping platform all round some 4 feet in width, and the outside of that at least 6 inches below the frame platform, and cover this outside platform with a coating of tar, and then with gravel. According to the thickness of the gravel you must sink the surrounding walk more, and this will carry off the water. If it could be done in summer we would coat the ground inside the frame or pit with tar and gravel in the same way, the smell would be all gone before autumn; and then a layer of dry rough ashes for setting the pots on, and great care in watering, taking out the plants that are dry, and watering them outside, would prevent much damp in such places in winter. We keep a good many plants under frames raised over hotbeds in spring and summer, just where these stood, but though we place a board in front or a rough spout to prevent the water that runs off the glass falling

on the lining in front, and thus penetrating into the bed, and then rising among the plants, a lot of moisture will rise notwithstanding all this little care. The only advantage of using the remains of such hotbeds is, that if the plants are rather backward in the autumn, by placing a layer of hot dry leaves below them you can give them a little encouragement before the shortest day comes. But when young plants are pretty well established before the autumn, frames or pits managed as above will be far preferable, as moisture cannot rise up from below, and what falls from the heavens will run away a good distance owing to the sloping ground round the pit and frame.

To "Emma," who wishes her doubts solved in this place, and who cannot use artificial heat, we would say, for the intended brick pit do not sink it at all, build it as soon after May as you can, let the bottom be 6 inches above the surrounding ground, let that ground slope outwards, cover the inside ground and the outside ground with a coating of tar, from one-sixteenth to one-eighth of an inch thick, cover that with an inch of rough gravel, roll, and when the tar comes through add more gravel finer, dry, and roll again, and perhaps a rain, and all will be hard and scentless before the end of summer. We would also paint the outside of the walls with tar to keep out damp, and water as above in winter. For summer-watering leave holes a little below the level of the floor to let out water when you may use it liberally. Tie a layer of 2 or 3 inches of straw along the walls in autumn, and the chief care necessary will be to keep frost from getting in through the glass, and for that waterproof-covering is best, with enough of litter or dry material to keep out the frost. Frames could be set down and the sides secured with straw in the same way. On the whole the straw is the neatest and the best, and keeps out frost without heating the wall at all. Where appearance in summer is no great object, the straw may remain. We have had it thus tied on and remaining pretty neat and available for three years. We are the more particular as to this because we have seen plants a mass of rotteness from frost, in frames and pits, where ample protection had been used over the glass; but in it came, through the wall or the boards, at the sides. As to protection for the glass, the best and cheapest in the end are wooden covers or shutters made to fit the sashes, and of good half-inch or three-quarter-inch deal well braced beneath. The next best, perhaps, is asphalt, supported by a frame, made of the right size; but two persons are required to take off and put on such covers. The next would be light waterproofed material, which could be rolled along and secured back and front with strings. We need not speak of straw frames, mats, &c., all are good enough when better cannot be had.

Though we have spoken of letting our cold pits and frames remain covered up in such weather, this must not long be the case, where artificial heat is given. Where that heat is supplied, all the light possible, though such as can be obtained in a dull or snowy day, must be given, and though in such a day as this we would not uncover, still it would not do to let them remain very long in darkness. We have had frames and pits with *Calceolarias*, *Verbenas*, &c., shut up in severe weather for six or seven weeks, and when gradually exposed to light they were looking little different from what they would have done with the darkness of only one night; but they did not grow or lengthen all the time, as the temperature inside would not average more than from 33 to 37. The late Mr. Errington used to let his Cauliflowers under hand-lights be slightly frosted before an expected continued frost, and then he protected the glasses with litter to keep more frost from entering, and so long as the frost continued the litter remained. There could be no growth in the Cauliflowers, and, therefore, no danger from the continued darkness, and this darkness in such circumstances was less injurious to the plants than being exposed to a piercing dry air and even a bright sky during the day, and a covering-up every night.

We would submit these remarks, and what was said last week about proportioning heat to light, to all beginners, as they will equally apply to greenhouses and plant-stoves, forcing-houses, forcing-pits, &c. The great point in such weather is to keep the plants safe, so as to feel no check, but the heat still low enough not to encourage much elongation of the shoots. Mere greenhouses may range from 40 to 45°; conservatories, according to the plants in bloom, from 45° to 50°; plant-stoves from 55 to 60°; forcing-pits may have a bottom heat of from 70 to 80°, and a top heat of from 55° to 60°, or a little more if there should be more light. 5° more may be added, with air given early, however little; if very cold, enough may come

into open houses through the laps of the glass; if the weather should be severe, give only a little at the highest part of the house, unless there are means for heating and moistening the air before it finds its way among the plants. As a rule, as little water as possible should be used; but if the frost should turn out severe, and even for these comparatively low temperatures a good deal of fire heat should be required, below the floors and stages carefully with the syringe will be better than giving too much water to the plants. In frosty weather, and in a sunny day, it is better to let the house rise 10° or 15° above the temperatures just stated, in preference to giving entrance to much cold dry parching air. A little air given early will prevent any necessity for this. Be assured that strong fires at night, and even during the day, and sashes tumbled down for great spaces, when the sun is powerful, are alike a waste of fuel and an injury to the plants in very cold weather. If sun is expected it is better that the fires should go out, than that a great amount of air should be given under such circumstances.

Such weather furnishes a good opportunity for forwarding house work, washing plants and fruit trees, examining Potatoes, Dahlias, fruit-rooms, stopping and tying Geraniums, pruning and potting Fuchsias, putting in cuttings of whatever is scarce, washing pots with heated water, cleaning sheds, making tallies, and pointing stakes, &c.—R. F.

COVENT GARDEN MARKET—JANUARY 15.

So abundant is the growth of the various Winter Greens this season, that the late inclement weather has but slightly influenced our markets. The foreign trade has, however, been much interrupted. Apples are becoming comparatively scarce. Dessert Pears consist of Glou-Morceau, No Plus Meuris, Beurre de Rance, and Easter Beurre. Potatoes are amply supplied.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples.....	1/2	0	10	0	Melons.....	each	3	0	5	0	
Apricots.....	doz.	0	0	0	Mulberries...	punnet	0	0	0	0	
Cherries.....	lb.	0	0	0	Nectarines...	doz.	0	0	0	0	
Chestnuts.....	bush	8	0	16	0	Oranges.....	100	4	0	10	0
Currants, Red	1/2	0	0	0	0	Peaches.....	doz.	0	0	0	0
Black.....	do.	0	0	0	0	Pears (kitchen)	doz.	2	0	4	0
Figs.....	doz.	0	0	0	0	dessert.....	doz.	1	6	0	0
Filberts.....	lb.	0	9	1	0	Pine Apples...	lb.	6	0	10	0
Cobs.....	100 lbs.	0	0	160	0	Piums.....	1/2	0	0	0	0
Gooseberries..	1/2	0	0	0	0	Quinces.....	1/2	0	0	0	0
Grapes, Hambro.	lb.	6	0	10	0	Raspberries...	lb.	0	0	0	0
Muscats.....	lb.	10	0	15	0	Strawberries...	lb.	0	0	0	0
Lemons.....	100	6	0	10	0	Walnuts.....	bush	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes....	each	0	0	10	0	Leeks.....	bunch	0	3	to 0	0
Asparagus....	bundle	8	0	12	0	Lettuce.....	per score	1	0	2	0
Beans Broad..	bushel	0	0	0	0	Mushrooms...	pottle	1	6	2	6
Kidney.....	100	3	0	4	0	Mustd. & Cress	punnet	0	2	0	0
Beet, Red....	doz.	2	0	3	0	Onions.....	per bushel	3	0	5	0
Broccoli.....	bundle	1	0	2	0	pickling.....	quart	0	0	0	6
Brus. Sprouts.	1/2	0	2	0	0	Parsley.....	1/2	1	0	1	6
Cabbage.....	doz.	1	0	2	0	Parsnips.....	doz.	1	0	2	0
Capsicums....	100	0	0	0	0	Peas.....	quart	0	0	0	0
Carrots.....	bunch	0	4	0	8	Potatoes.....	bushel	2	6	4	0
Cauliflower...	doz.	3	0	6	0	Kidney.....	do.	3	0	4	0
Celery.....	bundle	1	0	2	0	Radishes doz.	bunches	0	6	1	0
Cucumbers...	each	2	0	3	0	Rhubarb.....	bundle	0	0	1	0
pickling....	doz.	0	0	0	0	Savoys.....	doz.	0	9	1	6
Endive.....	score	1	0	2	0	Sea-kale....	basket	2	0	3	0
Fennel.....	bunch	0	3	0	0	Spinach.....	bushel	2	0	3	0
Garlic and Shallots.	lb.	8	0	0	0	Tomatoes....	1/2	0	0	0	0
Herbs.....	bunch	0	3	0	0	Tunrrips....	bunch	0	4	6	0
Horseradish..	bundle	2	6	4	0	Vegetable Marrows	dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

- H. Cannell, Fuchsia Nursery, Station Road, Woolwich.—*Select Descriptive List of Fuchsias and Verbenas.*
- B. S. Williams, Victoria and Paradise Nurseries, Holloway, London.—*Descriptive Catalogue of Flower and Vegetable Seeds.*
- H. Lane & Son, Great Berkhamstead.—*Fruit Catalogue. Descriptive Catalogue of American Plants, Conifers, Trees, and Shrubs. Catalogue of Roses. Catalogue of Azalea indica.*
- J. C. Wheeler & Son, Gloucester.—*Wheeler & Son's Little Book, or Select Seed List.*

TO CORRESPONDENTS.

SELLING GRAPES (J. Rodgers).—Write to Messrs. Webber & Co., Ironiters, Covent Garden Market.

EARTH POTS (H. E. A.).—We never heard of moulds for making "earth pots," and do not even know what they are.

CAMELLIA CULTURE (*One of Your Very First Subscribers*).—If your plants are pot-bound, or, for their size, in very small pots, and do not appear to have been shifted for a number of years, then re-pot them; but, if they have been recently potted, and the soil and drainage are good, you had better let them remain as they are, especially as you propose cutting them in. If you pot the plants, turn them out carefully, remove the drainage, and pick out the old soil from amongst the roots, being very careful not to break the fibres, which are extremely brittle. Use any size of pot that will allow of half an inch of fresh soil being placed around the ball, and working the soil so as to leave no vacant space between the ball and the sides of the pot, and let the collar be slightly elevated in the centre of the pot. Drain the pots well; one-fourth their depth is not too much. Use none but clean pots, well-washed inside as well as outside, and let the compost consist of two-thirds sandy turfy peat (not bog soil) or the mossy brown peat used for growing (Orchids), and one-third turfy loam, rather strong, but not heavy—that from rotted turves a year old is best, the whole broken and chopped with a spade, and made pretty fine, but not sifted, adding one-sixth of silver sand if the soil is not sandy enough. The end of March or early in April is a good time to pot them, or about a fortnight after the bloom is over. About the middle of April the plants may be cut-in, and this you may do to any extent; but it is better to give them bottom heat afterwards in order to induce them to break well, and such encouragement would be especially useful in your case if they are fresh-potted. A bottom heat of 75° for six weeks would be of great service in inducing them to break, especially if you cut them in much. Towards the end of April maintain a temperature of 50° at night, in a fortnight increase the temperature to 55°, and in the course of another fortnight to 60°, with a rise by day of 5° in dull weather, 10° when cloudy with clear intervals, and from 15° to 20° with sun and a cloudless sky. Give air on all favourable occasions. Sprinkle the paths, floors, and every available surface twice daily, morning and evening, with water of the same temperature as the house, and syringe the plants overhead morning and evening, until the young shoots are a few inches long, then discontinue the morning syringing, giving air early so as to have the leaves dry before the sun shines powerfully upon them. When the shoots have done growing, gradually discontinue fire heat, and give all the air possible, decreasing the amount of moisture, but still sprinkling the paths, &c. twice daily. As you have the option, do not turn the plants out of the house, but keep them as cool as possible by admitting day and night as much air as possible.

PLANTS FOR ROCKWORK (*Old Deer*).—On the shady parts of your rockwork you may grow the following Ferns, watering them copiously during dry weather when growing. *Asplenium adiantum-nigrum*, *A. viride*, and *A. trichomanes*; *Aloosorus crispus*, *Blechnum spicatum*, and its varieties *cristatum* and *ramosum*; *Lastrea obovatis*, *L. Filix-mas*, and its varieties *cristata* and *Schofieldii*, *L. rigida*, *L. dilatata*, *L. Fœniculii*, and *L. cristata*; *Osmunda regalis*, *Polypodium vulgare*, *P. phegopteris*, *P. dryopteris*, *P. alpestre*, *Polystichum aculeatum*, *P. lobatum*, *P. anculare*, and its variety *proflerum*; *Scelopendrium vulgare*, and its varieties *indivisi-folium*, *multifidum*, and *ramosum*; *Cystopteris Dickiana*, *C. fragilis*, and variety *dentata*; *Athyrium Filix-femina*, varieties *apuaforme*, *depuperatum*, and *plumosum*; *Oncoclea sensibilis*; *Osmunda cinnamomea*, *O. interrupta*; *Struthiopteris germanica*, and *pennsylvanica*; *Polystichum acrostichoides*, *P. proliferum*, and *P. pungens*. Of hardy Heath for the sunny parts.—*Erica vulgaris* *Alporti*, *alba*, *Hammondii*, and *rigida*; *E. cinerea*, varieties *alba* and *coccinea*; *E. vagans*, varieties *alba*, *carnea*, and *rubra*; *E. scoparia*, *E. tetralix*, *E. herbacea*, and variety *carnea*; and *E. ciliaris*, *Orobus vernus*; *Arabis albidia*, and *alpina*; *Aubrieta deltoidea*; *Lotus corniculatus flore pleno*; *Iberis sempervirens*, and *saxatilis*; *Genista triquetra*, *Dryas Drummondii*, *Draba aizoides*, *Alyssum saxatile*, *Saxifraga affinis*, *Aizoon*, *Bucklandii*, *oppositifolia*, and *polita*; *Dianthus alpinus*, *D. deltoidea*, *D. floribundus*, and *D. creuentis*; *Cerastium Biebersteini*, and *C. tomentosum*; *Sedum Ewersii*, *S. album*, *S. kamtschaticum*, *S. Sieboldii*, and *S. rupestre*; *Stachys lanata*; *Silene alpestris*; *Senecio alpestris*; *Sentellaria alpina*; *Coehlearia groenlandica*; *Armeria vulgaris* *alba*; *Alchemilla alpina*; *Ajuga reptans variegata*, and *Cheiranthus alpinus*. The Ferns are for the shady, and the Heaths and following plants for the sunny situations.

PROPAGATING MRS. POLLOCK GERANIUM (*A Constant Reader*).—You will hardly be able to obtain cuttings from your autumn-struck plants before the middle of February, even if you keep these in a temperature of from 45° to 50° from fire heat, which is sufficient forcing. The tops of the plants may then be taken off, and made into cuttings. They will soon root in a mild hotbed of 75°. The plants being re-potted, plunge the pots in a bottom heat of 75°, with a top heat not exceeding 55° from fire heat, and in six weeks you may be able to obtain another batch of cuttings. Under this treatment you will obtain a quantity of small plants, which will not afford anything like the same degree of satisfaction that one-half or one-fourth of the number of well-grown plants would give. Plants of this Geranium require to be strong and well-hardened off before planting out.

GRAPES REMAINING ON THE VINE (*J. C.*).—However long they may be allowed to remain, they will have no injurious effect on the crops of next season.

DRACENA FERREA AND PALMS IN A DRAWING-ROOM (*E. D.*).—The cause of the leaves being spotted is their being constantly syringed whilst the soil is kept constantly moist by too frequent waterings. Water only when the soil becomes dry, and only syringe occasionally to free the leaves of dust. Such plants, though retaining their beauty in rooms for a long time, cannot be grown there, and should therefore be returned in good time to the stove, in order to perfect their growth.

CRYSTALLISING FLOWERS (*Ellen*).—We have no experience of this practice, nor did we ever see flowers so treated. The following, extracted from an American paper, may aid you:—“CRYSTALLISING FLOWERS.—It is done by suspending or repeatedly dipping them in water saturated with alum. This, however, can only be done with dried specimens. The freshness and beauty of flowers can be preserved by dipping them in glycerine.”

CONSERVATORIES AT KEW AND CHATSWORTH (*J. H. J.*).—The dimensions of the new conservatory in the pleasure grounds at Kew are as follows:—Centre—length, 212 feet; breadth, 137 feet; height, 60 feet. Octagons—each, 50 feet in diameter. Wings (not yet built)—length, 112 feet; breadth, 62 feet. Total, when complete, 582 feet long, and covering a superficies of 1½ acre. Length of pipes, 34 miles. The length of the conservatory at Chatsworth is stated in McIntosh's “Book of the Garden,” to be about 282 feet; its breadth, 120 feet; height, about 60 feet.

ROSES IN POTS (*Old Subscriber*).—We cannot give you much encouragement as to growing Roses in a room. They will not do well. You must place them as near the window as practicable, shifting them into larger pots now and using a compost of turfy and rather strong rich loam. After potting plunge in coal ashes in a sheltered situation, and protect from severe frost by a little dry litter put over them, but removed in mild weather. You may take them into the room in February, and then prune them, cutting the strong shoots to four, and the weaker ones to two eyes. Keep the soil just moist until growth commences, then keep it tepid water well-watered; sprinkling them morning and evening with tepid water will also be beneficial. After blooming plunge the pots in coal ashes in an open situation. We shall have an article on the cultivation of Roses in pots shortly, but we think your Roses would be much better planted out. All would do well in the beds, whilst they would afford you but little gratification if grown in pots in a room. Celine Forester, Niphetos, Sol-faterre, and Comtesse de Barbantane would be the better of a wall with a south-west aspect, or at least a warmer situation. The others would form a fine margin to the beds of half-standards. The Roses newly planted in the beds should not be pruned until the first week in March.

VINES MILDEWED (*W. N. B.*).—The two Vines that are mildewed had better be coated with a mixture of sulphur and lime in equal parts, brought to the consistency of paint by the addition of soft-soap water, made by dissolving 2 ozs. of soft soap in a quart of water. In order to make this mixture adhere, add to it as much clay as it contains of sulphur. All the Vines should be washed or painted with this composition now, brushing it well into every crevice. The mildew will destroy the Vines unless checked. Should it reappear, dust the parts affected with flowers of sulphur.

LEWISIA REBIVIVA—VARIEGATED IVIES (*A Constant Reader and Purchaser*).—All that we know of this plant is that it is a native of North America, and is included in the Natural Order Cruciferae. It was discovered and named by Pursh, a Prussian botanist, whose “Flora Americana Septentrionalis” was published in 1814. The roots are nutritive, a kind of salep being made from them by the Indians, who collect them in large quantities. We do not know whether our nurserymen have the plant. Our correspondent will be obliged by a list of the best hardy small-leaved variegated Ivies.—*J. H. C.* would be obliged to “*J. H.*” for information as to where the *Lewisia* can be procured and how to grow it.

PERSIAN MELONS (*W. H. Dalston*).—There are many varieties of Persian Melons, and whoever told you otherwise was certainly wrong. McIntosh, in his “Book of the Garden,” describes eight varieties of the Persian. We cannot identify a variety of the Melon by its seed; but if you have the *Isphahan*, that is one of the varieties, and excellent.

HISTORY OF GARDENING (*Erdington*).—If you send 5s. 6d. in postage stamps you can have Johnson's “History of English Gardening,” free by post. It is out of print.

HEATING TWO HOUSES FROM ONE TUBULAR BOILER (*S. S. G.*).—If, in heating two houses the pipes are taken away level from the boiler, you will not be able to sink them in one house, 18 inches, to go under a pathway, if the first level is to be continued afterwards. No pipes should go below the level of the boiler. If a close boiler is low enough to allow the pipes to rise into the lowest house to be heated, you may elevate the pipes as you like in another house. Starting from the same level for both houses will not interfere at all with the good working of the pipes that you raise higher in the second house; but sometimes the flow will be strongest in the house proportionally raised above the boiler. This you can easily regulate by a valve, which will be needed if you wish to have the power of working each house separately.

MEALY BUG ON ORANGE TREES (*H. T.*).—For Orange trees growing in the open air so infested with mealy bug, we would syringe strongly with quassia water, or soft-soap water, say 1 oz. of each to the gallon—if washed with the hand and brushed all the better. In a few days syringe the trees well with clean water at 140°; then have a simple thickish paint formed of melted soft soap and clay, and with a small brush paint the stems and dab over every little colony, or a single one as it appears, with the point of the brush. This simple paint will imprison the insects and kill them for want of air, and will not hurt the trees, as many other mixtures would be apt to do. We once cleaned a lot of small Apple trees that were eaten up with American blight, by first washing with strong soap water, then painting the trees all over with clay paint, and using this paint to dab up every insect that appeared during the summer. A little soft soap in it prevents its drying too quickly and cracking. Wherever these cracks take place, and there are eggs beneath, the latter will be hatched. Of all paints for insects clay is the cheapest and the best.

EDGING OF HOLLY (*A.*).—An edging, 4 or 5 inches high, of the common Holly, will look very well; the only objection to it will be when leaves are blown into it, as it will be difficult to get them out. We fear, however, unless your climate is mild and moist, you will not succeed by planting cuttings of Holly round the bed in double or treble rows. In most places they require to be protected in winter by hand-lights, the cuttings being inserted thickly in sandy soil in the autumn, when many root the next spring. We think you would succeed much better if you could purchase small plants 3 or 4 inches high.

HEATING WITH HOT WATER (*S. L.*).—We think all the arrangements will do, only as the pipes are sunk under the pathways, we would have four in each place instead of three; and instead of having your central bed sloping like the roof, we would have it of equal height back and front, say from 15 to 24 inches; the plants will then look much better from either pathway. We presume that the side ventilators come down under the ground level, to enter by an opening below the border, and thus the cold air will be brought in contact with the pipes—a very good plan. We hope top air is sufficient. It is all nonsense about the bees influencing the appearance or flavour of the seeds, but not the pulpy matter usually called the fruit. Messrs. E. G. Henderson are rich in Cyclamens. It would not suit to print a manual on Cyclamens as you propose.

NEW YORK NURSERYMEN (*A Constant Reader*).—We cannot select from them, but you will find a list in the “Gardeners' Year Book for 1863.”

PRICES OF FRUIT (*Mrs. S.*).—Your suggestion cannot be adopted. Dealers will not tell us the prices they pay for wholesale quantities.

GLASS EDGING FOR BORDERS (*G. T. E.*).—The glass tiles for this purpose may be had of Messrs. Kilner, glass manufacturers, Thames Street, London.

TOP-DRESSING A LAWN WITH SAND (F. J.).—You may apply the dressing of sand to the lawn in February or up to the middle of March, a quarter of an inch in thickness all over the surface will not be too much; but in what way it can tend to make the grass finer we are at a loss to know. Ashes would do just as well if passed through a sieve with a quarter-of-an-inch mesh, and will not be so likely to favour the growth of moss. A dressing of rich compost would be better than either. Sand would have a tendency to destroy moss for a time, and worms do not like it, but sandy soils invariably have a bad turf, and the grass of lawns is finest where the soil is richest.

GUANO WATER FOR TULIPS AND RANUNCULUSES (Idem).—It may be given to all plants with advantage during the growing season when water is necessary, but not at this period of the year. None will be needed for these plants until the "buttons" show, and then a good watering twice a week if the weather is dry, or once if the soil is moist, will do good, continuing the application till the plants are in bloom.

PLANTING CAUCASIAN (Idem).—You may plant, or rather transplant them with balls during dry mild weather next month, or any time in mild weather up to April.

PLANTING LAUREL (Idem).—From the beginning of March to the middle of April during showery weather is a good time to plant Laurels.

COVERS FOR THIS JOURNAL (Idem).—We have covers to hold a year's Numbers of THE JOURNAL OF HORTICULTURE, the price of each of which is 2s. 6d.

WOOLLYCE IN DUNE (Turmanic).—We were similarly situated with all our dung for hotbeds until we let the fowls have the run of it, and we find them ever busy, especially after it is turned and thrown up to heat. We think your dung has been put on dry, for had it been thrown up to heat and well watered, the woollyce would not have troubled you so much. We would remove the dung, throw it into a heap, and water it well, unless it be already wet, and then pour boiling water into the pots to kill the woollyce. You may then place the pots over the Sea-kale manure, covering with hot dung, throw into a heap and turned over once or twice, watering each time, if necessary, so as to bring it into a high state of fermentation, which is what we recommended to be done to the manure heap before the dung is used for hotbeds.

SOILING MIGNONETTE AS A GREENHOUSE (Idem).—You may sow Mignonette in your greenhouse along with other annuals, and with every chance of success, only keep the plants near the glass, give them abundance of air, and do not let them grow too long in the seed pots before pricking off, and in doing so do not put too many plants in a pot. Liberal treatment will make them fine. The beginning of March will be sufficiently early to sow them, though you may do so now, only the seedlings will require greater care, and not so much water. Only hardy annuals should be sown at this early season in a temperature of from 40 to 50°.

GRASS SEEDS FOR LAWN (Idem).—We presume you wish for a good lawn, then you should have Clovers, unless your lawn have sufficient of them already. *Festuca duriuscula*, 3 lbs.; *Festuca tenuifolia*, 2 lbs.; *Festuca ovina*, 2 lbs.; *Poa nemoralis*, 1 lb.; *Poa sempervirens*, 2 lbs.; *Cynurus cristatus*, 6 lbs.; to which we would add of *Trifolium repens*, 3 lbs.; *Trifolium minimum*, 2 lbs.; and of *Lotus corniculatus*, 1 lb. This is not too much to sow over a lawn very thin of grass; but if it only needs thickening, 12 lbs. of the mixture are sufficient for an acre. The lawn should have a dressing of good, rich soil or compost, about the middle of March, and the seeds should be sown during the first dry weather in April, just before or with an early prospect of rain. Sow the seeds over the lawn, then rake it over with an iron rake, and roll immediately afterwards if the ground is dry, for if wet the soil and seeds will adhere to the roller. From a quarter to half an inch is not too thick to cover the lawn with compost.

POINTING GARDEN WALL (Idem).—Plaster or hair mortar is the best for this purpose; it is made of lime, sharp sand, and cow's hair, and is not expensive. The old mortar should be picked out, especially that which is loose. The pointing may be done now during mild weather, but it is better to defer it till there is less likelihood of frost occurring before the plaster becomes dry. A small quantity of hair will suffice.

PROTECTING TULIP-BEDS (Idem).—A little dry litter will be all that is necessary to protect them, putting it on before frost, and removing it during mild weather. Three inches of dry, light litter will be sufficient.

BOOK (Lactuc).—We have no knowledge of Prof. or Oliver's book.

GREENHOUSE FRONT-BORDER USES (T. J. D.).—If we understand your letter aright, you have a border in front, next the path, 6 feet in width; but if your house be 10 feet wide, then you will only have a border in

front 1 foot wide. The border in front would form a very good place for the growth of Potatoes, if you were to fill it with leaves, and place 6 inches of good rich soil above them. Plant the Potatoes now in rows 15 inches apart, 3 inches from set to set, 3 inches below the surface. Your proposed night temperature is high for Potatoes; one of from 50° to 55° would be better for the first month after the haulms appear, after that it may be 60°, with air, at night. The Potatoes will be fit for use by the beginning of April, and a fortnight before that you may sow Kidney Beans between the Potato rows, sowing them 3 inches apart in drills 1 inch deep. After the Potatoes are taken up the soil is to be drawn to the stems of the Beans, and, under fair management, they will produce by the beginning of May. The Ash-leaf Kidney Potato, and Fulmer's Early and Newington Wonder Kidney Beans would answer. If you prefer it, you may fill the border with leaves, cover with a few inches of soil, and on this place pots of Strawberries in the first week in February, allowing a distance equal to the diameter of the pots between them every way. The temperature, however, must not be 60, but 40, for the first fortnight, and it should increase every fortnight, until the plants are in flower, when it must remain stationary until the bloom is set, then 5° of increase may be given and maintained until the fruit is ripe. After the above crops, whether Strawberries, or Potatoes and Kidney Beans, the border should be cleared out and filled with hot dung, well sweetened, about 3 inches of soil placed all over it, and in the centre of the border, at every 8 feet, put half a barrowful in the form of a cone. When the soil has become warmed through, level the top, and plant two Melon or Cucumber plants, one to be trained to the front over the soil, and the other either towards the back over the soil, or on the roof, at about 1 foot from the glass. When the roots come through the sides of the hills, put soil around them so as to cover the whole of the six-foot border to a depth of from 10 inches to a foot. A good rich strong loam made firm is best for Melons, and one not so strong for Cucumbers. In this way you may have a good crop of Melons in August and September, or either Melons or Cucumbers earlier by filling the border with dung and planting at an earlier season.

BRIDGEA SPICATA—POLYGONUM SIEBOLDI (Miss H.).—The *Bridgesia* is sufficiently hardy to withstand our ordinary winters near London. It is growing in the Chelsea Gardens of the Royal Horticultural Society, trained on the outside of the conservatory erected some years ago by Messrs. Hartley. It was not killed in the severe winter of 1860, when the thermometer indicated 1 below zero. It is an evergreen climber, with pretty leaves and flowers, and is very ornamental for covering walls. It is less known than it deserves to be. *Polygonum Sieboldi* is also hardy. Your plant is *Linum trigynum*.

LEAF MOULD—EVAPORATING-TROUGHS FOR CONSERVATORY—ADMITTING AIR (Tyro).—Leaf mould is formed of leaves laid in a heap until decayed so as to resemble mould. It is readily recognised by its brown colour, and by the portions of decayed leaves which it contains. It is obtainable of most nurserymen, who, though they do not generally sell it, will, nevertheless part with a little to oblige their customers. You may form it yourself by throwing into a heap a quantity of Oak and Beech leaves which are best, or, failing these, other tree leaves will do, covering with a little soil to prevent them blowing about, and in twelve months they will, upon a sifting, be a quantity of soil or decayed matter available, when mixed with loam, for potting *Cinerarias*, *Calceolarias*, &c. We do not consider you need evaporating-troughs for your conservatory flue-pipe, as the difficulty is to keep the atmosphere dry enough in winter, and in summer sufficient moisture may be secured by syringing the plants, and moistening the paths, floors, walls, &c. You may, however, have evaporating-troughs made to fit the flue. They may be of zinc or galvanised iron, 3 inches high at the sides, and closed at the ends. Two three-foot lengths will be sufficient, and any whitesmith would make them for you. By giving air early is meant that it is to be admitted as early in the day as it can be without decreasing the internal temperature. Sunrise is early enough, and earlier by five hours than we give air in summer; we then usually do so from a quarter to eight (a half-past eight in the morning). As we keep air on all night, we are not so particular in giving it to cool houses, as that is merely increasing their temperature.

NAMES OF PLANTS (G. T. E.).—1. *Pteris hastata*; 2. *Pteris cretica*; 3. *Oxyechium lucidum*; 4. *Pteris longifolia*; 5. *Blechnum bifidissense*; 6. insufficient; 7. *Platyloma rotundifolium*. (*J. O. U.*)—*Veronica Hederifolia*. (*A. Subseriber*)—1. *Justicia*, probably, but the specimen is insufficient for determination; 2. *Thysanotus rutifolius*. The inflorescence is racemose. (*J. M. M.*)—*Leptospermum scoparium*. Several varieties have long been in cultivation, although seldom met with.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 13th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 7	29.521	29.065	42	33	45	45	S.W.	.36	Boisterous with heavy rain; very fine.
Mon. . . 8	29.167	29.149	50	30	45	45	S.W.	.02	Clear and boisterous; rain; very fine.
Tues. . . 9	29.153	29.089	58	29	44	44	S.W.	.00	Fine; overcast; clear and cold; boisterous; very fine.
Wed. . . 10	29.132	29.047	44	27	43	45	W.	.00	Fine; cloudy; foggy at night; very heavy fall of snow.
Thurs. . . 11	29.384	28.783	34	17	42	43	S.W.	1.00	Snow and sleet, falling heavily; stormy; hazy.
Fri. . . 12	29.912	29.027	50	9	41	43	N.W.	.00	Overcast; fine, clear, sharp frost at night.
Sat. . . 13	29.716	29.982	41	35	40	40	S.	.35	Thawing rapidly, with South wind; stormy and wet; overcast.
Mean. .	29.428	29.371	38.57	26.43	42.93	43.35	....	1.73	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

FIRST IMPRESSIONS OF BINGLEY HALL.

(Continued from page 35.)

On Tuesday morning I was down early at the Show, and could walk about with perfect comfort—indeed, I could stroll

along unimpeded. And now I began thoroughly to enjoy myself. My spirits rose as I recognised old friends of yesterday, and I thoroughly understood the admiration which I had for years heard lavished upon the Birmingham Show. Now, gentle readers, you who were present and you who were absent, just let me take you round Bingley Hall. To the one it will revive a pleasant day; to the other, give some insight into the best of all Shows. I will take the varieties according to the

number each mustered, and I shall speak of pens and not of single cocks. First, Game, the largest entry of all—275 pens. Has not the Game fowl, in spite of cock-fighting being at an end, and not being an over-profitable sort, such a hold upon the English mind that nothing can shake it off? The length of leg in many struck me as being too great. Clearly by the number of entries the Black-breasted and other Reds are still the favourites. Englishmen love “a Red Game cock” as of yore; and yet what a beautiful bird is a Duckwing cock! and what a black prince is the Black Game cock! and how pleasing the symmetry, the chief thing that catches one’s eye, in a White one! Next in number to the Game came Cochins—218 pens—yes, not as I expected, Dorkings, but much-abused Cochins; and yet one sees hundreds of Dorkings for one Cochin—so many Cochins, and many so excellent. I greatly admired the first-prize White. Next, not Dorkings but Hamburgs—195 pens, twenty-eight being Blacks. I am sure it is a mistake in the south and west of England people not keeping Hamburgs. Then Dorkings—132 pens. Shakspeare saw your ancestors not far from this place, for I feel proud to be in Shakspeare’s county; but he never saw such Dorkings as these, and Justice Shallow’s “short-legged hens” were pigmies to you, I warrant. I noticed but few Silver-Greys. Brahmas—56 pens, divided, as they always ought to be, into Light and Dark. Spanish—38 pens, and very good. Polish—in all but 35 pens, and yet prizes for six varieties. Twelve prizes to be shared by only thirty-five pens! Why should the Polish go down? In an exhibition no fowls look better; few are so attractive—many crowd around their pens: the Black with white crests nobly contrasting, the Golden handsome, the Silver elegant. Come, brother fanciers, take to Polish. What a good chance of prizes for you! Large breeders, adopt this as an extra variety. Present your wife or daughter with a sitting of eggs next March. Next came Crève Cœur—20 pens, and last of all Malays—13 pens.

I turn now to the pigmies. Of Game Bantams actually 99 pens! Why is this? First, they are very easy to breed, their eggs being almost all fertile; and then they are pretty to look at, and remind Englishmen of Game fowls. Surely the Judges had some difficulty with this class. Throwing aside a few coarse birds, a great number seemed to me “one as good as another.” I own I think shows are becoming overburdened with these easy-to-breed miniature Game fowls; and as to profit, with them, of course, there is none. Next—but how far apart!—came the Blacks, which, though true Bantams in shape and carriage, number only 19 pens; of White there are only 14; of Silver-laced, only 9; of Gold-laced, but 8; and yet, standing for a long time at the end where the Sebrights were shown, I noticed they came in for more admiration than any birds near. It is indeed a pity they are so few. They cost trouble, but what a result if successful! I am thoroughly jealous of the number in which Game Bantams mustered. Happily the aristocratic Sebrights were far away from them, and I hope did not hear about them, or their feelings would have been hurt. Surely, too, the Blacks are fitted for gentlemen’s pets, and White for ladies’. As to spirit, what Game Bantam has more than a Black Bantam cock?

Next, gentle reader, we will go and see the Pigeons. The staircase is steep, so, if a lady, please accept my arm. The Pigeons! Well, here they are along the gallery, in an excellent position to be well seen. There were 331 entered, being a greater number than ever seen before at Bingley Hall. This is well, for people seem too often not to know what charming and ornamental pets Pigeons are. Among the higher-bred Tumblers my preference ran for the Mottled. They also look better in a show than Almonds, not so often standing all of a heap in a corner. The Powers were better in length than colour; the Carriers good. A special word for the Runts: A pair actually weighed 4 lbs. 15 ozs., others a few ounces less. These large birds deserve to be extensively bred. The Barbs were very excellent. This is also a variety of Pigeon I rejoice to see gaining ground: the Blacks, especially, have so much in them; and oh! those lovely purple and green hues around the neck of the cock. Few Pigeons have higher claims to regard. The white Fantails were better than the coloured, as surely they always are. A coloured Fantail is as painful to my eye as would be a variously-coloured Swan. The Antwerps were too numerous, for what are they but sharp fliers, looking nothing in a pen? Why not more Jacobins? they are worth breeding. The high-bred Balds were very pretty, but few and not perfect—a foul thigh, a coloured feather on the head, a slobbered out; but how difficult it is to breed them free from

these blemishes, as I well know! The Dragons were very excellent. I particularly admired Mr. Percivall’s Blues. The Turbits were also a good class, and, like the Dragoons, drew two “very highly commended” from the Judges. Let me speak a word about the Laced Fantails—very beautiful birds if very clean, though they look like a freak of Nature. There was also a pair of Frillbacks, birds not often seen, and very queer-looking. So much for the Pigeons; would that I could more frequently see such beautiful birds.

I next determined to go for a while to the Dog show, so speedily walked thither. Curzon Hall is a square, with a narrow gallery running all round it. On the ground floor were the larger Dogs, in the gallery the smaller. I began according to number, and passed along noble Bloodhounds, quiet and self-possessed. Why should they be disturbed? They looked perfectly at ease, like true gentlemen, looking at one as if utterly forgetting or despising the crowd, and deeply cogitating some weighty matter, or solving some stiff problem. On I pass, glancing at shaggy Deerhounds dreaming of their native glens, smooth fawning Greyhounds, strong Foxhounds, then other Hounds. One as I came near happened “to lift up his voice and cry,” and what music he made! Then came little Beagles and Pointers of all sizes, lovely to look at—beaten, however, by lovelier Setters; curly-coated Retrievers strong and fierce, as two proved which managed to slip their chains and engage in fierce fight. Then one came upon the “Dogs not used in field sports”—Mastiffs like lionesses; Newfoundland; Sheep Dogs with no sheep to watch, and therefore not quite comfortable, “Othello’s occupation” being gone. But what now? Oh, those marvellously ugly Bulldogs, but lying so marvellously quiet—“Old King Dick” wrapped in royal slumber, reproving Shakspeare’s

“Uneasy lies the head that wears a crown.”

Bul Terriers came next, and by no means sleepy, each one apparently regretting that nobody’s calf came near enough. On to black and tan Terriers, ready to make love to everybody; little Scotch Terriers wriggling their caterpillar-like backs to every one. Pomeranian Pugs, beloved in the last century, figuring in many a picture with their behooped mistresses, and now, it seems, beloved again with crinoline. Dogs and dress equally ugly. I was, however, pleased to notice that some of the seven Pugs exhibited had not had their ears cropped, one of the uncropped taking a second prize, and it was manifest how far less ugly the uncut-ears one looked. Upon ascending the narrow gallery I observed many visitors leaning and looking over the balustrade down upon the square below, and I followed their example. Truly a beautiful sight lay beneath, for you saw all the different large Dogs at a glance from this altitude. They resembled some marvellously wrought and variously coloured carpet. I felt that I could look upon them for hours. In the gallery were the tiny pets. One Toy Terrier rejoiced in a coat or cloak of green velvet with rich gold fringe or border; and he lay on a cushion made to match his coat, with nothing of his tiny self visible save his saucy little head. He received no prize, however—perhaps the Judges considered he had gold enough already.

There were in all 781 Dogs exhibited, the larger as a rule very quiet (here and there a bad-tempered one), but the small Dogs very noisy, just as with unfeathered bipeds, the little folks making a great fuss and disturbance, while the large people rest quietly on their size and position. Let me not forget to name the inhabitants of the Puppy pens—poor little fellows, so pretty and so bewildered! wondering, perhaps, whether they were always to live in such a busy world. There was a boy, too, combing his pet puppy; and there was a Dog lying one moment motionless, the next he started up and wagged his tail, and gazed forward with bright intelligent eyes; for why?—he recognised his master in the crowd. A horrible thought came into my mind: Suppose all these Dogs went mad, or even all got loose! Then oh! their intolerable barking, it beat its way into one’s brain. I could bear it no longer, and I hurried back to Bingley Hall, where, after the yelping and barking, I said to myself, “Welcome, gentle crowing!” I wander lovingly round the Show. I know it is my last visit, admiring again and again some pet pen. How one gets to have one’s favourites at a Show, taking one’s friends to them, and lavishing our admiration on them. I must say that I could but notice the excellent arrangement of everything. I heard high praise bestowed upon the civility of the attendants. The fowls were beautifully clean; not so, however, some of the Pigeons, with the habit which these birds have of attempting a bath out of their drinking-vessels,

and thereby wetting the floor, and, if there is sand or gravel in it, their flight and tail feathers become very dirty. Some that I saw in a very filthy state probably owed their condition to these causes. Might I suggest a greater number of seats? Of course these cannot be in the Poultry Show, but in other parts. What few there were were watched and waited for by the hour by tired ladies. I was glad to see that the National Poultry Company was making itself known, and that it obtained some prizes. Now that butcher's meat is so dear, poultry ought to pay. Poultry shows are always beneficial, but that held at Birmingham is, I think, especially so. The time of year is somewhat dull; no out-door pleasure save hunting possible; Christmas sociality has not commenced. Well, this beautiful and extensive Show comes, and affords each year much and perfectly innocent gratification to thousands. I enjoyed it extremely. It has made a pleasant first impression upon me. Many a time do I, and shall I, close my eyes and imagine myself in Bingley Hall, and live again those happy hours, thinking of my amazement and bewilderment the first day, and my quiet orderly pleasure on the second. I learnt that Bingley Hall was, in old days, a mansion standing in its large high-walled garden. Many a guest did it welcome at Christmas and New Year; but now it welcomes many more. The hosts, so to speak (the Committee), offer a constant source of pleasure, and time does not hang on their guests' hands. All success to the Committee. Please everybody they cannot—let them be sure of that, and not mind it a bit; but they did thoroughly please—WILTSHIRE RECTOR.

P.S.—One little word upon another subject. Last April a great deal of that most precious thing in this world—sympathy, was felt and shown by many of our readers to Mrs. Chitty, widow of one of the writers in this Journal. Her poor husband had died after a few days' illness, leaving his wife and five children penniless. When at Birmingham I was the guest of Mr. Webley, Chitty's master, and although personally an entire stranger, I was received by that gentleman with all an Englishman's kindness and hospitality.

It will be remembered by many that the money collected sufficed to start the widow as a general-shopkeeper in the village in which she lived, and where her husband had been much respected. The last morning of my stay I walked to Selly Oak on purpose to see Mrs. Chitty. It is a village of but yesterday—one of the arms, or rather fingers, of that giant of industry busy Birmingham, which now stretches out many miles into the surrounding country—a village half-grown as yet, with patches of ground marked out for building upon in all directions. Passing houses of more pretension, I at length reached the village street, and soon came to Mrs. Chitty's shop. I had a good look in at the window, in which everything was tastefully arranged and beautifully clean. I then sat an hour in the shop, and heard the sad story told, how a life of hard work by day and head work by night broke down the health of the young and clever gardener. It was a shop in which everything looked doubly good from its exceeding cleanliness. I saw and talked to the children, and tried to impress upon the elder ones their duty to their mother. I heard of much genuine kindness shown to Mrs. Chitty by her poor as well as her richer neighbours, and all seemed satisfactory. Mrs. Chitty expressed much gratitude to all who had helped her, and especially to Mr. Webley, who originated the subscription, and who now aids her by supervision and advice. Apparently she is likely to gain a comfortable livelihood. I make this little statement, for it was a great satisfaction to me to see, as it will be to many to hear, that what was kindly done has had so successful a result.—W. R.

DOTTINGS AT NEWPORT.

"WILTSHIRE RECTOR" not being there to see, I may give you my thoughts on the Show. First and foremost, I should like to see some things altered at Newport. Lord Tredegar's Show is no longer a paltry affair, but takes its stand as one of the leading local shows; it therefore ought to move onwards. I think most of my fellow exhibitors would prefer wooden pens to wicker baskets. The latter injure the plumage of the inmates, especially the tails of the cocks. Some, however, of the Newport baskets had no provision made to prevent the neighbouring mate birds exchanging civilities with each other. I myself shifted two Polish that were thus engaged. Some of the baskets, moreover, were too small for their inmates. I saw one or two pens that I fancy less position from the lowness of their baskets, the cock not being able to stand erect without

rubbing his comb against the top. Were this altered, and more light let into the building, it would be a great improvement, and tend greatly to increase the popularity of the Show. I missed well-known names, previous winners there. Could this account for their absence? for in many of the classes the prizes are very liberal. In every other respect the birds were most carefully attended to.

The Game classes contained some splendid specimens, the substance and condition of the cap birds being everything that could be desired. I did not fancy the Dorkings were so good as usual. The cup pen of Buff Cochins was a most splendid pen—very large good-bodied birds, and worth going many miles to see. Miss Milward's were beautiful in colour. The White Cochins were few, but good. Mr. Heath's cup Spanish cock begins to look as if he were going the way of all good Spanish cocks now-a-days; it seems a trouble to him to open his eyes. The extremely warty face certainly disfigures them. The comb of this bird does not please me. I cannot agree with your reporter as to the Brahams. There have been much better competitions at Lord Tredegar's Show in previous years. This year I only saw two respectable pens. Is the falling-off of entries in this class, now becoming so popular, to be attributed to increased entry payment without any increase of prize money?

Hamburghs mustered strongly, and there were very good specimens of all the older varieties. I did not like to see the prize cards of another show stuck on pens of birds that were here only highly commended. I thought it bad taste. It was done after the awards. The Gold and Silver Polands were few in number but good in quality. The Silver-faced cup Bantams were little pictures. The same may be said of Mr. Zurhorst's Sultans—quite one of the gems of the Show—faultless in condition, &c. La Fleche may have good qualities, but certainly not beauty. Does any person doubt me? If he cannot see a living specimen, let him notice the drawing of Birmingham prize birds, in the *Illustrated London News* and judge for himself—(N.B., if of nervous temperament the experiment had better be avoided). A pen of blue Crève Cœurs were unnoticed. These birds were slate-coloured, like bad Andalusians in face and colour; but the hens had topknots, the cocks, I think, being deficient. A Crève Cœur cock in the Single Cock class was exactly opposite a bad Silver Poland with developed comb, &c.; they looked first cousins. Again I said to myself, "Degenerate Poland!" Several of the Black Hamburghs had the white of the earlobe extending over the face, and again I said to myself "Bred from Minorcas!" Turkeys, Geese, and Aylesbury Ducks were very good.—Y. B. A. Z.

RAILWAY CHARGES.

The thanks of every exhibitor are due to "Y. B. A. Z." and "J. K." for so ably using their pens in the matter of "railway charges," as most must have suffered from nearly every grievance mentioned. At many shows this year where I have been a successful exhibitor, it has been, as "J. K." says, "rather galling to find the prize-money, and even more, swallowed up in railway carriage," and to many this must prove a drawback. There can be no doubt that railways benefit by poultry shows, as not only do they carry the poultry, but, in many cases, the owners also. I myself have travelled hundreds of miles to a show, seldom alone, and find ladies prefer first-class and express trains; and, of course, this is the case with many others. I have in some instances received back the return railway carriage on application, but what is wanted is a general rule that no back-carriage shall be charged on poultry, or at any rate that the charges should be modified. I am glad to see "Y. B. A. Z." "hopes shortly to propose a remedy," and I trust it will be taken up, and tend to remove this grievance, so important to all. I, for one, shall certainly next year curtail my entries at shows on those lines where back-carriage is doubtful, and, on the other hand, send as many as possible on those lines consenting to return the birds unsold free. I also fully agree with "Y. B. A. Z.'s" remarks on the delay in sending exhibition labels.—E. P. L.

MIDDLETON ORNITHOLOGICAL ASSOCIATION.—The first Exhibition of this Association is to be held at Middleton, near Manchester, on the 9th and 10th of February. There are fifteen classes for Canaries, twelve for British and foreign birds, and twelve for Pigeons, in most of which two prizes are offered. The entries will close on Monday, the 5th of February.

WHITEHAVEN POULTRY AND PIGEON SHOW.

THE success of the Whitehaven Poultry Show, held last week, was so great as to take the Committee by surprise, as between seven and eight hundred entries were received, and the amount of empty pens was unusually small. Gratifying as this must have been to the Committee, the accommodation of so large a collection of poultry presented no small amount of difficulty; but, by the kind permission of Lord Lonsdale, the Riding School was placed at their disposal, and, consequently, accommodation for all was at length provided. We certainly ourselves could have wished for pens of somewhat larger size for Spanish, Dorking, Game, Cochin, and Brahma fowls, as the birds would have been seen to far greater advantage; but this difficulty admitted of but little compromise, as some of the Brahmas were hoisted fully 6 feet from the ground. If the numbers should progress with equal rapidity on future occasions, it would be advisable to erect an additional tent in the enclosed yard surrounding the Riding School, for the accommodation of some of the most hardy breeds. The extraordinary increase of entries this year attests, however, that the public confidence in the Whitehaven Committee is strong, and certainly no body of gentlemen could be more persevering in their efforts to do everything possible for the benefit of the poultry whilst under their care.

The competition in *Game* fowls was unusually severe, as may be easily gleaned from the fact that in the classes devoted exclusively to single Game cocks there were no less than seventy-three entries. The other classes of Game fowls were also well filled. It was a matter of regret to find the most unblushing "trimming" of the hackles of some of the Game cocks, which led to their discomfiture; but such practices, when discovered, must be suppressed, in common justice to those exhibitors who feel a proper disinclination to adopt such measures to secure prizes. The total abstraction of the feathers over the eye in some of the *Spanish* fowls is equally deserving of censure. The *Dorking* classes were unexceptionably good—a proof, if any were wanting, that this excellent variety of fowls can bear with impunity the severity of a northern climate if the subsoil is dry. The winners of these *Dorking* prizes may, therefore, well be proud of their success. The *Cochins* were perhaps as good, or even better than are usually to be met with at this time of the year, most of them being shown in perfection of feather and condition, though a few of the earlier-hatched pullets of last year were beginning to show symptoms of broodiness. In *Buffs*, which were the best classes in the Cochins, Mr. Charles Jennison, of the Belle Vue Gardens, Manchester, had a singular amount of success; his extraordinarily good pen of adults having awarded them the following prizes at this Show for their lucky owner—viz., first, in their own class of old Cochins; then the Three-guinea Silver Cup for the best pen of Cochins or Brahmas shown; and again the Five-guinea Silver Cup for the best pen of poultry of any kind in the exhibition. The principal prize for *Buff* chickens was also secured by the same breeder. It would be a very difficult task to bring together a better show of *Hamburghs*; though undoubtedly the Spangled ones were the most praiseworthy, all the varieties were shown in excellent feather. It must be borne in mind, however, that even perfection in all other characteristics is quite incompatible with success if coupled with willow-coloured legs in any of the *Hamburgh* family. *Polands* were truly excellent, whether Black with White crests, Silver-spangled, or Golden-spangled; these varieties all competing together, and proving one of the gems of the Whitehaven Show. The *Game Bantams* were first rate; but the *Sebrights*, although from long-reputed breeders, fell far short of those shown by the same exhibitors only a few years ago. It is apparently a fact that this exquisitely beautiful fancy breed is fast fading away. A class for the exhibition of a "Dozen Hens' Eggs," with the offer of a piece of plate for a first, and two other prizes, brought twenty-six competitors, all good without a single exception.

In *Pigeons* the show was good, and most of the classes were well filled. The *Powders* were remarkably good, the cock in the first-prize pen measuring 13½ inches. Some very good *Dun Carriers* were generally admired. The *Fantails* and *Turbits* were also very good; *Trumpeters*, *Hants*, and the *Siberian Ice Pigeons* all adding to the general attraction.

The Committee enjoyed the most favourable weather on the day of opening, so much so, that amid the brightest sunshine everything around reminded visitors rather of the serenity of a May-day than being one at the very commencement of the year. The success of the Show was therefore secured.

SINGLE COCKS.

GAME.—First and Third, Sir St. G. Gore, Bart., Hopton Hall, Derbyshire. Second, J. H. Wilson, St. Bees. Fourth, C. W. Brierley, Middleton, Manchester. Fifth, T. Whitaker, Melton Mowbray. Commended, T. Statter, Hull; C. W. Brierley; A. B. Dyas, Madeley, Salop. *Cocherel*.—First, J. Fletcher, Stoneclough, near Manchester. Second, R. Pickering, Carlisle. Third, Sir St. G. Gore, Bart. Highly Commended, A. Fenton, Rochdale; H. Thompson, Maryport. Commended, J. Fletcher; M. W. Stewart, Darlington; J. Brough, Carlisle.

GAME.—First and Second, W. James, Winton. Third, J. H. Wilson. *Cocherel*.—First, J. H. Wilson. Second, Messrs. Gunson & Jefferson, Whitehaven. Third, T. Smith, jun., Harrington, Cumberland.

DORKING (Any colour).—First and Second, Messrs. Gunson & Jefferson. Third, T. Dixon, Whitehaven. Highly Commended, Mrs. A. Park, Whitehaven.

SPANISH.—First, J. Bowman, Workington. Second, W. Hale, St. Bees. Third, J. H. Wilson.

COCHIN-CHINA (Any colour).—First, Messrs. Gunson & Jefferson (Buff). Second, J. Bowman (Buff). Third, J. H. Wilson.

HAMBURGH.—First, W. G. K. Jones, Parton, Whitehaven (Golden-spangled). Second and Third, Mrs. A. Parke (Silver-spangled and Golden-spangled). Highly Commended, J. Bowman (Golden-spangled). Commended, H. J. Nicholson, Frigington, Whitehaven (Golden-spangled); W. Robinson.

BANTAM (Game).—First and Third, Mrs. A. Parke. Second, E. Fearon, Whitehaven.

GAME (Black-breasted and other Reds).—First, J. Geldred, Collin Croft, Kendal. Second, Sir St. G. Gore, Bart. Third, J. H. Wilson. Highly Commended, A. B. Dyas. Commended, J. Fletcher.

GAME (Ducking and other Greys and Blues).—First, Sir St. G. Gore, Bart. Second, J. Fletcher, Third, E. Aykroyd, Bradford, Yorkshire. Commended, W. J. Cope, Barnsley.

GAME (Any other variety).—First and Cup, J. Fletcher (Piles). Second, Sir St. G. Gore, Bart. (Piles). Third, T. Whitaker (Piles). Commended, J. Brough. *Pullets*.—First, J. Robinson, Sunderland. Second, J. H. Wilson. Third, J. Harris, Wigton. Highly Commended, E. Wilson, St. Bees; J. Gaddes, Carlisle.

DORKINGS (Silver-Grey).—First, J. Rowlandson, Hawkshead, Coniston. Second, R. D. Holt, Orresthead, Windermere. Third, J. Hardie, Sorbie Ewes, near Langholme. Commended, R. D. Holt. *Chickens*.—First, D. Steele, Windermere. Second, J. Rowlandson. Third, W. H. Walker, Shenfield, Brentwood, Essex. Highly Commended, R. D. Holt; J. Hardie. Commended, T. Atkinson, Coniston Lake.

DORKINGS (Any other variety).—First and Cup, W. Copple, Eccleston, Prescot. Second, R. D. Holt (Dark Grey). Third, A. Fenton (Coloured). Commended, A. Woods, Sefton, near Liverpool (Coloured); J. Robinson; Sir St. G. Gore, Bart. (Coloured). *Chickens*.—First, Sir St. G. Gore, Bart. Second, W. H. Walker (Coloured). Third, C. Jennison (Coloured). Highly Commended, W. Copple. Commended, T. Rogers, St. Helen's, Lancashire; J. Fox, St. Bees.

DORKINGS (Any colour).—*Pullets*.—First, R. D. Holt (Dark Grey). Second, W. Copple. Third, Messrs. Gunson & Jefferson. Highly Commended, Messrs. Gunson & Jefferson. Commended, J. H. Wilson.

SPANISH.—First, H. Beldon, Bingley, Yorkshire. Second, E. Brown, Sheffield. Third, J. H. Wilson. *Chickens*.—Silver Cup, R. E. Postans, Brentwood. Second, H. Beldon. Third, E. Brown. Highly Commended, J. Hardie. Commended, R. Pickering; J. Marchant, Halifax.

SPANISH.—*Pullets*.—First, J. H. Wilson. Second, J. Marchant. Third, J. Bowman.

COCHIN-CHINA (Cinnamon and Buff).—*Cup, C. Jennison. Second, Miss E. A. Aglionby, Grassmere, Westmorland. Third, J. Poole, Ulverstone. Highly Commended, W. Dawson, Hopton Millfield, Yorkshire. Commended, H. Beldon; C. T. Bishop, Birmingham. *Chickens*.—First, C. Jennison. Second, J. Poole. Third, Miss E. A. Aglionby. Commended, W. H. Walker; W. Wood, Walkley, Sheffield.

COCHIN-CHINA (Any other variety).—First, W. A. G. James, Kirby Lonsdale (Partridge). Second, R. J. Wood, Chorley, Lancashire (Partridge). Third, E. Smith, Middleton, Manchester (White). Highly Commended, R. J. Wood (Partridge); W. Copple (White). *Chickens*.—First, J. Wood, Chorley, Lancashire (Partridge). Second, J. Poole (Grouse or Partridge). Third, J. Bowman (Partridge).

COCHIN-CHINA (Any colour).—*Pullets*.—First and Second, C. Jennison. Third, J. Wood. Commended, J. Poole; Miss E. A. Aglionby.

BRAMA BOOTA (Any variety).—First, Rev. W. H. Fell, Stannine, Ponton-le-Fylde (Dark). Second and Third, withheld. *Chickens*.—First, E. Sherman, Chelmsford (Dark). Second, J. Bowman. Third, J. Poole (Dark). Highly Commended, G. H. Roberts, Penwortham, near Preston. Commended, Rev. W. H. Fell (Dark).

HAMBURGH (Golden-spangled).—First, Sir St. G. Gore, Bart. Second, A. K. Wood, Burnside, Kendal. Third, R. Tate, Green Road, Leeds. Highly Commended, H. Beldon; W. F. Dixon, Horesby, Whitehaven. *Chickens*.—First, H. Beldon. Second, J. Roe, Hadfield, Manchester. Third, Sir St. G. Gore, Bart. Highly Commended, R. Tate; J. H. Wilson.

HAMBURGH (Silver-spangled).—First, A. K. Wood. Second, J. Robinson. Third, Sir St. G. Gore, Bart. Highly Commended, H. Beldon; J. Bowman. *Chickens*.—First and Cup, J. Robinson. Second, Sir St. G. Gore, Bart. Third, H. Beldon. Highly Commended, J. Smalley, Blackburn. Commended, J. Hargraves, Carlisle.

HAMBURGH (Golden-pencilled).—First, R. Burrow, Longtown, Sunderland. Second, Sir St. G. Gore, Bart. Third, A. K. Wood. Highly Commended, H. Beldon. *Chickens*.—First, A. K. Wood. Second, W. Bowe, Carlisle. Third, H. Beldon. Highly Commended, J. Robinson.

HAMBURGH (Silver-pencilled).—First, Sir St. G. Gore, Bart. Second, A. K. Wood. Third, H. Beldon. *Chickens*.—First, Sir St. G. Gore, Bart. Second, A. K. Wood. Third, C. Moore, Poulton-le-Fylde. Highly Commended, J. Preston, Allerton, Bradford.

HAMBURGH (Any other variety).—First, E. Smith (Black). Second, Sir St. G. Gore, Bart. (Black). Third, G. Lingard, jun. (Black). Commended, H. Beldon (Black). *Pullets*.—First, R. Burrow, Cumberland. Second, J. Robinson. Third, H. Beldon (Black). Commended, A. Woods; A. K. Wood.

POLANDS (Any variety).—First, J. Smith, Keighley, Yorkshire (White-crested Black). Second, H. Beldon. Third, Mrs. Procter, Hull (Silver). Highly Commended, H. Beldon; E. Smith (Silver). *Chickens*.—First, H. Beldon. Second, Mrs. Procter (Black). Third, J. Smith (White-crested Black).

GAME BANTAMS.—Cup, First, and Third, R. E. Postans. Second, C. W. Brierley. Highly Commended, A. Fenton; Sir St. G. Gore, Bart. Commended, J. W. Morris, Rochdale; W. H. Walker; R. Tate.

BANTAMS (Gold or Silver-laced).—First and Second, M. Leno, Markyate Street, near Dunstable, Bedfordshire (Gold-laced and Silver-laced). Highly Commended, J. W. Morris (Silver-laced); G. Manning.

BANTAMS (Any other variety).—First, W. J. Cope (Pekins). Second, H. Beldon. Highly Commended, Sir St. G. Gore, Bart.

ANY NEW OR DISTINCT VARIETY NOT PREVIOUSLY MENTIONED.—First, W. Wood (White Malays). Second, E. Smith (Sultans). Third, Messrs. Gunson & Jefferson (Grey Malay).

SELLING CLASS.—First and Second, H. Beldon (Golden-spangled *Hamburghs* and Silver-spangled *Polands*). Third, T. C. Harrison, Hull (Brown

* This pen obtained the first prize in its own class, the three-guinea Silver Cup for the best pen of Cochins, and the five-guinea Cup for the best pen of poultry in the exhibition.

Call Ducks.—Highly Commended, J. Ross, Beckfelleian, Broughton Head, Carlisle (Spanish); W. G. R. Jones (Rouen Ducks); J. Bowman (Spanish). Commended, E. Hill, Upha, near Broughton-in-Furness (Silver-spangled Hamburgs).

Ducks (White Aylbury).—First and Cup, W. F. Dixon. Second, J. Robinson. Third, S. St. G. Gore, Bart. Highly Commended, E. Leech, Rochdale; Mrs. J. J. t. t. From Bigg, Am table, Penrith.

Ducks (Rouen).—F. R. J. Hardie. Second, A. Dickinson, West Croft, Distington, Cumberland. Third, J. Ross, Highly Commended, J. Nelson; A. Dickinson; T. Robinson; W. G. R. Jones. Commended, Miss A. Lowther, Whitehaven; J. Robinson, Garstang; Messrs. Gunson & Jefferson; J. Fox.

Ducks (Any other variety).—First, C. Jennison (Sheldrakes). Second, J. R. Jesson, Hull (Carlines). Third, E. Hutton, Pudsey, Leeds, Yorkshire (Pintails). Highly Commended, H. Beldon (Grey Call); C. Jennison (Carolinas); T. C. Harrison, Hull (Brown Call); S. St. G. Gore, Bart. (Grey Calls). Commended, H. Beldon (Carolinas); W. Sisson (White Moscowies).

Geese (Any variety).—First, Mrs. Birkett (Toulouse). Second, J. Hardie (Toulouse). Highly Commended, J. Todhunter, jun., Jericho, Whitehaven (Toulouse); Messrs. Gunson & Jefferson (Toulouse).

Turkeys (Any variety).—First, J. Fox. Second, J. Wood. Highly Commended, R. Burton, jun., Whitehaven.

Eggs.—First, Miss M. B. Hopkirk, Browhead, Windermere (Spanish and Dorking). Second, E. Boyd, Low Leys, Lamplugh, Whitehaven (Black Spanish). Third, J. Pole (Buff Cochins). Highly Commended, J. Bell, Scaenhtwite, Lamplugh (Game); J. Eckerton, Whitehaven (Golden-spangled Hamburg and Malay); J. Brough (Game and Spanish); Mrs. Key, High Harrison, Cumberland (Spanish and Cuckoo); Mrs. Wood, Sandwith (Game and Spanish); Messrs. Gunson & Jefferson (Game and Spanish).

PIGEONS.

CARRIERS.—First, F. Else, Westbourne Grove, Bayswater, London. Second, E. E. M. Roys, Greenhill, Rochdale. Highly Commended, H. Allsop, Birmingham; J. Thackray, Petergate, York.

TRUMPETERS (Almond).—First, F. Else. Second, J. R. Robinson. Highly Commended, W. Stalker, Liverpool; J. Thackray; E. Brown.

TRUMPETERS (Baldheaded).—First, T. Hives, Cotgrave, Nottingham. Second, H. Mapplebeck, Woodfield, Mosley, Birmingham. Highly Commended, J. Percival, Peckham Rye, London; E. E. M. Roys.

TRUMPETERS (Any other variety).—First, R. Pickering. Second, E. E. M. Roys (Mottles). Highly Commended, J. H. Stockall, Broad Green, Liverpool (Red); H. Yardley, Birmingham; J. Thackray (Self Colour).

POWTERS.—First, J. R. Robinson. Second, J. Thackray. Highly Commended, H. Yardley; R. Pickering; E. E. M. Roys.

FANTAILS.—First, J. Thackray. Second, F. Else. Highly Commended, H. Yardley; J. R. Robinson.

JACOBS.—First, F. Else. Second, J. Thackray. Highly Commended, H. Beldon; R. Thompson, Kendal; R. Pickering; J. R. Robinson.

TRUMPETERS.—First, J. R. Robinson. Second, E. E. M. Roys. Highly Commended, R. Pickering; F. Else; J. Thackray.

BARBS.—First, G. H. Roberts. Second, J. Thackray. Highly Commended, R. Thompson; W. Stalker; H. Yardley; J. R. Robinson.

TURBITS.—First, J. Thackray. Second, J. R. Robinson. Highly Commended, R. Thompson; E. E. M. Roys.

OWLS.—First, R. Pickering. Second, J. Thackray. Highly Commended, H. Yardley; F. Else.

ANY OTHER VARIETY.—First, J. J. H. Stockall (Siberian Ice Pigeons). Second, S. Sherwin, Whitehaven (Runts). Highly Commended, H. Beldon (Magpies); H. Yardley; R. Pickering (Isabel); J. Thackray (Jamaica Pigeons).

CANARIES.

BELGIAN (Yellow).—First, Second, and Highly Commended, H. Thompson.

BELGIAN (Buff).—First, J. C. Walker, Whithy. Second, H. Thompson. Highly Commended, J. Walker, Whitehaven.

MULE (Yellow).—First, T. Dougall, Carlisle. Second, W. Armstrong, Emucrate Road, Cleator Moor. Highly Commended, A. Ashburner, Whitehaven.

MULE (Buff).—First, H. Thompson. Second, T. Dougall. Highly Commended, J. Walker.

PIEBALDS (Yellow or Buff).—First, J. Nicholson (Buff). Second, H. Thompson (Buff). Highly Commended, J. Walker.

LIZARDS (Gold or Silver-spangled).—First, H. Thompson (Golden-spangled). Second, J. C. Walker (Gold-spangled). Highly Commended, J. Nicholson (Silver-spangled).

RABBITS.

LOP-EARED.—First, E. E. M. Roys. Second, J. A. Colville, Wandsworth, Surrey (Black and White Buck). Third, T. S. Perry, Egremont (Fawn and White Doe). Highly Commended, T. S. Perry (Sooty Fawn Buck).

ANY OTHER VARIETY.—First and Second, J. P. Hedley (Angora Buck and Doe). Third, T. Weeks, Bootle, Cumberland (Angora). Highly Commended, R. T. Choyce, Whitehaven (Spanish).

Mr. Edward Hewitt, of Birmingham, and Mr. Richard Teebay, of Fullwood, Preston, judged the *Poultry*; Mr. Charlton, of Manningham, Bradford, the *Pigeons*; and the awards to *Canaries*, and other singing birds, were made by Mr. Anthony Benson, of Whitehaven.

SELKIRKSHIRE POULTRY SHOW.

This was held at Selkirk, January 10. The following is the list of awards:—

SPANISH.—First, T. Musgrave, Longtown, Carlisle. Second, J. Macaulay, Edinburgh. Highly Commended, J. Macaulay. Commended, W. Inglis, jun., Selkirk.

DORKING (Coloured).—First and Second, R. B. Blackburn, Harewood-glen. Highly Commended, A. Henderson, Danton. *Chickens.*—First, R. Kers, Mountcviot, Jedburgh. Second, M. H. Graham, Maxton Manse. Very Highly Commended, Mrs. A. Stock, Back Row, Selkirk. Highly Commended, W. Reekie, Carterhaugh. Commended, R. B. Blackburn.

COCHIN-CHINA.—First, W. R. Park, Abbotsmeadows, Melrose. Second,

Mrs. Dickens, Cornhill House, Coldstream. Highly Commended, W. R. Park.

BRAHMA POOTRA.—First, Mrs. Rodger, Elmpark. Second, J. Simson, Very Highly Commended, Miss H. Scott, Ancrum House. *Cock.*—Highly Commended, W. Brown, Ettrick Terrace. *Chickens.*—First, Miss H. Scott. Second, W. Snowie, 1, Billingham.

HAMPTON (Golden-pencilled).—Fir 4, A. K. Wood, Earnside, Kendal. Second, J. Nees, Kirkealdy.

HAMPTON (Silver-pencilled).—First, G. Walker, Selkirk. Second, A. K. Wood. Highly Commended, T. Musgrave.

HAMPTON (Golden-spangled).—First, H. Dickson, Selkirk. Second, A. Hatlie, Selkirk. Highly Commended, T. Musgrave.

HAMPTON (Silver-spangled).—First, A. K. Wood. Second, W. Cheyne, Selkirk. Highly Commended, J. Ker. Shiddburgh; W. Brown.

GAME (Black or Brown Red).—First, D. Broomfield, Kelloe. Second, W. Easton, Jedburgh. Commended, W. Easton.

GAME (Any other variety).—First, Messrs. Easton & Malen, Jedburgh. Second, F. L. Roy, jun., Nenthorn. Commended, F. L. Roy, jun.

GAME BANTAMS (Any variety).—First, Messrs. Easton & Malen. Second, J. F. Lunn, Allan Bank, Jedburgh. Very Highly Commended, F. L. Roy, jun. Highly Commended, J. F. Lunn.

BANTAMS (Any other variety).—First, F. L. Roy, jun. Second, J. Ness. Highly Commended, F. L. Roy, jun.

DUCKS (White Aylsbury).—First, W. Hood, Edgerston Rigg, Jedburgh. Second, A. O. Swan, Everton Bush, Jedburgh. Very Highly Commended, J. S. Fair, Gillie-tongues, Jedburgh. Highly Commended, Miss Scott. Commended, Mrs. Rutherford, Sunny-side, Melrose.

DUCKS (Rouen).—First, W. Edgar, Selkirk. Second, J. Hall, Broom-buills, Jedburgh. Commended, W. Edgar.

DUCKS (Any other variety).—First, G. J. Scott, Single, Ettrick. Second, J. Scott, The Haining.

SELLING CLASS (Any variety).—First, G. Dryden, Selkirk. Second, W. R. Park. Highly Commended, W. E. Miller, Selkirk; J. Dodds, Yair Bridge, Selkirk; A. P. Mitchell, Selkirk. Commended, W. R. Park; Messrs. Easton & Malen; G. McMillan, Jedburgh.

HAMPTON (Any variety).—First, W. Dickson, Selkirk. Second, A. K. Wood.

BANTAM (Any variety).—First, F. L. Roy, jun. Second, D. Broomfield.

PIGEONS.

TRUMPETERS (Any variety).—First, J. Grant, Corstorphine, Edinburgh. Second, J. E. Spence, Dovecot, Musselburgh. Highly Commended, J. Millar. Commended, J. Fiddell, Birk.

FANTAILS (Any variety).—First and Second, W. R. Park. Highly Commended, W. Veitch, Jedburgh.

POWTERS (Any variety).—First, W. Cheyne. Second, J. E. Spence. Commended, G. Emond, Selkirk.

JACOBS (Any variety).—First, W. Veitch. Second, F. L. Roy, jun. Very Highly Commended, R. Paterson, Melrose. Commended, J. Simson.

NEWS (Any variety).—First, T. Paterson, jun., Melrose. Second, R. Laurie, Melrose. Highly Commended, R. Paterson; W. R. Park.

OWLS (Any variety).—First, J. Grant, Corstorphine. Second, T. Spence. Highly Commended, W. R. Park; F. L. Roy, jun.

ANY OTHER VARIETY.—First, R. Laurie. Second, G. Millar. Very Highly Commended, R. Davidson, Jedburgh. Highly Commended, J. U. Sommer, Jedburgh. Commended, R. Laurie.

JUNCO.—D. Brown, Esq., Perth.

ABERDEEN POULTRY SHOW.

(From a Correspondent.)

This Show in point of entries was an immense success, notwithstanding that at Manchester being held almost on the same day. Old and young *Spanish* were a large Show. The hens attracted universal notice, especially those in the pens of Messrs. Draper, Ripthart, Wallace, and Cross. *Deckings*, Silver-Grey, were a magnificent lot, the silver cop going to a very fine and weighty pen belonging to Mr. Gordon, of Manar; they were hard pressed for the cup by a splendid pen belonging to Mr. Carror. The pens belonging to Mr. King, Mr. Wilson, the Hon. Mrs. Arbutnot (late Mrs. Fergusson Blair), were all first-rate. Dark Grey Dorkings, both old and young, made a capital show, every pen exhibiting great weight. The Hon. Mrs. Arbutnot obtained a cup with a pen of birds of immense size. Buff and Cinnamon *Cochins* were a magnificent class, perhaps with the exception of Game and Bantams the best. The cup for old *Cochins* was won by a pen of large and perfectly coloured birds belonging to Mr. Hendrie, of Aberdeen. Messrs. Knowles, Bowen, and Greenwood pressed the winners very hard. We did not like the decisions in the young class; but the adult class were very fine birds, ten out of thirteen pens being noticed. Partridge and White were a fine show. Mr. Tudman was first, taking the silver cup for old, and the first prize for young, with birds which attracted general admiration. A splendid pen of Whites belonging to Mr. Yardley took the second prize; these were the finest Whites ever seen in Aberdeen. Hitherto the judging was good; but now we come to the *Gans*, where it was to say the least, strange. A magnificent pen of Brown Reds belonging to Mr. Wood, of Wigan, was commended, while the first prize was awarded to a fair pen belonging to Mr. Anderson. The young class was rather better; but here, as in the adult class, Mr. Wood ought to have been first and Mr. Anderson second and third. In Single Game cocks it was that the Judge completely outdid himself. The judgment was worthy of Birmingham. The cup was awarded to an extremely commonplace bird, which we think Messrs. Dyan, Burgess, and Gamon ought to have been in a different position. The cup was won by a very splendid Brown Red, the property of Mr. Grimshaw, being hardly pressed by Messrs. Burgess, Gaman, Dyan, and Billing. In *Brahmas* Messrs. Boyle and Lacy struggled hard for the cup, which was, after long con-

sideration, awarded to Mr. Boyle. Pencilled *Hamburghs* were wretched. Spangles were good and admirably judged, as also were *Polands*.

Ducks were a very large and fine show; *Geese* and *Turkeys* of most marvellous size, the Hon. Mrs. Arbutnot's first-prize pen of *Turkeys* weighing 63 lbs., cock and one hen.

Bantams were a beautiful show. We need only mention the names of Messrs. Leno, Raynor, Crossland, Hodgson, Anderson, and Manning. *Single cocks* were a poor show, except *Cochins*. The local birds were first-rate.

Mr. Dixon awarded the prizes, of which a list appeared in our last Number.

THE POULTRY BOOK.

By W. B. TEGETMEIER. London: G. Routledge & Sons.

We have received the commencement of this work, which is proposed to be completed in fifteen monthly shilling parts. It is "The Poultry Book" published some years since, edited by Mr. Wingfield and Mr. Johnson, re-arranged with additions. We think it right to apprise our readers of this, as Mr. Tegetmeier's name only appears on the cover and in the advertisement, from which they might be led to believe that it is the production of that gentleman.

A SHOCK TO THE NERVOUS SYSTEM.

In your report of the Aberdeen Poultry Show you give the name of Mr. H. Ashton, of Manchester, as the winner, with a pen of Nankin Bantams, of the third prize in the Selling Class. If you will refer to the printed prize-list of the Show you will find a pen of Black Red Game Bantams of mine marked also as third prize. When my basket of birds was returned to me it contained the printed card marked "Third prize." As there were fourteen entries in this class, and the names of the two third-prize men occur at each end of the list, it is clear that the mistake in the catalogue is not the fault of the printer, and that the "third-prize" card could not have been slipped into my basket by mistake.

At the last Farnworth (Chapelry) Poultry Show, for which, by the way, my direction labels did not arrive until after I had sent the birds with labels of my own, a very fine pen of my Game Bantams returned with the first-prize card in the basket. Then came a letter from the Secretary, with an apology that he could not send me a prize-list, which I had written beforehand to secure, as they were all sold on the day; and a polite intimation that I was "fairly beaten" by three exhibitors, whose names were given, but of whom I had never heard before, although I read the prize lists of all the shows attentively in those classes, which are my fancy. As no report of this Show appeared either in your paper or your sporting contemporary, whatever honour I may have won or lost remains in obscurity. I do not complain that I was "fairly beaten" at Farnworth, although I do not like the phrase; but I do complain that I had a first-prize card without the prize, that I had no prize list, and that the Show was not reported in the poultry journals.

I shall be much obliged if you will insert this, as I am one of those people whose lives, according to the "WILTSHIRE RECTOR," ought not to be accepted by insurance offices, "because exhibiting must be so wearing to the nervous system."—GEORGE MANNING, *Springfield, Esser.*

You say, "Selling Class (Any variety), Third, H. Ashton, Nankin Bantam." My poultry at the time of the Aberdeen Show were in my poultry-yard, many miles from Aberdeen. I sent nothing at all.—HOWARTH ASHTON.

VULTURE-HOCKED COCHIN-CHINAS.

I AM very glad that our Editors have expressed an opinion so decidedly upon the subject of vulture hocks. There can be no doubt that the subject has been allowed to remain unnoticed too long, and that the time has now arrived for it to be brought boldly forward, and fully and freely discussed. By having neglected to do this, an opinion has been growing and spreading, that any approach to the vulture hock is exceedingly objectionable, and I am sorry to find that some of our judges have evinced their agreement with this opinion by withholding prizes from such birds as have had this particular mark. It is certainly very mortifying to an exhibitor whose pen is unquestionably the best in the class, barring this supposed defect, to

see it passed coldly by, while others which are far below the mark come off with flying colours.

It is sheer nonsense to affirm that the vulture hock, although objectionable, is not a disqualification. The fact speaks for itself. It has disqualified and put to the right-about many a pen which has been ten times more deserving of honour than those upon which it has been bestowed. That such a judgment is somewhat arbitrary must be readily granted by any one who looks fairly at the matter. Why, it is but a very short time ago, that the vulture-hocked Brahmas (I refer more especially to the Brahmas) were the most admired and the most successful competitors of this class at our annual shows. We never heard till lately of this profuseness of feathering at the hock being a defect. It was, I believe, rather considered an ornament. Certain I am that it pertains to those birds which carry the heaviest fluff, have the shortest, best-feathered legs, present the finest figure, and attain the largest size. Why should it be pronounced a drawback? It was not thought so three or four years ago. Their parents came off triumphantly from many a hard contest, and why should not the same laurels be awarded to their offspring? Why should they be doomed to ignominy and defeat while less deserving competitors are crowned and applauded? Poor, innocent creatures, what have they done? Why must they be pecked, and cuffed, and virtually set down among the mean and disqualified? What shadow of a reason can be assigned for all this? Has any new discovery been made to sanction and justify this sweeping condemnation? Has their blood become tainted? Have they degenerated in colour, in calibre, in form, in spirit, in carriage, or anything else, so as to forfeit the rank and prestige which belonged to them in former years? If so, let it be clearly proved, and I will spread my ægis over them no longer; but if the prejudice against these matchless birds be nothing more than a mere fancy, a mere matter of taste, and which has been allowed so to bias and warp the judgment of our Judges as to consign them to the dust of inevitable defeat, I beg permission, through the columns of this admirable Journal, to enter my respectful but earnest protest against this prodigious wrong.

Are gentlemen who have been at considerable expense and trouble in purchasing or rearing these fine specimens to sit down quietly and see them coolly put aside, or rather unscrupulously immolated upon the altar of caprice? If what is sanctioned one year may be reprobated the next, what ground of security have we to stand upon? The shape of a coat or a hat may be altered from time to time as the winds of fashion may happen to blow, but to allow our feathered friends to be subjected to such perpetual shiftings, would be expensive, whimsical, and absurd. Do this, and we at once expose ourselves to the merited charge of running poultry-mad.—JUSTITIA.

THE DISEASES OF BEES.

(Continued from page 535.)

FOUL BROOD.—Any description of the diseases of bees necessarily be incomplete without some notice of what Dzierzon most correctly states to be "incontestably and beyond comparison the greatest misfortune that can befall the bee-keeper;" but as the long discussion on this subject, which commenced in the autumn of 1863, must be fresh in the recollection of many of my readers, I will refer to it as briefly as possible.

This disease, which, as its name implies, affects not the adult bees but only the brood, appears so far to have baffled all attempts at discovering its origin. It attacks the young larvæ in their various stages of development. At first only a few die; but these are not removed by the bees as is the case with chilled brood, and, as they putrefy in their cells, the infection spreads until but very few bees arrive at maturity, the brood combs become masses of corrupt and most offensive matter, and the stock dwindles and ultimately perishes. It is a singular fact that the diseased brood is, at any rate sometimes, inverted in the cells*, so that even if it arrived at maturity the young bees would be unable to liberate themselves, and this has given rise to the absurd idea, promulgated by some old writers, that all the mischief arises from the queen depositing her eggs with the wrong end upwards! I need hardly say that this ridiculous notion is incorrect, nor do the unfortunate larvæ ever arrive at the stage at which they would perish simply from being unable to liberate themselves from their confinement. They seem to die soon after they have

* I am uncertain as to whether this is invariably the case.

been sealed over, and it would appear that a peculiar form of decomposition sets in which changes them into a brown viscous pulp, which the bees make no attempt to remove from the cells.

Dzierzon states that there are two forms or phases of this disease, one mild and curable, the other virulent and nearly incurable, and that the former is liable to degenerate into the latter. When this takes place the malady assumes a most infectious character; the bees, combs, honey, propolis, nay, even the very hive itself, become as it were saturated with the unhealthy virus, and each and all are capable of inoculating healthy stocks. For this reason one diseased colony may infect a whole apiary, and one such hive in which the bees have died may become the centre of contagion to an entire neighbourhood, if suffered to remain exposed until plundered of its contents. As the virulent type of this disease was unfortunately the one with which I made acquaintance in 1863, I can fully indorse the conclusion arrived at by Dzierzon—viz., that looking at the probability of failure, and the risk of spreading the infection, it is inadvisable, except under very peculiar circumstances, to attempt the cure of a foul-breeding stock; better, far better, to consign the bees to the brimstone-pit, drain the honey (which may be used for any purpose except feeding bees), melt the combs, and let the proceeds go towards the purchase of a new stock; whilst the hive itself should either be burnt or carefully purified in the manner hereinafter to be described.

As in my own case peculiar circumstances did exist, and I could neither think of exterminating my Ligurians, nor of consigning my entire stock of valuable hives to the flames, I will briefly describe the process by which, after many vain attempts resulting only in a series of vexations and almost heart-breaking disappointments, I at length succeeded in restoring my apiary to its former state of perfect health, and from which no relapse whatever has since taken place.

The bees and queen of an infected hive having been driven from their own domicile should be placed in an intermediate hive for four days, during the whole of which period the queen must be imprisoned in a queen-cage. At the end of this term any combs made in this hive should be destroyed, and the bees again transferred to a new domicile in which they are permanently to remain, and which is all the better if furnished with a few pure worker combs. It is well even then to keep the queen confined a day or two longer until comb-building has commenced, when, upon her release, she will proceed to lay eggs, which, if the matter has been properly managed, will probably hatch into healthy brood. Infected hives, if straw, should be burnt; if wood, should be carefully scraped over, the refuse scraped off being scrupulously burnt, and they should be thoroughly washed with a saturated solution of chloride of lime, which, in its turn, may in a day or two be washed off with clean water. If the hive can be spared it will be the safest plan to put it by unused for a couple of seasons.

Such, then, is the description and treatment of foul brood, which, at the risk of repetition, I have ventured on transcribing, but which may also be found more fully detailed in my communications to "our Journal" during the autumn of 1863. In concluding my notice of the Diseases of Bees, I may be excused for giving expression to the hope that none of my readers may at any time realise the woful experience of foul brood, which at that time befel—A DEVONSHIRE BEE-KEEPER.

WINTER VENTILATION.

I HAIL with delight, in common, I feel certain, with every reader of the apianian corner of "Our Journal," the first contribution of our talented transatlantic brother, the Rev. L. L. Langstroth, the pioneer, it is to be hoped, of many more, alike excellent, opportune, and useful.

From having begun bee-keeping, I may say, by observing and operating on stray colonies long established in our roof, I can fully bear out what your correspondent says with reference to the indifference of bees to cold, always providing their domicile be kept dry and sweet. I would even say they prefer a rather cool position, from having remarked that such vagabond swarms usually select those portions of roofs having a northern aspect, possibly from the greater coolness there enjoyed during the extreme heat of summer, coupled with the additional advantage of thorough dormancy during the winter months, and a consequent saving of store.

That bees may be wintered almost equally well in wooden

hives with those of straw by the mode recommended by your contributor, I have not a doubt; nay more, I have proved that even in those of glass our little favourites may bear an amount of cold almost incredible, and come through as dry and healthfully as in a straw hive by a somewhat similar contrivance. The case alluded to and chronicled at the time in these pages was that of a large square observatory hive of glass, whose stance was a staircase window. The thermometer on the memorable morning of the 24th of December, 1860, indicated 25° of frost within the hive, while in the comparative shelter outside the windows it fell to 1° below zero, and, nevertheless, the inmates came out of this trial in beautiful order. This welcome, though unexpected result, I chiefly ascribed to the thorough ventilation and consequent dryness afforded by my having employed strips of India matting as a substitute for the usual wooden slides between the bars, when constructing the hive. I must, however, state that I would give a decided preference to matting over old woollens for ventilating purposes, from the greater facility with which the surplus moisture is allowed to escape through the former, and its not being so readily absorbed and retained as in the latter, avoiding the risk of the woollens becoming damp and musty, besides the greater chance of their affording shelter to moths and vermin.

What a contrast the extreme mildness of the past December presented to the severity of that of 1860. In sheltered nooks along the banks of the Clyde a second crop of strawberries and even pears has been gathered, while sprigs of laburnum blossom are by no means uncommon. Is it to be wondered, then, that in our higher, wilder, and more inland localities the furze should be bursting into flower, while little clouds of youthful yellow-jackets gambol in the stray gleams of sunshine, while older stagers lie off to rifle the bursting blossoms? An Ayrshire correspondent informs me that furze in blossom and bees gathering pollen in December, are events unprecedented in the memory of their oldest apianians.—A RENTFRESHIRE BEE-KEEPER.

OUR LETTER BOX.

PREVENTING SOFT EGGS (L. C.).—The remedial will be the preventive measure. It is always considered that the hen forms the egg in herself, but the shell is composed of chalk carbonate of lime. This substance must be supplied by laying some lime-containing substance in the hen-haunts. Putting this, all that advice is from the husk of the whole corn given to them. That is not sufficient. Nothing is so good as a basketful of bricklayer's rubbish. They will leave chalk for the mortar between the bricks of their house. Give no more rice.

DORRINGS' COLOURED BLOOD.—The change from a higher to a lower temperature will often cause the change in the colour of the tips of the combs of any hives. One frosty morning will do it. If they are in health, the combs soon recover their red colour, save in very hard weather, when the tin freezes, turns white, and ultimately falls off. A little stimulant, some bread soaked in good ale, will often remove the blackness.

SPANISH FOWLS IN 1865 (Amateur).—We know of no point in Spanish in which there has been improvement during the past year. We have seen no birds equal to those shown by Mr. Beck and Mr. Davies years ago. The cocks lack stature and style. The former birds had large, white, pendant faces, and combs as stiff as if they were cut out of metal, joined to large-size, and faultless symmetry. The hens were very large, had soft lopping combs, and pearl-white faces. These points were all shown in faultless perfection; but they are rare now as the characteristics of a pen. They are met with in single birds, but we do not see faultless pens of these birds as we did formerly. Improvement on them was very difficult; but many of those now shown are capable of it.

BOOK (S. H.).—It is a work of little worth, and will never be reprinted probably. You will find all you need in "The Poultry-keeper's Manual," just published at our office.

INCUBATOR (H. S.).—We believe that of Messrs. Crook is a good incubator. For seven postage stamps you can have "The Poultry Book for the Many," free by post from our office. It contains a plan of a house and separate yards.

BEE DYSENTERY.—Mr. O. Everest, Navy Arms, High Street, Old Brompton, Kent, would be obliged by any bee-keeper whose bees are suffering from dysentery allowing him to make trial of a remedy. Two last winter were believed to be cured by it, but Mr. Everest wishes to test it further before making it public.

MAKING POTATO SUGAR (J. H. W., Canada).—Grind the Potatoes to a pulp; mix this thoroughly with water, and stir frequently. After standing six hours pour off the clear water—the sediment is Potato-starch, though not quite pure. One part of this Potato-starch is to be boiled with four parts of water, one-fiftieth of oil of vitrol, during thirty-six or forty hours; the water which evaporates being replaced. The jelly does not assume any consistence; the liquor remains clear, and the material used is found completely converted into sugar. By means of chalk the acid is removed, and the solution being evaporated, the sugar crystallises.

POULTRY MARKET.—JANUARY 15.

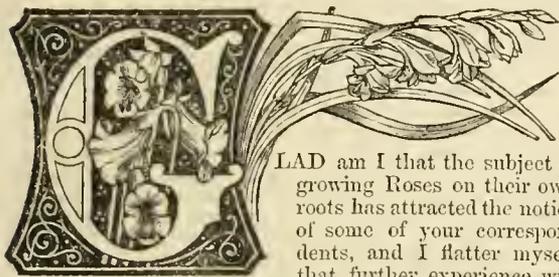
THE supply of poultry remains good, with an average demand. When the Game season is over we may look for a slight advance of price, which will, in all probability, be progressive. Turkeys of good quality, are valued just in proportion as they are heavy.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JANUARY 23—29, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
23	Tu	Heliotropium.	44.9	32.7	38.8	Days.	18	54	7	31	4	45	10	9	12	10	23
24	W	Correas.	44.4	32.5	38.4	18	52	7	33	4	21	11	4	1	8	12	25
25	Th	CR. PRINCESS OF PRUSSIA MARRIED.	44.6	32.4	38.5	20	51	7	34	4	after.	18	9	9	12	30	24
26	F	Hermannia alnifolia.	45.5	32.6	39.1	18	50	7	36	4	46	0	37	3	10	12	52
27	S	Geraniums.	44.5	31.1	37.8	17	49	7	38	4	39	1	31	4	11	13	4
28	SEN	SEPTUAGESIMA SUNDAY.	45.6	31.1	38.3	20	47	7	40	4	39	2	27	5	12	13	16
29	M	Jasminum nudiflorum.	45.6	31.6	38.6	17	46	7	41	4	45	3	16	6	13	13	26

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 45.0°; and its night temperature 32.0°. The greatest heat was 57°, on the 29th, 1863; and the lowest cold 15°, on the 25th, 1827; and 27th, 1855. The greatest fall of rain was 0.90 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

ROSES ON THEIR OWN ROOTS.



LAD am I that the subject of growing Roses on their own roots has attracted the notice of some of your correspondents, and I flatter myself that further experience will

bring more converts to the ranks of those who dislike the trouble of working Roses, and, what is more, the inconvenience attending them afterwards. I must, however, in the first place state that my experience of worked Roses on the Manetti stock has not been very extensive; but I have had several hundreds on the briar, and a tolerably good number on the Manetti also, the latter being mostly dwarfs or half-standards.

I have read with much interest the many articles which your worthy correspondent Mr. Radclyffe has written on the queen of flowers; but, having grown many Hybrid Perpetuals on their own roots for some years with success, I am rather disposed to differ from him when he says that they require great care the first year, as my opinion would be that the worked ones require the care to prevent the suckers usurping to themselves the whole energies of the plant, and that those on their own roots merely need to be let alone. In the spring of 1857 I planted out about two hundred Hybrid Perpetual Roses on their own roots; they were not by any means over-well rooted, and had been lying about some time before planting, which was late in the season. I had occasionally planted some before that time, but less extensively; they succeeded so well, however, that in the following year I planted more, and nothing could possibly have thriven better than they have done, they being rarely affected with aphides, and never to the same extent as those worked on the briar or Manetti. One or two of the beds that were first planted are still doing well, but some alterations involved the removal of the bulk of them a year or two after they were planted; they were replanted, and have succeeded so well that, more Rose-beds being wanted, we planted last year about five hundred more of the same kinds on their own roots.

So much for this side of the question, let us take a view at the other, and this is not without its defects, but I would rather they were narrated by some one who has experienced more reverses than I have; for, with the exception of some kinds not doing well, I cannot find a single fault, as they are as strong and vigorous as could be desired, and the flowers individually are much finer and larger than those of the same varieties on stocks. Some blooms of General Jacqueminot, which were produced last year, were the largest I ever saw. Such old kinds as Jules Margottin, Alexandrine Bachmetoff, William Griffiths,

William Jessie, Souvenir de la Reine d'Angleterre, Auguste Mié, Baronne Prevost, Duchess of Sutherland, Pius IX., Caroline de Sansal, La Reine, Mrs. Rivers, Mrs. Elliot, and several others are as vigorous as any one could wish. Whether the non-success of a few arose from the varieties not being adapted for the purpose, or whether they dwindled and did not grow well in consequence of the unfavourable season that followed their planting (for that was done in the cold spring of 1860), or from some other cause, I cannot affirm, but several kinds which I had from an eminent nurseryman died in the following winter, or rather they dwindled away during the cold summer preceding the memorable frost at the end of that year. I am, however, far from certain that these might not have succeeded well if planted in any other season; but as the beds of which they formed a part required to be kept somewhat uniform, I preferred planting the second time with kinds that had been found to answer. I may add that the soil is dry, but not so much so as to starve them, but a good useful garden soil of fair depth, and that the situation is sunny.

I have urged all who want plenty of good Rose blooms for cutting for bouquets, or even for the appearance of the plants in a growing state, to have these on their own roots, as, with the exception of perhaps cutting out one or two coarse shoots from a bed (not from every plant), during the summer, keeping the weeds down, slightly digging the ground in autumn, and pruning them in winter, such Roses receive no other attention. There is no fear of mistaking the stock for the worked part of the plant as in the case of Roses grown on the Manetti; and I confess having more than once made such a mistake myself in a solitary plant, and mistakes of this kind are by no means uncommon. A year or two ago, in walking round a garden with a gentleman fond of floriculture, he pointed out, with some exultation, the vigorous condition of his Roses, and called my attention to them. A short glance revealed the fact that, with the exception of one or two of the weakest of them, the rest were a mass of Manetti; and as he had in the previous year determined to increase his stock of plants growing on their own roots, cuttings had been taken in abundance, and they struck beautifully, and other beds of bristly Manetti exhibited themselves in another place. Now this is not a solitary case. Much of the work of the most eminent gardeners in the country must be left to labouring men, and they can hardly be expected in all cases to distinguish between Manetti and other kinds of Roses resembling that stock, or, perhaps, many may not know that such plants really are on stocks. Now, there is none of this trouble when Roses are on their own roots. Briars are worse for suckers than the Manetti, only they are never mistaken, but as they spread further they are often in the way of other cropping. All this, however, is so well known to the practical Rose-grower that more on this head need not be said here.

I may observe, and I do so in some degree with regret, that the Hybrid Perpetuals of such kinds as those mentioned above do not furnish any suckers, so that recourse to cuttings must be had for fresh plantations; and the process is less rapid in providing a number of plants in a

short time than working on stocks. With new kinds I fear that we must for some time put up with the inconvenience, but the sooner that can be remedied the better, as I expect that in a few years the majority of Roses will be grown on their own roots where the soil is suitable; and when good old varieties become so well known and proved as to be preferred to untried new ones, we may expect to find the class of Roses here spoken of as plentiful as beds of Tom Thumb, Golden Chain, and other old favourite Geraniums, which retain their place in spite of the scores of newer kinds said to surpass them. Roses, however, are far from being well known, or rather many of them have not been tried, in the way I recommend, and until that be done, and while the demand always runs in the direction of new kinds, we must expect to have to contend against briar and Manetti suckers, and the other evils that follow in their train.

Although recommending Roses to be grown more extensively on their own roots, I am by no means certain that success will in all cases attend the experiment, but even the want of it enables us to come to the proper conclusion in the matter. On this head I should like Mr. Radelyffe to again enlighten us; and if he will say what success he has had with the best class of Tea Roses on their own roots I shall be obliged, for I confess that my experience in this direction is very limited. Other growers will, perhaps, be kind enough also to state their experience; for if Roses can be made to do well without the clumsy process of being supported by something else, they will be all the better servants.—J. Roason.

MORE ABOUT POTATOES.

"Aaran, then, boys, wouldn't ye be content," I once knew an agent of Lord Anglesea's C— properly saying to some of the "finest pisantry in the world," "with pae and plinty staring you in the face, and the harings rowling agin the shores? So here's Praties galore and Erin-go-bragh!" Now, that same toast I can cordially re-echo; notwithstanding Fenianism overshadowing the land, I love old Ireland and many an one in her; and I can also cordially say I like "Praties galore," only let the plenty not be obtained at the expense of quality.

Having a very decided opinion that no Potato except a Kidney is fit food for a connoisseur—for all round Potatoes have, I think, more or less of that earthy flavour which to my mind de-stroys the delicacy of this useful esculent—I determined this year to try whether I could not begin, go on, and end with some sort of Kidney; and in accordance with the recommendation of, I think, "UPWARDS AND ONWARDS," I obtained from Messrs. Sutton & Sons, Reading, and so from a source on which I could rely, good sound seed of the following:—

- | | |
|---------------------------|----------------------|
| 1. Sutton's Racehorse, | 4. Lapstone, |
| 2. Myatt's Ashleaf, | 5. King of Potatoes, |
| 3. Rivers' Royal Ashleaf, | |

and now give my experience of them. I should say that I do not think my garden is a favourable one for the growth of Potatoes. The soil is very rich, and hence they are apt to be waxy—a tling which I abominate. I must also add that the disease attacked Potatoes with a virulence in this neighbourhood that I have not seen for years, whole fields belonging to a neighbour of mine being left undug, as they were not worth the trouble or expense of taking up.

I intended the Lapstone for a main crop, hoping that they would last me until late in the spring, when No. 5 would have helped me on, I hoped, till the new Potatoes were at hand. Sutton's Racehorse I found to be a few days earlier than the Ashleaf, but I do not think so good, and I should prefer relying on the latter for my first crop for another year. Of the Ashleaf I need say nothing; it suited my garden, and is a good and delicate-flavoured Potato. Rivers's Ashleaf disappointed me. I had heard many speak so well of it, that I quite hoped that it would prove a valuable second Potato; but with me it did not do so. It was waxy—deficient, therefore, in flavour, and not a good cropper. The Lapstone is a gem. Doubtless it is a delicate Potato and liable to the attacks of the disease more than others, but what a delicious Potato it is! Nothing could have been more beautiful than the even graceful growth of the haulm; and nothing more woful than to see the "rindorpest" attacking it, the skins becoming spotted, and then the stalks rotting. When I dug the Lapstones out there was a large quantity of diseased ones, but they were unlike any diseased Potatoes I had ever seen. Instead of that brown dry spot which so soon spreads over the entire root, the whole tissue

seemed to be destroyed, and the tuber to be one mass of mortified matter. When they were hosed I found them rapidly going. I then took some quicklime, slaked it, and shook it over them, and from that time had no more deaths; whether owing to the lime or not I cannot say, all I know is the Potatoes kept well. This is to my mind the premier Potato. I know none to equal it for flavour. It steams well, and is very floury; and although I lost so much of it last year, I shall rely on it for my main crop for next season.

With the King of Potatoes I was also greatly disappointed. I have tried it both baked and steamed; but there is a very disagreeable sweet flavour about it—at least, and this is all I can say, when grown in my garden. The soil may not suit it, and there are things we can only gain by experience. This is a point one cannot too much insist on—that soil, situation, and climate do exercise a very material effect on fruits, roots, and flowers, and my experience may not be that of many of your readers.

When at Gloucester in the autumn Messrs. Wheeler, the well-known seed merchants, showed me, and, indeed, gave me to eat, a Potato called Milky White—a Kidney, of very excellent quality, floury, and beautifully white. They also spoke very highly of one which I see advertised extensively, called Mona's Pride, an early Ashleaf variety.

As to cooking Potatoes, I thoroughly and entirely endorse what my friend Mr. Radelyffe says, that the only way to cook them is to steam them, and to send them up to table with their jackets on. Poor Power, I remember, in my younger days used to say, when detailing his adventures in England, "Them's a barbarous people—they peels their praties afore they biles them!" And how any one can imagine a Potato can be properly dressed, or the flavour properly secured, by adopting such a method I cannot say. Let no one think it a very vulgar way to send them up to table. I have seen them so at some of the best houses not only in Ireland but in England.

As I have mentioned Mr. Radelyffe's name, I am sure his many friends will be glad to learn that he has found a resting place. He has obtained a house not very far from Blandford, belonging to Lord Rivers. It is at a place called Fitzpaine Okeford (we shall have to drop the first when we come to write about him); the land is of first-rate quality, very different from Rushton, and consists of four acres and a quarter, including two gardens, an orchard, and a field of fine grass land, a greenhouse, but no walls. The latter want I dare say can be remedied. The late tenant was a good gardener, and very fond of Strawberry-growing. The nearest station is Shillingstone, about a mile and a half distant. Won't there be a fitting there by-and-by when all the new Roses from Rawston find their way there! and shall we not hear, if our lives are spared, something from this said garden! And I am sure the hearty wish of all rosarians and fragarians will be, Long may he live to enjoy the *otium cum dignitate*.

And now as to this year. I have determined to try, if possible, to obtain a small piece of ground where there is not so much rich stuff, and to give Potatoes a fair trial. Mr. Radelyffe has sent me a few Red Ashleaves, Salmon Kidney, and the Hybrid Lapstone. I have also the Milky White and Mona's Pride, and may possibly try a few others; but if one can hit upon four good kinds—early, second early, main crop, and late, I do not see what we need more. The Salmon Kidney which Mr. Radelyffe sent me is very like one that used to be grown in this neighbourhood and called the Denne Hill Kidney, or "Parson's Kidney." I shall look to the Lapstone for my main crop. Regarding Paterson's Potatoes, I must fully endorse Mr. Whiting's views of them in a contemporary—they are fit for the field, good for pigs, but I do not like them for eating, being coarse and earthy. The same I would say of the Fluke and its allies. It is a handsome Potato, boils well, very little waste, but there is no flavour in it. It does capitally for London eating-houses, but I should be thankful to have something better at the time when it comes in. The best way to treat it is to make *pommes de terre frites* of it:—Cut it in thin slices raw, and then throw them into boiling oil or lard, and fry them of a light brown, as one gets them at Paris restaurants.

I have had my little say, and can only end with the agent's toasts, "Praties galore!" and "Erin-go-bragh!"—D., Deal.

TESTIMONIAL TO THE REV. S. REYNOLDS HOLE.—We have been requested to state that the subscription list must shortly close.

ORCHID CULTURE IN COOL TEMPERATURES.

I AM extremely obliged to Mr. Keane for his reply to my note on the above subject. I have had the pleasure of visiting the establishments referred to, and have long been convinced "that some kinds delight in a low temperature." I am also convinced that their number is very limited, I mean the number of genera. This being the case, would it not be well to state the kinds that require cool treatment, as I need hardly remark that the word Orchid is one of very wide import?

An apology is due from me to Mr. Keane for having made any remarks on the subject in the columns of THE JOURNAL OF HORTICULTURE, but I have done so for the following reasons:—First, I have tested the experiment and have failed; secondly, I know others who have done likewise and have lost their plants; thirdly, I know others who have small collections, and, probably, small means, who are strongly inclined to adopt the cool system in consequence of the saving in fuel—now, many of these collections have been slowly acquired, and are, perhaps, the only hobby of the owners; therefore, it would be a great pity if they were lost to them; and fourthly, because I think that to keep an Orchid-house containing *Vandas*, *Aërides*, *Saccolabium*, &c., at a temperature of 55° during winter, as recommended, is dangerous and calculated to lead to unsatisfactory if not fatal results.—B. FINDLAY, *Botanical Gardens, Manchester.*

[The enclosed list of Orchids was obtained principally from Mr. Pilcher, who has the management of Mr. Rucker's celebrated collection. He has them separated into three collections—namely, those requiring high, intermediate, and cool temperatures. Those requiring cool temperatures he has no objection to see at 45° at night, and in severe weather as low as 40°, with a rise in the day by sun heat to 60° or 70°.

At Knypersley Hall, near Congleton, the seat of J. Bateman, Esq., even more than twenty years ago was a large greenhouse which contained a plant of *Dendrobium Wallichianum*, also *Cyrtopodium speciosissimum* and *Calanthe discolor*, all in a fine healthy condition, and which were stated to be grown there during the winter; the temperature of the house was about 45°. Also, a vinery nearly filled with Orchidaceous plants—such as *Lælia superbiens*, very strongly grown; fine plants of *Dendrobium pulchellum* and *Barkeria Lindleyana*, *Stanhopea aurea*, *Oncidium bicallosum*, *Odontoglossum pulchellum*, and a remarkably strong and healthy mass of *O. grande*, which was constantly kept there and bloomed annually. There were many other smaller plants equally healthy. The temperature of this house was 50° in the daytime.

In another house were South American Orchids. Here the temperature was about 65°, and the atmosphere abounded in moisture. In a large span-roofed house with double glazing were the Indian Orchids. This erection was filled chiefly with *Stanhopeas*, *Aërides*, *Vandas*, and *Saccolabiums*. The temperature of this house ranged from 75° to 80°. The visit was made in April, 1844.—W. KEANE.

ORCHIDS REQUIRING A COOL TEMPERATURE.

<i>Cœlogyne fuliginosa.</i>	<i>Oncidium leucochilum.</i>
<i>Wallichiana maculata.</i>	<i>certhagineuse.</i>
<i>Eria aurantia.</i>	<i>Odontoglossum Rossii.</i>
<i>Dendrobium nobile.</i>	<i>pulchellum grande.</i>
<i>Wallichianum pulchellum.</i>	<i>Inslayii.</i>
<i>moniliforme.</i>	<i>bictouense.</i>
<i>tetragonum.</i>	<i>var. Brazil.</i>
<i>Epidendrum vitellinum.</i>	<i>Lycaste Skinneri.</i>
<i>Lælia majalis.</i>	<i>macrophylla.</i>
<i>autumnalis.</i>	<i>Barkeria Lindleyana.</i>
<i>superbiens.</i>	<i>Stanhopea aurea.</i>
<i>albida.</i>	<i>Calanthe discolor.</i>
<i>farfuracea.</i>	<i>Cyrtopodium parviflorum.</i>
<i>anceps.</i>	<i>pubescens.</i>
<i>Cattleya Mossiae.</i>	<i>spectabile.</i>
<i>Skinneri.</i>	<i>calceolus.</i>
<i>Sobralia macrantha.</i>	<i>humile.</i>
<i>Musevallia candida.</i>	<i>venustum.</i>
<i>Oncidium flexuosum.</i>	<i>purpuratum.</i>
<i>bicallosum.</i>	<i>barbatum.</i>
	<i>in signe.]</i>

CHAUMONTEL PEARS IN JERSEY,

I was informed the other day by one who had just returned from Jersey, that the famous Pears of that island are grown upon espaliers at 1 foot distance from the walls. May I ask the reason of this custom?—WYESIDE.

[The Chaumontel Pear is grown on walls in the Channel Islands. South-west is probably the best aspect. Jersey has

a superior fruit-climate, as it slopes to the south, while Guernsey slopes to the north; but in both islands walls are considered necessary to bring this Pear to perfection. Size is obtained by summer-mulchings of seaweed, and repeated waterings; shape, by removing all but the centre blossom. This is thought to produce long-shaped Pears—by far the most saleable. Pound Pears are sold at £5 the hundred, while half-pound Pears rarely bring one quarter of that sum. To obtain the largest Pears very few must be left on the tree. Espaliers removed from the wall are not considered first-rate.]

INTERNATIONAL HORTICULTURAL EXHIBITION AND CONGRESS OF 1866.

We are much gratified by being able to announce, that at a meeting of the Corporation of the City of London, held on Thursday last, it was unanimously resolved to grant the use of the Guildhall for a banquet to be given to the foreign visitors to the International Horticultural Exhibition and Botanical Congress, to be held in London on the 22nd of May next. We believe this is the first occasion on which the Guildhall of the City of London has been granted for a banquet which has not been connected with the Corporation.

MUSHROOMS OUT OF DOORS, AND FORCING IN POTS.

SOME Asparagus-beds, made in the autumn of 1864 in the ordinary way, produced during last August, September, and October, a good supply of Mushrooms; and in the beginning of November, thinking all was over, the beds were cleared, and a top-dressing of well-rotted manure given. To my surprise, from that time to the present I have frequently gathered a dish of fine Mushrooms, and twice since Christmas-day—viz., on the 28th of December and 4th of January, which is quite a novelty to me, and at the same time very acceptable, as a bed under cover has not come on so rapidly as it might.

The soil is of a sharp peaty nature, resting on gravel, which I have no doubt had something to do with such an unusual production in this wet season.—S. ROGERS, *Hants.*

P.S.—I have filled some 15-inch pots with rather fresh horse-droppings, spawned, soiled, and placed them in a heat of about 60°, with an inverted pot over them. Now, to save time, I should be glad if you could recommend me any other way with pots.

[No doubt your dry gravelly subsoil and the mildness of the season had something to do with the production of Mushrooms on an Asparagus-bed in the beginning of 1866, the bed being made in the autumn of 1864. Most likely the spawn had continued to run in the dung that had been used in making the Asparagus-bed, and must have withstood the frost of last winter, or been deep enough then to be beyond its reach. It was stated some time ago in "Doings of the Last Week," that a Mushroom-bed that had produced in an open shed in the summer of 1864, and which it was considered had done bearing, was left accidentally all the winter, protected from nothing but wet, and in the spring of 1865 it began producing again; and when it was watered and a little hay put over it, it produced heavily again. This bed, altogether, was not more than 10 inches deep, and the dryness of the surface was the only circumstance that would prevent the bed being well frosted. In fact, we do not know the amount of frost that the spawn will stand with impunity; but the frost can never penetrate below a covering of grass pasture to anything like the depth it would do in exposed soil. Most likely the Asparagus-bed, too, had some dressing last winter. The fact, at any rate, is worth recording, though we have had several letters about Mushrooms being found in pastures up to Christmas this season. One other important point we should like to know about afterwards, and that is the result of the Mushrooms appearing amongst the Asparagus. We should not be surprised if the spawn injured the Asparagus. Some funguses make sad havoc with other crops; and therefore, however useful the Mushrooms may have proved, they may eventually prove quite the contrary. All such facts are very useful, as they often lead to fresh experiments and results.

We presume that you have managed the pots all right. They must be watched for spawning the same as a bed, only a pot if filled with fresh droppings soon comes to the right heat. Keep the heat rather below 60° than above it. Beware that

the empty pot placed over the other does not make the surface too hot. Whenever the spawn begins to run the temperature will rise. In practice, a little surfacing of hay before the Mushrooms appeared would be as good as the inverted pots.—Ers.]

IRELINE HERBSTH FOR DINNER-TABLE DECORATION.

Much has been said of late both for and against this plant. Some are strongly in favour of it, and are very sanguine as to its future; others are as much the other way, and condemn the plant altogether. I shall certainly not now class myself with the latter, for the more I see of the Iresine the better I like it. If it prove a failure as a bedding plant after it has had a fair trial next summer, there is another important purpose for which it will be used, and for which it cannot fail to be appreciated—well-grown plants cannot be surpassed for drawing-room and dinner-table decoration.

The way to grow plants for table decoration in the winter is to strike cuttings early in August. As soon as they are struck they should be potted off in large 60-pots, and placed in a temperature of 65° or 70°, and as near the glass as possible; this will cause them to grow stocky. Care must be taken not to put them too closely together; they should be placed so that the air may circulate freely amongst them and in positions where they will receive the same amount of light on all sides. A suspended shelf is a good position. Thus placed, the plants will grow regularly all round. The top must not be pinched out, but the side shoots should be stopped after they have made the second pair of leaves.

As soon as the plants have grown to a height of 18 inches, they should be kept rather dry. They will by this time be furnished with side shoots from top to bottom. They should then be shaken out and repotted in 48-sized pots; the most suitable soil is a mixture of peat, leaf soil, loam, and silver sand, in equal proportions. After potting, the plants should be placed in a similar position to that which they previously occupied, and where they will soon fill the pots with roots. All the side shoots must be stopped as soon as they have fairly made a pair of leaves above the joint at which they were stopped before.

When the plants are well established they should be supplied about twice a-week with weak guano water; this will bring out the colour of the leaf in great perfection. There will be no necessity for putting the plants into larger pots than those named above. If the pots are larger than 4 or 5 inches in diameter the plants often have to be turned out of the pots in order to make them go into gold or silver cups, and the roots, consequently, are frequently very much injured, and the appearance of the plant is then soon spoilt.

The plants should be stopped as above directed till about the last week in September; after that time all the shoots may be allowed to grow. By the end of October the plants will be perfect models, and the colour of the leaf will far surpass anything we have for dinner-table decoration. Small plants, if grown as described above, when mixed with any light-foliaged plants, such as *Centaurea candidissima*, and Ferns, Mosses, &c., are very chaste and beautiful for stands in drawing-rooms and vestibules; and large drawing-room vases arranged as follows would produce a very neat and beautiful effect:—Place one large plant of Iresine in the centre, then a ring of small plants of *Centaurea candidissima* and Iresine alternately, all round. If the vase is white, and it is large enough, a margin of *Adiantum cuneatum*, or any other dwarf and graceful Fern, would make it perfect. The vase, however, in the daytime should be placed between the line of vision and the light, the colours would then be seen to perfection.

In the selection of cuttings care must be taken to take them only from plants that are perfectly healthy and in a free-growing state, and all the leaves should be perfect as to shape, &c., as they will all be retained by the plant from the time that it is a cutting until it is full-grown.—J. WILLS.

RAINFALL AT ARDDARROCH, DUMBARTON-SHIRE.

I SEND you an account of the rainfall here for the last twelve years. The gauge is 80 feet above the level of the sea. The climate here is very mild; we very seldom have any frost, and evergreens thrive remarkably well, especially Rhododendrons. Seedlings of these grow so freely among the plantations, that

we often require to hoe them up in our wood walks; but it requires great care to keep Grapes that are ripened in August hanging till the month of February.

	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	1862.	1863.	1864.	1865.
	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.	Inch.
January	10.87	1.46	3.74	9.28	6.87	8.21	8.08	7.65	13.04	8.58	7.05	5.82
February	5.38	1.15	7.90	8.73	1.51	9.06	5.46	6.86	2.39	6.97	6.95	6.84
March	3.61	5.83	4.47	6.51	4.10	11.23	8.41	12.18	5.42	5.01	7.80	3.91
April	1.45	4.94	4.60	6.58	6.05	5.60	2.86	0.59	7.81	6.95	8.55	1.74
May	4.58	3.43	4.73	8.37	6.91	0.89	6.08	1.58	5.77	4.53	1.89	4.35
June	4.65	3.88	7.74	2.77	4.28	2.88	6.66	5.68	6.80	4.91	5.47	1.85
July	4.29	2.80	8.72	3.89	6.77	8.75	8.04	5.15	8.70	6.83	4.51	4.50
August	4.59	6.96	4.56	2.46	0.43	6.04	6.88	18.27	5.40	6.96	2.88	6.86
September	4.55	2.70	3.94	4.56	6.83	10.64	4.52	9.24	2.80	9.56	11.29	2.63
October	9.18	8.85	5.28	4.46	8.77	4.90	10.48	8.38	14.40	7.58	4.51	9.12
November	4.05	0.88	2.73	2.34	1.75	7.47	6.42	9.62	5.21	6.47	8.59	5.61
December	9.80	4.49	8.24	12.03	16.80	6.19	5.09	6.40	7.73	10.85	5.88	8.60
Total	67.26	47.82	57.83	60.43	71.38	75.55	72.93	86.50	85.13	77.50	70.60	60.73

—W. McA., Gardener.

CULTURE OF GOLDEN VARIATED GERANIUMS.

I QUITE agree with what Mr. Reid has said in regard to the disappointment that many have met with in the growth of these; also in regard to the reciprocity between root and branch, that there is a deficiency of fibrous roots as compared with other bedding Geraniums. I find, however, that if they receive the following treatment they will have the required amount of roots and branches like other varieties, and at present I have a stock which, I am sure, cannot be surpassed for health and vigour.

The following is my mode of treatment:—When the cuttings are taken off, say about the beginning of September, they are inserted in a cold pit in a compost of two parts of loam that has been used for growing Melons, one part of old Mushroom manure, and one part made up of silver sand and leaf mould. When the cuttings have been put in they are well watered to settle the soil round them; the lights are then drawn on, and no air given let the sun be ever so bright. When the cuttings become dry, which they will do first at the back of the pit, or frame, give water, but not overhead, as Geraniums are not often benefited by such waterings.

As soon as the cuttings are rooted, which they will be in the course of five weeks, they ought to have a little air for eight or ten days, when potting should be commenced without delay. In doing this use large 60-pots and the same compost as before, with the exception of adding a little more sand. After potting, if there is a frame from which Melons have just been cleared out, no place could be better adapted for them, as there will be a gentle bottom heat. By keeping close for six or eight days growth will recommence, when air ought to be given very gently at first, but the amount should be gradually increased till the young plants are fully exposed. There they may be kept till the nights become too cold, when they should be placed near the glass in a house where a little heat is maintained throughout the winter, for they are very impatient of cold and damp, and when exposed to such conditions soon lose their foliage and perish, or become useless.

In spring, say about the end of March, I take them out of the houses where they have been kept growing from the time they were struck. They are now removed into pits or frames according to circumstances, and plugged in old Mushroom manure to about 1 inch above the rims of the pots. Thus they remain till planting-out time, when they are found to have rooted over the rim of the pot into the manure. If carefully removed to the beds a portion of the manure is carried along with each plant, and the plants begin to root at once and experience no check.

Treated as above, the plants at bedding-out time are found to be as fine as any of the strong-growing varieties. I may mention that I have tried other plans, but none seems to succeed so well and give so much satisfaction. The plants are generally the admiration of all who see them during the summer months.

The tricolor-leaved varieties I treat in the same manner, but my experience is more limited with them but equally satisfactory.—JAMES STEWART, Nuneham Park.

PRIMULA SINENSIS.—The finest and richest coloured Chinese Primroses we have yet seen are those raised by Messrs. Cutbush, Highgate Nurseries.

MUSA CAVENDISHII CULTURE.

ALLOW me space to say a word or two for a favourite of mine, the Musa, or Plantain Tree, which, I think, would be a universal favourite were it better known. It is well worth growing for its beautiful foliage as a stove plant, as well as for its fruit, and Mr. Gibson, of Battersea Park, has shown us its capabilities as an out-door ornamental plant.

The species cultivated by me, *Musa Cavendishii*, is, I think, the most tractable of the family, as well for fruiting as for growing, and from my own experience of it, I will endeavour to give a few hints as to its successful fruiting. Procure a sucker—say in March, as it will then have the summer before it. Supposing the sucker to be 3 or 4 inches in height, pot it in a middling-sized pot—say a 16 or 24, in a compost of peat, loam, and sand, well draining the pot, and potting rather lightly. Do not give much water till the roots have reached the sides of the pot, when the plant should be watered freely. Let it remain in the same pot, and in an ordinary stove temperature, for six or eight weeks, by which time, if all go well, it will be a good strong plant of 2 or 3 feet in height, with well-developed foliage.

The plant is then ready for the fruiting-pot, the size of which with me is 3 feet in diameter at the top, and about 2 feet deep. The pot should be placed where it is intended to grow the plant, and drained with 6 inches deep of oyster shells, charcoal, and crushed bones. Placing the young plant upon the drainage without disturbing the ball more than can be avoided, fill in at the sides of the fruiting-pot with strong yellow loam and rotten tan, which compost I find most suitable for fruiting. The plant will now be ready to be pushed along, and should receive rather liberal doses of liquid manure twice a week—say 4 gallons each time, and the same quantity of clear water in the week as well. This treatment and a temperature of about 80°, not shading more than can be avoided, should by September produce a plant 8 or 10 feet in height, and with its beautiful foliage it will have a very good appearance in the stove, for which it is an excellent centre plant. By keeping it dry for a week or two at this time it will throw up its flower-spike, which is a beautiful object, and as it continues to grow the rows of fruit will appear overlaying each other. When the first row of fruit is half-developed the watering should be recommenced as freely as ever, and with ordinary success there will be by Christmas a bunch of fruit as long as the arm, or thereabouts, and weighing 18 or 24 lbs, which should be ripe about the end of February or beginning of March, making a very unique addition to the dessert. I have a plant now growing, about 9 feet high, with a stem measuring 2 feet in circumference.—W. C.

REMINISCENCES OF TROPICAL FRUITS.

SOME years have now elapsed since I had occasion to pass a lengthened period in various tropical countries; but the vivid recollections impressed on my mind concerning many of the fruits will never be effaced.

I will first notice *ARTOCARPUS INCISA*, or Bread-fruit, which attains the height of 30 feet in the South Sea Islands. It is a beautiful tree at every stage of its growth, and easy of cultivation in our stoves. It is of great value to the natives of the South Sea Islands, and forms a considerable article of food. The fruit is about the size of a child's head, and round; the outer covering or rind is very hard, and contains a pulpy substance. The fruit is generally cooked in native ovens, and when prepared has the appearance of new bread, and in taste comes the nearest of anything that I know to badly leavened bread; a peculiar acid predominating, and a few strong fibres which traverse the pulp, are an objection; at the same time I have eaten many worse vegetables.

ARTOCARPUS INTEGRI-FOLIA is another noble member of this genus, popularly known as the Jaca or Jack-fruit. It is very ornamental in the tropics, but as it attains a height of 50 or 60 feet, I fear it will be seldom seen in this country. The fruit is very curious, being of the size of a small Pine Apple, with the stalk at the small end. The skin is rough, orange yellow, filled with an offensive pulp containing a number of seeds. The fruit generally appears on short foot-stalks, which protrude from the main stem or large branches, and is only eaten by the black population.

NELITRIS JAMBOSILLA is an interesting plant from the Society Islands, attaining a height of from 7 to 10 feet. It belongs to the order Myrtaceae, and is very nearly allied to the genus

Psidium, and by many would be taken for a Guava, the only difference is, that the fruit or berry is not partitioned. It is very refreshing, and I think worthy of cultivation.

INOCARPUS EDULIS comes from the same quarter, and is frequently called the Otaheite Chestnut. The fruit has a very curious fibrous covering, and may be considered more in the light of a curiosity than as being of use. The plant fruits in a young state, and is worthy of a trial in our stoves.

FREYGINETIA BANKSII.—This is a very curious plant, having leaves much like a long, narrow-leaved Pine Apple or Pandanus, and fruit much in the form of *Monstera deliciosa*, but smaller, and of a fine pink colour; from it is made a very excellent jelly. I believe that it is only found in New Zealand, where it ascends the highest trees by its creeping, rooted stem, and adds a beauty to the trees not their own. While speaking of New Zealand, there is a beautiful dwarf Palm, which produces large clusters of scarlet berries (*Areca sapida*), worthy a place in the most select collection.

DIOSPYROS MABOLA, or Date Plum, of the Philippine Isles, produces a fruit in size and form like a medium-sized Peach, and *D. Kaki*, of Japan, produces a fruit much like an Apricot; but not having seen it in bearing I know very little about it. The fruits of both are very austere before maturity, and require keeping until in a state of incipient decay, like our Medlars, before being sent to table.

LUCUMA MAMMOSA, or Marmalade Tree of South America, is very beautiful either when in fruit or not. The fruit is filled with a pulp like Quince marmalade, and very good, but it is not equal to that of a species I met with in Peru and Chili, called

L. DELICIOSA.—This plant has larger and broader leaves, and larger fruit than *L. mammosa*. I once saw plants of it in the nursery of Messrs. Backhouse & Son, York.

GRIS CAULIFLORA, or Anchovy Pear, a native of Jamaica, and one of our most showy stove plants in or out of flower. The ripe fruit is of little or no value for the dessert, but that which is unripe makes an excellent pickle.

MAMMEA AMERICANA, and the various species of *Xanthochymus*, also belong to the same order as *Grias*; and as the whole of them have showy flowers and good foliage, all are worthy of cultivation, even if fruit is not an object.

Two species of *XANTHOCHYMUS*—viz., *X. ovalifolius*, and *X. pictorius*, succeed with less heat than the others, and will do well in a conservatory. *X. dulcis* is the best.

ERIOBOTRYA JAPONICA, or Loquat, is one of the easiest of tropical fruits to grow in our stoves, at the same time many make sorry work with it, and say it is shy. I remember seeing a large plant on the back of one of the old houses in the Glasnevin Botanic Garden, which had been muddled for years, and never fruited, and I have seen it fruit on the open wall in the west of Scotland without protection. We appear to have only one variety in cultivation in this country; many with local names are known where it is much cultivated. There is a variety with large white fruit, very ornamental; also, one with much smaller fruit of a dark orange brown colour, and excellent in flavour. This is *RADDII*, *Peterborough*.

(To be continued.)

NOTES ON PEAR CULTURE.

IN Mr. Rivers's last catalogue of fruit trees there are some remarks on various fruits and their cultivation so worthy of attention on the part of all fruit-growers, that I shall be glad if you will give them a place in your widely-read Journal, with a view to elicit the experience of cultivators, particularly of Pears, in all parts of the kingdom. He says, Pears "differ in their adaptation to soils and climates," and "we have yet much to learn on this subject. Pears differ so much in quality with very slight variations of soil and climate, that much allowance must be made" (for difference of opinion). Again: "double-grafting of Pears will ultimately have a great effect on their culture in gardens, they seem always to make healthy and prolific trees; it must not, however, be concluded that to graft a free-growing Pear on the quince, and then to re-graft it with the desired sort, will always answer, some kinds require the stock belonging to their race; this can only be found out by the clever cultivator." "When this scientific method of cultivating Pears is fully understood, those who introduced the culture of Pears on the quince stock will have thanks instead of the usual deep grumble of the English gardener."

Now, I only cultivate fruit in a small way, yet every step I take, and every fragment of experience I pick up, serves to convince me of the soundness of these opinions; and with the view of eliciting the experience of others, I will relate some of my own observations, not only as to the soils and climates suited to the various sorts of Pears, but also to their treatment after being gathered.

For instance: Mr. Rivers classes the *Burré de Capiaumont* among the baking and stewing Pears. Here, besides being on an east wall one of the most productive Pears in my collection, when gathered before it is too ripe and placed in a warm room (not under 60° Fahrenheit) as soon as gathered, it is rich, melting, and excellent. It does not, however, keep more than a few days after arriving at maturity. As I have said before in this Journal, it was quite worthless with me as a standard, even in the last fine season.

The *Burré de Rance* growing here in a stiff clay little, if any, better than puddle, and double-worked on the quince, is of admirable quality; whilst in the rich alluviums of Wharfedale, into which district I sent some to a friend, this variety is utterly worthless. I think Mr. Pearson, of the Chilwell Nurseries, confirms this opinion, as he says this variety is only of good quality on the clay.

Again: the *Dunmore* here is excellent when double-worked on the quince; on the Pear, both on the walls and as a standard, it is of very indifferent quality, although it bears well.

Again: Williams's *Bon Chrétien*, which seems almost a standard of quality in the London markets, is here utterly worthless. Of course some allowance must be made for difference of taste; but admitting this, I can scarcely suppose that any good judge of fruit would be satisfied with the quality of Williams's *Bon Chrétien* as grown here; and the *Glou Morceau* must be classed in the same list.

Mr. Rivers has somewhere said that every fruit has its own peculiar season, when its excellencies are more perfectly developed than in other years apparently more genial. I allude to this remark because my *Seckle Pears* and the *Louise Bonne* of Jersey, grown on an east wall, were of better quality in the cold and wet year of 1860 than they have been either before or since.

I had written so far when I received the Journal of the 9th inst. containing an article on the growth of bush Pear trees on quince stocks in the Yorkshire hills, which is exactly the sort of communication I want to elicit from your correspondents. Your correspondent "C. I. M." has, however, omitted two points, which I hope he will add to his next communication, these are, the sort of soil in which he grows his Pears, and the elevation of his garden above the sea. I, like him, find the *Burré Superfin* a shy bearer even on an east wall, and the quality with me is by no means what I had hoped to find it.

The *Hessle* bears well with me, and the quality is much improved, judging from one example, by being grafted on the Thorn; but, unfortunately, the tree is then only short-lived. I have not tried it double-worked.

Mr. Rivers, some time ago, said that a dwarfing stock for Plums had not been met with hitherto: has the *Damson* or the *Sloe* been tried, double-worked? A friend of mine budded a *Green Gage* on the *Sloe*, many years since, but I do not think that any increase of fertility resulted from the experiment.

I hope that the letter of "C. I. M." may elicit many other communications of the same kind, which will, I think, greatly increase our knowledge of Pear-growing.—T. G.

MUSA VITTATA FRUITING.

Will you inform me, has *Musa vittata* fruited in cultivation? We have a noble plant, 14 feet high, with a fine cluster of fruit, which is beautifully variegated.—J. SAYERS, *Gardener to Thos. Bewley, Esq., Blackrock, Co. Dublin.*

[I have made several inquiries, but cannot find that *Musa vittata* has fruited before in this country; still, if my memory does not deceive me, I have seen somewhere an account of its having done so. However, be this as it may, it is very desirable that the fruit should be well ripened; and as *Musa vittata* is only a beautiful variety of the ordinary fruiting sort, I see no reason why this should not be accomplished.

There is no tropical fruit grown in England the ripening of which is so little understood as the *Musa* or *Banana*. I have tasted, I may say without exaggeration, hundreds of the fruit ripened in this country, and out of all that number I only

remember four that were fit for anything; the rest were either completely flavourless, or tasted like very over-ripe Pears. Now this is not as it should be. The *Banana* may be ripened here as well as abroad with a little trouble; and as I have been very successful in giving the fruit a good flavour I will just mention a few of the principal points.

In the first place, then, from the time the fruit forms until it begins to ripen the plant should be plentifully supplied with weak liquid manure as well as water, and a high moist temperature should be kept up in order to swell the fruit to a handsome size. Little air should be given by day, but considerably more by night, and the temperature should then always be from 10° to 15° lower. My day temperature without sun during this period was 80°, allowing a rise of 10° by sun heat.

Secondly. The plants, particularly the variegated ones, should never be watered over their foliage by day, as it injures their beauty and is not good for them. My plan was, always the last thing at night to give the foliage a thorough syringing and let the water stand on the leaves all night. This, strange as it may appear, I found wonderfully beneficial to the plants. As the morning advanced of course they became dry, and were not again touched even in the hottest weather until night. I believe this to be a great secret of success.

Thirdly. When the fruit begins to ripen, which may be known by its not swelling any more, all water must be withheld from the roots, and the air kept hot and dry. This is most important, for upon it will depend the flavour of the fruit. The temperature may now range as high as 90°, allowing a little more by sun heat, and no air must be given by day, although it should be given plentifully by night. Every evening the floors, pipes, &c., may be well syringed, and the plants themselves very slightly; but as I said before, no water should touch the roots until the fruit is ripe, unless they flag very much. By these means, and by giving all the light possible, the *Musas* may be ripened with an excellent flavour in England, and the fruit is then a melting and most delicious one.—J. H.]

VARIOUS.

ESSEX RIVAL PEA.—At page 262 of last Volume "NICKERBOB" asked for information of Mr. Eley as to the parentage of *Essex Rival Pea*. If it is new there could not be much difficulty in the raiser giving the parentage; but how comes it that the new *Pea Essex Rival* of 1865 is synonymous with a *Pea* which has been grown for years in Nottinghamshire and Leicestershire, and is now advertised by a midland house at one-third less than by Mr. Eley himself? and it could be sold for still less. It may be a good *Pea*, but it is an old one to some persons. Why have these double names to seeds and plants?

FENNIAN SYSTEM OF USING SEWAGE.—Many may not like the trouble or have the opportunity of heating sewage as Mr. Fenn has done; permit me, therefore, to state for the benefit of your readers a case in my own experience. About the year 1852 or 1853 I took charge of a garden near Bristol for a short time; it was in the spring, and there was a scarcity of Lettuce, and, having some standing under a south and south-east wall, I was anxious to bring it on for use. There was at the stable-yard a large tank which took all the drainage from the stables, cow-sheds, and piggeries, and the washings of the fowl-houses: the stable was on the other side of the mansion, and, to convey the liquid manure, we had only the garden engine, and the wheeling had to be done early in the morning, as we were robbing the fields, so said the "great authority." Well, I used to take the engine and use it myself, lest any of the men should fall into disgrace, and pumped this sewage well into the soil round the Lettuce, and most assuredly with benefit to that crop. The ground after the application was always raked over to check evaporation as much as possible, but on this wall were some Peach trees which had the "curl," and were infested with millions of green fly. I therefore tried the experiment of pumping on them, giving them a good washing, and, after three or four dressings, there was unmistakable evidence of the utility of the liquid; the trees rallied and grew, carried a fine crop, and had good shining foliage. Since then, whenever I could obtain it, I have always used sewage for green fly, and never, that I remember, have lost or injured a plant by it. Use it as it comes from the tank, but not while the sun is on the trees at mid-day.

VARIATION AND DISEASE.—Some time since we had a discussion on "Variation, is it Disease?" Have any of your correspondents been able, by observations, to throw any more

light upon the subject? I do not recollect to have seen so many sports and variegations in any year in my experience—variegations in Coniferae, hardy shrubs, Blackberries, and a tricolor *à la* Mrs. Pollock, but I doubt its coming so next year; variegations in Nettles, Dandelion, Chickweed, and Groundsel, Golden and Silver Arbor Vitæ, Silver Cupressus Lawsoniana, Golden Wellingtonia, &c., and even in Peas, Radishes, and Turnips. What can be the cause? for these variegated forms have come under my notice in various places—Kent, Surrey, Sussex, Warwick, Gloucester, Leicester, and, to controvert the theory that variegation is always accompanied by diminished growth, some of these sports have been stronger than the green-leaved species. I should be glad of the opinions of some more accurate observer than—NICKERBOR.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

RHODODENDRON HODGSONI (Mr. Hodgson's Rhododendron).—*Nat. ord.*, Ericaceæ. *Linn.*, Decandria Monogynia. "One of the noblest of the grand series of Rhododendrons that adorn the Eastern Himalayan Mountains," at elevations of 10-12,000 feet. Flowers purplish pink.—(*Bot. Mag.*, t. 5552.)

LÆLIA GRANDIS (Large-flowered Lælia).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Re-introduced from Bahia, by Messrs. Hugh Low & Co., Clapton Nursery. Sepals nanken; lip purple-veined on white ground.—(*Ibid.*, t. 5553.)

BEGONIA BACCATA (Berried Begonia).—*Nat. ord.*, Begoniaceæ. *Linn.*, Monœcia Polyandria. Native of Bight of Benin and Island of St. Thomas. Flowers white.—(*Ibid.*, t. 5554.)

SPARAXIS PULCHERRIMA (Most beautiful Sparaxis).—*Nat. ord.*, Iridaceæ. *Linn.*, Triandria Monogynia. "A most lovely Cape bulb," introduced by Messrs. Backhouse, of York. Flowers rich purplish crimson.—(*Ibid.*, t. 5555.)

EPIDENDRUM MYRIANTHUM (Many-flowered Epidendrum).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of mountains of Guatemala. Flowers lilac.—(*Ibid.*, t. 5556.)

SWAINSONIA MAGNIFICA.—Introduced from Australia by Mr. B. S. Williams, Victoria Nursery, Holloway. Flowers pink, and large.—(*Floral Mag.*, pl. 273.)

CLIANTRUS DAMPIERI var. MARGINATA.—We noticed this at page 321 of our last Volume.

NEW STRIPED VERBENAS.—*Beautiful*, white, variously marked with purple. *Carnation*, white, marked with crimson and pink. *Fascination*, white, marked with crimson and pink.—(*Ibid.*, pl. 275.)

PRIMULA CORFUSOIDES AMENA var. ALBA.—Received by Mr. Veitch from Japan. Flowers, some purplish pink, others French-white.—(*Ibid.*, pl. 276.)

BEURRÉ D'ANJOU PEAR.—"The fruit which we now figure under the name of Beurré d'Anjou is not the same as Brown Beurré, of which the same name is a synonyme, but another and a very different variety that was introduced by Mr. Rivers under that name. It is, we are informed, the *Nec Plus Meuris* of the French nurseries, and was received from Messrs. Jamin et Durand, of Bourg-la-Reine, under that name; but it is totally distinct from the *Ne Plus Meuris* of Van Mons. I cannot discover the origin of this variety, and I am, therefore, constrained to adopt the name that has been given to it in the French collections; but it is a most unfortunate one, seeing that it is liable to add to the already great confusion of nomenclature that pomologists have to contend with. It is some years since this excellent Pear was brought to my notice by Mr. Rivers; and I have since found on every occasion that I have met with the fruit, that on account of its handsome appearance as well as the superiority of its flavour, it is a variety of the greatest excellence, or, as Mr. Rivers expresses it to me, 'remarkable for the clearness and beauty of its fruit.' A first-rate Pear, of delicious flavour. Ripe in December."—(*Florist and Pomologist*, v., p. 1.)

TODMORDEN BOTANICAL SOCIETY.—Monday, Jan. 1st. The Secretary read a communication from S. B. Mellor, Esq., of Manchester, in reference to the identity of several interesting Ferns, gathered by Mr. M. in Scotland, North Wales, and Switzerland. A deeply incised form of *Cystopteris fragilis*, from Ben Lawers, had been mistaken by Mr. M., quite pardonably, for the true *Cystopteris alpina* (regia). There are many near approaches found to *C. alpina*. A form in all respects identical with Mr. Mellor's was reported as having been gathered on Snowdon.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE first meeting of this Society for the present year was held on the 1st of January, and, as might naturally be expected on such a festival, the members did not muster in their usual numbers. There was a goodly display of donations to the Society's library, including the publications of the Royal and Linnæan Societies, the Imperial Societies of St. Petersburg and Moscow, the continuation of the fine works of Sepp on the transformations of European Lepidoptera, of Dural's genera of the Coleoptera of Europe, and of Thomson's Coleoptera of Scandinavia, also Mr. Wollaston's new work on the Coleoptera of the islands of the Atlantic Ocean, &c.

Mr. Samuel Stevens exhibited a large collection of Beetles, Butterflies, and Moths collected with the greatest care in the Himalayan region of India, many of the specimens having been reared from the caterpillar state. Amongst the Butterflies were the very rare *Papilio Minerens*, and several others of the same genus; and among the Beetles, *Buprestis Buquetii*, *Dynastes Hardwickii*, and some fine *Lucanida*.

Mr. Hewitson contributed a memoir containing descriptions of twenty-five new species of Hesperidian Butterflies; and the President, a memoir on the species of Longicorn Beetles (fifty-three in number), collected near Santa Marta in Venezuela by the late Mr. Bouchard, about twenty of which had proved to be new to science.

Professor Westwood read a communication which he had received from M. Snellen van Vollenhoven of Leyden, giving an account of the peculiarities which had been observed in Holland during the past year in the appearance and development of various species of insects.

Mr. MacLachlan read some further notes on the occurrence of insects of the genus *Stenophylax*, belonging to the family Phryganeide, in deep ice caves in Switzerland. In some instances the insects were found in the most distant and darkest parts of the caverns, especially in one on the road to Chamounix.

Mr. Bates gave some account of the proceedings of Mr. Bartlet, who had gone on a zoological tour to the shores of the Ucalyi at the foot of the eastern side of the Andes. He had been successful in obtaining large numbers of mammalia, birds, fishes, and especially of insects. His collections had been despatched to this country, and might be expected to arrive in a very short time.

A GARDENING PILGRIM'S PROGRESS.

"W. E. J." tells us that a boy's first duties in a garden are to wash pots, attend to the fires, &c., for the first twelve months, and, in most cases, he is right; but it happened to be the reverse with me. I had to commence my career in the kitchen garden, shrubberies, &c., for the first two years, then I was promoted to the flower garden, and, occasionally, had a job in the houses, in fact, I was a general man for some time. Ultimately, when I succeeded in entering the houses I considered myself making fair progress, because I knew everything in the place, and could do anything that was to be done.

From my first commencement in that garden until I left I was well liked by the gardener, although sometimes I did merit his disapproval, and to give him his due, he was not a bad hand at "blowing up" at such times. Still, his anger soon subsided. During my time there, whatever I had to do I did it as well as I could, and always took a little pride in doing it extra well, but I certainly did like to hear a word of praise now and then. I accustomed myself to think over in the evening what I had done in the course of the day, to see if I had left any tools out, or if I had forgotten to close any of the houses, or cover pits and frames, if necessary; all those duties had a share of my thoughts in the evening, and before I left I saw that all was right. At first I found some difficulty in contracting this habit, but it soon became so strong that I could not leave it off. There is a true old saying that I have often heard when a boy—viz., that "Custom is a second nature." No matter whether a man make a habit of what is good, or what is evil, custom will give him fresh inclinations and capacities for it.

Another axiom is that "A stitch in time spares nine;" consequently a word of advice in time might spare some evil consequences; therefore, I will say to young men, should they have contracted evil habits, Give them up at once, and adopt those that are good, such as studying the various branches of gardening, and although doing so might be disagreeable at first, it will soon become an interesting hobby. But, above all, whatever you have to do in the course of the day, do it with all your might; then, if you are not sufficiently paid for your labour, you will have the pleasure of feeling that you have done your duty, and also advanced a little in knowledge.

From the name signed to this letter the readers of it will at once say that the writer is an Irishman, and they will not be far wrong. Well I remember the day I crossed from Waterford

to Milford Haven. Whether it was because I had a glass or two of whiskey, or the salt water did not agree with my constitution, I do not know; but I kept bobbing my head up and down all the way, and right glad was I when I was on dry land again. I at once made my way by rail to London; and when I arrived at Paddington and found I could not make it my habitation any longer, I walked out, and then I found myself in a dilemma, because my trip to London was only on chance. I had no appointment nor any friend to go to, but after a little inquiry I soon found my way to a respectable nurseryman's place, of which I had heard before. I saw him, and he took me on at once, and soon obtained for me a more suitable place in another nursery. I stayed there until I procured employment from another nurseryman for the purpose of awaiting my chance of obtaining a situation as under-gardener, and I shall always feel grateful to him for his kindness. I was not long in this nursery before he found me employment in a nobleman's place, at fifteen shillings a-week. I was there only nine months when the foreman left, and I had the offer of his place, and I accepted it, as I thought it a good chance to "finish off," as "W. E. J." terms it; but in place of finishing off, I only began to learn, as I found out very soon afterwards; although I knew the names of a good many plants both in and out of doors, also how to manage them well enough, I had, nevertheless, a host of other things to contend with. About the same time some of our more favoured friends in the art began to write about what a gardener ought to know in order to be thoroughly competent to manage a well-kept garden. My heart began to fail; I thought no one with only an ordinary brain could learn so much. What I was to do I did not know, for little as I knew about gardening, I knew less about anything else, and the only course left for me was to persevere and learn as much as I could. I have done so; but I confess I am not finished off yet; but I am thankful for what I have learnt.

Every man has his trials, a gardener has many; but we must always bear in mind that we were sent into this world for the express purpose of undergoing them patiently. It would be well if young men were impressed with the desirability of acquiring as much knowledge as possible while young, and thus laying the foundation to build upon in after-years. Now they have only a vague idea of what they will require hereafter, and they will find in course of time that knowing the names of plants and how to describe them in a scientific way will not be sufficient; they must also become acquainted with kitchen-garden cropping, with fruit trees and shrubberies, and know how to set men to work to the best advantage by day-work, piece-work, or otherwise. Every young man ought to know how to measure and lay out work; to do so, it is not absolutely necessary for him to be able to solve all the problems of geometry, though this is very well for those who are able to do so—but for young men who have not the advantage of a good education, if they can perfectly understand addition, multiplication, subtraction, and division, and can read and write, their own sense, if properly applied, will do the rest. So far as practical gardening is concerned, if they persevere and wait with patience they will some day have an opportunity to use their talents.

To succeed, it is necessary for young men to be humble and obliging, and as they advance in knowledge to show by their behaviour that they do not consider themselves superior to others. If they are clever let them be aware that it is of consideration to others just as they employ their talents usefully. Let them act so, likewise, when they become head-gardeners; by so doing, in place of deserving their master's contempt, they will command admiration, and eventually their masters will reward them according to the service they may render.—
KILLARNEY ARETTUS.

NEW BOOK.

Les Plantes à Feuillage Ornemental, par E. André, *Jardinier principal de la Ville de Paris*. Paris: J. Rothschild, Libraire de la Société Botanique de France, Rue St. André-des-Arts, 13.

THE name and position of the author of this volume of 256 pages are a guarantee of the quality of its contents. M. André is no untried contributor to the horticultural periodicals of his own country, and even of ours, for it was only last week that he gave in these columns an interesting account of the public gardens of Paris. In his connection with these it will readily be conceived that he must have acquired a great amount of experience, particularly with the class of plants of which this

volume treats, and which play so important a part in the decoration of the French capital.

M. André, in his first chapter, dwells on the fact that horticulture, like other things, has its fashions, and that a plant, like a pearl or a ribbon, must conform to the universal law. In proof of this he instances the Orange, the Camellia, the Tulip, and the Dahlia, but the Rose, the flower of every age and taste, has alone been an exception. At present plants ornamental by the form and colour of their foliage are the favourites, and such they are likely long to continue, especially as they are capable of producing grand effects in parks and other extensive areas. Of these plants M. André is an enthusiastic admirer, as well as a most successful cultivator, and the information which he supplies respecting them in the succeeding chapters possesses, therefore, a value which it would not otherwise have.

The second chapter treats on the propagation and culture of plants with ornamental foliage, and is divided into sections for annuals, perennials, rock plants, aquatics, climbers, and plants requiring to be wintered in pits, greenhouses, and stoves. Then follows a classification of plants according to their peculiar features and adaptabilities; and in the fourth chapter the subject of planting so as to produce the best effect in gardens and parks, in landscape scenery, and in towns, is entered into at considerable length, and examples are given of different modes of disposing the plants. The fifth and last chapter, of 169 pages, is devoted to a list of fine-foliaged plants, in which the characters, adaptabilities, and culture of each are given more or less fully, according to the importance of the genus in an ornamental point of view. Thus to *Caladiums* seven pages are devoted, to *Cannas* twenty-one or twenty-two, and to the important genus *Solanum* about the same number.

The work is written in a clear and pleasant style, is illustrated with thirty-eight engravings, and will be found useful by those desirous of introducing tropical and other ornamental-foliaged plants into their gardens, and cultivating them successfully. It must, however, be remembered, that the cultural directions apply to the climate of Paris. The price, too, is very moderate, being only two francs.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE time has now arrived to commence operations in earnest, and one of the first steps is to plan out every inch of ground for the whole year, if possible. Laths should be written upon and placed at the heads of the quarters, descriptive of the kind of crop, the manuring, and what succeeded by. It is necessary also to keep a cropping-book in order to follow up a systematic rotation corresponding with the labels. Most persons will have laid in their stock of seeds for the year. Seeds remaining from last year should be thoroughly examined, and all that are deemed safe for the current season reserved, and some mixed with the new samples. *Asparagus*, the sooner the beds are manured and soiled the better. A plot of ground should be forthwith appropriated to slopes. Market gardeners avail themselves to a great extent of the immense advantages afforded by sloping surfaces. The slopes should, of course, run east and west, and are most convenient about 3 feet 6 inches wide. They should, if possible, be contiguous to the frame ground, as many of the crops on such banks—as Radish, Horn Carrots, early Lettuces, &c.—will require occasional covering with litter and frequent attention. Slopes of this kind, after carrying their spring and early summer crops, will be equally eligible for autumn ones, more especially for Endive, autumn Carrots, or for raising the stock of winter Lettuces. *Cabbage*, sow a little of an early dwarf kind—the Vanack or Nonpareil; also a little Round Spinach and a pinch of Early Dutch Turnip on a warm slope. *Cauliflower*, a little to be sown in a box, and placed in a house at work; also Brown Cos Lettuce, and some White Spanish or Portugal Onions to be transplanted to highly manured ground. *Cucumbers*, continue to stir the dung in the fruiting-bed every other day until the plants are ready to be turned out. If it is a dung-bed, before the soil is put in take off the frame, and level the bed if the dung has sunk irregularly. After replacing the frame make a hollow under the centre of each light, and place in it a layer of turf with the grass side downwards; after which put a barrowload of soil, composed of two parts leaf mould, one part loam, and one-fourth white sand, under each light; let it remain a few days, and if the heat in the centre of the drills is moderate, say about 75°, the plants may be turned out. When the frame is

off the lights should be well washed. *Parsley*, sow a little on a warm slope. *Potatoes*, follow up planting at least the early kinds; cover them 8 inches deep, and draw off with the rake or hoe 2 or 3 inches in the first week of April as a cleaning process. *Tomatoes*, sow some seed immediately, that strong plants may be ready to turn out as soon as all danger from frost is over.

FRUIT GARDEN.

When pruning the Plum, Cherry, and other stone fruit trees, it is hazardous to cut off large limbs close to the stem, as gumming is apt to ensue. Shortening-back is therefore advisable in the first instance; and after the sap has had time to find its way into other channels, with the exception of a small portion to keep alive the reduced limb, the latter may be cut closely off with more safety in the following season. Clear off the prunings of Gooseberries and Currants, and dig between the rows. In the case of Gooseberries the surface soil should be carefully drawn back from below the bushes with a hoe and buried in the middle of the space, whence fresh soil should be brought to replace that taken away about the plants. Some persons have strictly followed this plan for twenty years, and have never been troubled with the caterpillar. Make cuttings of choice Gooseberries, Currants, &c., taking care to pick out the buds at the lowest end of the shoot, in order to avoid suckers.

FLOWER GARDEN.

Those who have alterations to accomplish this spring in the way of planting and groundwork, must now lose no time. In planting large shrubs it is an excellent practice to half fill the hole intended for the plant or tree with the rakings of the pleasure grounds. This imparts an unusual degree of luxuriance to the plants, and of a most enduring character too. Look over and correct the general outlines of ornamental plantations. Break into all hedge-like lines, form bold recesses where space will admit of it, and endeavour to create variety. The lines of irregular plantations or shrubberies should be corrected in this way at least every three years, as however well they may have been designed originally, the unequal growth of trees will, in some degree, militate against the first intention. Re-arrange American masses; some of the delicate Azaleas, &c., are frequently overgrown and injured by the grosser *Rhododendrons*. Biennials may be planted in flower-borders or beds. See to the bulbous tribe; stir amongst them, and protect if necessary. As there is no appearance of frost, Moss, Provence, and other hardy Roses, may now be pruned. Cut out as much of the old wood as can be conveniently spared, and shorten back young wood to the most prominent buds. The sooner Roses are planted now the better, except the more tender Chinese kinds. Roll gravel walks, sweep and clean as often as practicable.

GREENHOUSE AND CONSERVATORY.

A great step towards the proper management of stove plants in winter was made when those in flower at this season were found to do well enough in a temperature averaging 45° in the conservatory. *Euphorbia jacquiniiflora* is one of the best plants we have for winter, and the flowers are even more brilliant in the conservatory than in the stove. Among the forced flowers, *Narcissus*, *Hyacinths*, early *Tulips*, with some of the different *Roses*, are now the most prominent. Sweet Briar is always welcome in winter, and no place should be without *Mignonette* in pots or boxes. Young Orange trees in small pots may be shifted now and placed in bottom heat in the forcing-pit. No plant delights in bottom heat more than the Orange, and few plants which will live over the winter in a low temperature like the latter. The great point to attend to in the greenhouse, is to keep the plants from growing till as late in spring as possible; such plants as show a disposition to grow early should be removed to the coldest part of the house. *Pelargoniums* and *Cinerarias* require more heat than the woody greenhouse plants, and are kept in houses by themselves in nurseries and large establishments; but where there is only one house for the whole, these may be kept in the warmest end. Cut down, number, and remove decayed *Chrysanthemums*, let them become dry in a cold pit.

STOVE.

Keep the atmosphere rather moist, especially if the weather is bright, and remove to the warmest part of the house such plants as are inclined to start. Above all look out sharply for our common enemies, the scale, mealy bug, and thrips, and wage an incessant war of extermination against them at every point. Some plants, such as *Stephanotis*, *Manettias*, *Allamandas*, *Dipladenias*, &c., may be pruned, trained, and started,

if in a gentle bottom heat all the better, but those plants wanted for late blooming must be kept back for the present. The whole of the *Clerodendrons* to be shaken out of their pots, their roots reduced, and repotted into small pots in light, sandy, loamy compost. Place them in heat until they have made shoots about an inch long, and then, unless required to bloom very early, they may be preserved for a time in a lower temperature. Now is a good time to repot such of the *Orchids* as require it. If you have not yet prepared the necessary materials, do it forthwith. Abundance of peat cut into cubes varying from 1 to 2 inches, fresh sphagnum, and charcoal in lumps, with plenty of crocks, should all be at hand. Commence potting those showing signs of growth, and follow up in this order; half char the peat, and soak the sphagnum in boiling water to destroy insects. Keep *Exoras* close to the glass, and at the cool end of the house, and give abundance of air at every favourable opportunity until the bloom is properly set. Prepare for a general potting next month, and train and clean plants at every opportunity.

PITS AND FRAMES.

Place in heat all kinds of stove plants for cuttings. The various sorts of *Salvia* make beautiful border plants for autumn. The sooner cuttings are struck now the better. They should be potted as soon as they are rooted, and grown in heat during the spring to make strong plants for turning out.—*W. KEANE.*

DOINGS OF THE LAST WEEK.

THE snowstorm went almost as suddenly as it came, but not without leaving traces of its presence, and of the high winds with which it was attended, on many a beautiful tree and shrub; the heavy weight of snow on the larger branches, increased by the leverage power of the wind, splitting and breaking off many in all directions, notwithstanding the efforts to relieve them of the weight as far as long-handled rakes could reach. Many a symmetrical plant, especially among the *Pinus* and *Arbor Vitæ* tribe, will have lost their symmetry for years to come. The latter kind of trees are as beautiful to the eye when grown in the regular bush form as when grown to a single stem with the branches coming out regularly all round like a tapering bottle brush; but the superiority of the latter mode of growth is at once apparent in a heavy snowstorm, the snow in their case gliding off the branches without much mischief, whilst in the former many of the contending leaders will be bent to the ground, and cracked and broken. *Cytisus*, *Juniperus*, *Thuopsis*, &c., would all be safer if grown to one stem, instead of approaching the bush form. This fact we may at least learn from the late storm. The disasters among trees and dwellings, &c., on land are after all less to be deplored than the sad news of the loss of life and property from all parts of our coasts. Many a home will be thrown into mourning by the recent hurricane.

As, no doubt, many accounts will appear of the late storm in a gardening and a landscape point of view, it would be interesting to know under what circumstances of general and particular altitude the greatest damage was effected. By the general altitude we would consider the height of the position above the level of the sea, and by particular altitude the height of the place above the neighbouring valleys. Whether it be from the freer course given to the winds on a height, or on the sides of a hill, trees often suffer less on such heights than in the valleys beneath. If this should turn out to be the case in the late storm of wind and snow, it may be partly owing to the well-known fact, that more rain and snow generally fall in the valleys than on the heights, even when the weather is calm; partly owing, we suppose, to the drops increasing in size from their condensing and precipitating upon themselves the moist vapour through which they pass. Even as respects particular altitudes much less rain will fall in a rain gauge fully exposed on the top of a house than one equally exposed some 2 feet above the level of the ground. The height above the ground should be the same when similar rain-gauges are to be compared. Independently of these presumed facts, we have often been mortified, when the ground has been parched-up in summer, to see a rain-cloud break on the hill, and give us only a few drops, whilst the rain was seen falling copiously in the valley. Taking these things into consideration, were we to come to a conclusion beforehand it would be that the greatest damage would be done on low grounds; but facts on this matter will be of more importance than any theory, however

supported by several instances. If the theory should prove to be at all correct, then the importance will be demonstrated of planting chiefly on the poorer land of the hills, and leaving the valley for ploughed fields and meadows.

The frost came and went as suddenly as the snow. On Friday afternoon and evening it promised to be very severe, the glass falling to about 11° below freezing, at 10 p.m., and no change denoted then except a little haziness in the west. Rolling snow for the ice-well was out of the question after the frost, but ice had formed on a large pond, and that being covered with snow, we had holes broken towards evening, and water thrown over the snow by means of a jet, so that the frost should have full power on the pond without the protection of a snow-covering, and we anticipated nice thick ice in the morning, and a day with the ice-cart, though the roads would be rather rough. The ice was thick enough, but on going out in the morning we found the rain, which we could not see, pattering on our face, so sudden had been the change. Having made every arrangement we did not like being thwarted, but after continuing some time the rain and sleet became so fast and furious, and the roads so bad, that we were obliged to desist, and by Sunday morning the snow was all gone. So with us the first chance of obtaining ice for the season has only been partially successful, though even a small quantity is better than none.

The ground being so wet we refrained from going upon it, for digging or otherwise, as much as possible, and the weather being so unsettled the chief work has been washing plants and pots, re-arranging houses, taking most of the bedding plants out of the Peach-house, scraping about half an inch off the surface soil in the orchard-house and taking it to a burning heap—a matter of importance for destroying the eggs of insects if there are any; and in addition to the glass of houses, went over most of the frames and pits, washing the glass inside and outside, putting on some spare sashes, so as not to expose the rather tender inmates long, and doing this near sheds, so that if a heavy shower came on, the men might be employed in washing pots and mending and making straw covers for protection. These are in every way superior to mats, but not equal to wooden frames or shutters. In the press of work some sashes of frames were left uncleaned in the autumn, and without seeing it we could scarcely have believed how dirty and slimy the glass would have become from the want of the autumn washing. No doubt this sliminess was greatly increased by the damp sunless weather we have passed through.

KITCHEN GARDEN.

The work here has been chiefly confined to sowing Peas and Beans in half-circle drain-tiles and on pieces of turf for future transplanting under protection. Removed Kidney Beans from Vine-pits where they were about done, as we wanted the room for moving and regulating the Vine-shoots. Placed Potatoes in pots near the light, in a pit where there was a little heat from leaves. Swept over the last spawned Mushroom-bed so as to have the surface clean and smooth. Looked after large snails at night, as they had begun to have more than their share; they generally make their appearance now about nine or ten o'clock in the evening, and go back to their holes long before daylight. They are generally brought in with the tree leaves, &c., which we use for the bottom of beds. Put a little more Rhubarb in the Mushroom-house. Cut the Sea-kale before it grew too long, as it came faster than we wanted it, and put it in a cool place, on damp moss in a pot, with another pot over it, for a few days. We are sorry to find that some good Cauliflowers in an earth-pit have damped from being covered up several days. Nothing else has suffered, though the covering remained on until Monday. Washed the glass over Asparagus to give it all the light possible, and put on sashes with good glass and large squares, instead of the inferior ones which we were obliged to use at first. Have very little of a fermenting-heap, but intend to raise a bed that has been used for other purposes, in order to sow Horn and Early Dutch Carrots in rows 6 or 7 inches apart, with Radishes in rows between, drawing out the Radishes early, and thinning the Carrots chiefly by drawing. Such a bed of Carrots not much thinned is one of the most profitable things in the garden. We have sown a lot of Newington Wonder Kidney Beans, having run out of other sorts, but though this kind is small it is prolific and well-flavoured, and when the pods are not more than 1½ or 2 inches in length, they are very good cooked whole. We often think that even in the case of larger pods, though quite fresh and young, the flavour is often rendered very flat and watery from the pods being minced and cut into such small pieces before boiling. All

Kidney Bean pods are too old for cooking when they do not break at once, and crisply, when you attempt to bring the two ends of the Beans together. Other matters much the same as in previous weeks. In case frost should come, though there is at present no appearance of it, took up the remainder of the Parsnips, and a lot of Horseradish and Jerusalem Artichokes, secured the Globe Artichokes with litter, and placed burnt clay and burnt rubbish over the crowns of Sea-kale.

FRUIT GARDEN.

Cleared most things out of the Vine-pit, so as to be able to regulate the shoots. Examined and cleaned Strawberry pots in this pit, and filled two shelves in the Peach-house with Strawberry plants, setting the pots on turf reversed on the shelf that overhangs the pathway, and in saucers where the shelf overhangs the trees and can be easily examined. These pots were just gently excited from standing close to the glass in a frame, where there was a little heat below them from leaves, placed above what had been a Melon-bed. Nothing is better than such a frame for giving the plants a quiet start, and nothing, scarcely, can be worse at this season than giving such plants as much heat as would encourage them to root freely in the leaves. If these have to be moved to shelves the check given is often fatal to success, and the whole process tends to the encouragement of leaves rather than flower-stems. If the heat is more than the mildest the pots would more safely be placed on boards and tiles, instead of being plunged in the bed. Allow us to remind those who have their Strawberry plants in frames or under glass, to keep a sharp look-out after mice and rats, and especially the former, as a few of our plants with nice crowns, and the trusses showing well, have been nibbled and cut by mice until they are useless. What with one enemy or another it is seldom that a gardener can have unbroken ease and satisfaction even for a day. There is always some interloper that does the best to mar his best-laid plans, and at least to keep him ever on the alert. If the present dripping weather continues, we will have the orchard-house and trees thoroughly washed. We gave them a good smoking with bruised Laurel leaves when the roof was covered with snow, and the house still retains the scent of the burning smothered leaves. There could have been no better time for smoking greenhouses, conservatories, and frames, where such a smoking with tobacco was necessary. A cool, airy atmosphere is the great preventive of insects. We have not yet needed any smoking with large plants of Cinerarias. For other matters, as respects fruit and fruit trees, see previous weeks.

ORNAMENTAL DEPARTMENT.

Chose a dry time, as soon after Monday as was practicable, to sweep and level some walks that had been rendered rough by shovelling and sweeping pathways in the snow. A small snow-plough—say formed chiefly of three boards, making a triangle, the sides being 4½ feet long, and the base 3½ or 4 feet, the boards 2 inches thick, and 11 or 12 inches deep, is the best means for making walks passable when covered with snow, as it will leave a covering of snow over the gravel, though thin, and thus prevent the smooth surface of the gravel being interfered with. These three pieces of the triangle, braced by stout pieces between, and a weight placed on these in proportion to the depth of the snow, a string or chain fastened to the acute angle in front, and a handle behind to hold by and push, will enable two or more men, according to the depth of the snow, to secure walking-space in a short time over a great extent of walks. One good result of the snow is, that it has filled all pools, ponds, and other receptacles for water to a greater depth than they have been for many years. The ground has also had a soaking, such as it has not had for many years in this neighbourhood. The mild weather has encouraged the worms to throw up their heaps on the lawn, and to keep them out of sight the lawn was run over with a light wooden roller, a smooth green lawn being now a great attraction. A nice lot of Pinks in pots, we are sorry to say, have been nibbled by the mice, as if for mere mischief. Even tarring a rat has not made them all decamp. Wherever much grain is thrown down for game near gardens there is sure to be more than enough of mice, rats, and birds. At present, even as respects birds, every compact Laurel bush seems to give a roosting-place to hundreds every night.

In the case of Auriculas, Polyanthus, and Carnations, the great point is to keep them from becoming too damp, and yet give plenty of air by raising the front and back of the lights, but keeping the damp out. Drip from the sash-bars must be avoided in the case of valued plants of Auriculas.

In dry hours the driest soil should be housed and well aired for potting and other purposes. The snow acted as a good protection from the frost of Friday night, as everything exposed and in cold pits was more tender than usual, owing to the mild sunless weather. Our Calceolarias, &c., were covered up from Wednesday to Monday, and were all right, as a little extra damp would not hurt them. We are having the glass washed, which will make the plants more stubby. Most of them are resting now, and it is quite time enough, for if they grow fast they will be too thick before we shall be able to thin them by planting them in an earth pit without glass protection. Gave plenty of air, without rain, to Violets. Will soon begin to pot some Scarlet Geraniums that are very close together in boxes. Cleared any dead or damped parts from the tops of those that were taken up from the beds and put in large pots as if they were so many faggots. Most of them are beginning to break nicely, owing to the mildness of the weather. If they had done so a month or six weeks later, they would have been early enough. Fresh arranged plant-houses, and will have a lot of potting done if this dripping weather continue. All the houses are kept at about the temperatures mentioned lately.

HINTS TO BEGINNERS AND WINDOW GARDENERS.

There are a few matters to which, in addition to what was said lately as respects bulbs and forced plants, we would respectfully direct the attention of beginners and window gardeners.

1st, Endeavour to have all glass and woodwork clean. Clean water with the chill taken off is often the best, as if much soap is used the alkali is apt to make havoc with the paint. A little brown soap will do no harm.

2nd, Let all pots be scrubbed clean with a brush, and a little sand, if very dirty. It is safest to use nothing but clean soft water for this scrubbing. Never on any account put a bulb or a plant into an old pot that has not been well washed inside and outside, and then allowed to dry before using it. Even rubbing the inside of the pot with a dry scrub is a poor substitute for washing. If many pots are very dirty, they may be soaked some hours before washing, the water poured off, and warm water, to be comfortable, used, and, on the whole, simple water is the best. A little soda or potash may be added, if the pots are very dirty, but in the case of soft pots such ingredients cling to them a long time.

3rd, Keep all leaves and stems of plants, and especially in windows, free of dust, and if it settle on them, brush and then wash it off. A bath will be of importance to the tops of window plants, as it will help to neutralise the dry atmosphere of a sitting-room. There is no better plan for washing the heads of plants of moderate size, than having two pails or tubs filled with clean water at a temperature of from 60° to 70°. If the plants are very dusty, brush the foliage with a soft brush when dry, then place a cloth on the top of the pot, and with the fingers of the left hand spread over and holding the pot, reverse the head of the plant in the water, pulling it backwards and forwards several times, and then set the pot on the floor with the head in the usual position, and wash leaves and stem with a soft sponge until you learn to use the fingers and thumbs of both hands, which may be applied softly and quickly to both sides of the leaf. Then swinge the head again through the same pail, and if that leave it pretty clean, pass it once more through the clean water-pail, and the appearance of the plant will be more than a reward. The cloth and fingers over the surface of the pot will prevent the earth falling out, and the cloth will prevent the earth being soaked in the cleansing operation.

4th, Pay great attention to having the soil rather dry, warm, and well-aired before using it for potting. Those who want so much as to have a small stack of this pared turf, and thatched with itself by turning the grass side outwards, will only have a minimum of care in having the soil aired, as if such turf is built in a narrow ridge and somewhat open, the air will enter sufficiently to sweeten it in six months or so, without turning or anything of that sort. There is scarcely the side of a highway where nice soil suitable for all common plants may not be had.

Lastly, in watering in winter and spring, the water should only be given as wanted, and if the fires in a room are pretty strong and the sun bright, a sprinkling over the top will often be better than saturating and deluging at the roots. When a sunny day comes after a week or a fortnight of dull weather the shade of a muslin curtain for a few hours will often be better than watering. When, however, the soil is dry, watering for a

potful of roots should be given so as to moisten all these roots. The water should be soft, and as warm or a few degrees warmer than the atmosphere of the house or room. For particular plants it is best that the water should be warmed, without taking hot water out of a metal boiler to mix with cold water, as in some such cases there is too much of an oxide or other salt of iron in the water. We have known Ferns &c., injured by watering with water taken from the cistern of hot-water pipes in a forcing-house. We are often glad, however, to go to such places in winter and spring when warmed water must be had. A great advantage, even in large gardens, would be either a large copper for heating water alone, and boiling manure water, and then cooling it before using it, or a large cistern with a coil of hot-water pipes at the bottom, so that the water would be heated without being affected by the rust of the iron inside the pipes. For window plants a tin pitcher or an earthenware vessel might be set by the fireplace. For most common plants a little hot water from the kitchen boiler, to mix with the soft water, though cold, will answer well enough; but it is right that the cultivator of a single plant should know the best mode of securing water that has had the chill taken from it.—R. F.

TRADE CATALOGUES RECEIVED.

Barr & Sugden, 12, King Street, Covent Garden, London.—*Descriptive List of Choice Seeds for Flower and Kitchen Gardens.*

W. Cutbush & Son, Highgate, London, N.—*Catalogue of Vegetable, Flower, and Farm Seeds.*

Hooper & Co., Central Avenue, Covent Garden, London.—*General Spring Catalogue.*

R. Parker, Exotic Nursery, Tooting, Surrey.—*Catalogue of Agricultural, Flower, and Vegetable Seeds, Fruit Trees, New and Rare Plants, &c.*

William Paul, Paul's Nurseries and Seed Warehouse, Waltham Cross, London, N.—*Select List of Vegetable, Flower, and Agricultural Seeds, Seed Potatoes, &c.—Price List of Paterson's Seedling Potatoes.*

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

COVENT GARDEN MARKET—JANUARY 20.

Good dessert Apples and Pears find plenty of buyers; but the supply is limited. Pines are sufficient for the demand, as also are Grapes; some good Black Hamburgs are still to be had, but the bulk consists of Barbrossa, which commands nearly the same price. Forced Strawberries have not yet made their appearance. Among foreign imports are Green Peas from Spain and Algeria; consignments from Frusce chiefly consist of Salads, Artichokes, and Asparagus, the latter selling at from 25s. to 35s. per bundle. Greens of all kinds are very abundant and cheap. Good samples of Potatoes are saleable at a trifling advance on former quotations.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.					
Apples.....	½	sieve	2	6	to 4	0	0	Melons.....	each	3	0	5	0	
Apricots.....	doz.	0	0	0	0	0	0	Mulberries.....	punnet	0	0	0	0	
Cherries.....	lb.	0	0	0	0	0	0	Nectarines.....	doz.	0	0	0	0	
Chestnuts.....	bush.	8	0	16	0	0	0	Oranges.....	100	4	0	10	0	
Currants, Red ½	sieve	0	0	0	0	0	0	Peaches.....	doz.	0	0	0	0	
Black.....	do.	0	0	0	0	0	0	Pears (kitchen)..	doz.	2	0	4	0	
Figs.....	doz.	0	0	0	0	0	0	dessert.....	doz.	1	6	6	0	
Filberts.....	lb.	0	0	0	0	0	0	Pine Apples.....	lb.	6	0	10	0	
Cobs.....	100 lbs.	0	16	0	0	0	0	Pinnas.....	½	sieve	0	0	0	0
Gooseberries..	½	sieve	0	0	0	0	0	Quinces.....	½	sieve	0	0	0	0
Grapes, Hambro..	lb.	6	0	10	0	0	0	Raspberries.....	lb.	0	0	0	0	
Muscats.....	lb.	10	0	15	0	0	0	Strawberries.....	lb.	0	0	0	0	
Lemons.....	100	6	0	10	0	0	0	Walnuts.....	bush	14	0	20	0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.					
Artichokes.....	esch	0	6	to 0	0	0	0	Leeks.....	bunch	0	3	to 0	0	
Asparagus.....	bundle	8	0	12	0	0	0	Lettuce.....	per score	1	0	2	0	
Beans Broad.....	bushel	0	0	0	0	0	0	Mushrooms.....	pottia	1	6	2	6	
Kidney.....	100	3	0	4	0	0	0	Mustd. & Cress,	punnet	0	2	0	0	
Beet, Red.....	doz.	2	0	3	0	0	0	Onions.....	per bushel	3	0	5	0	
Broccoli.....	bundle	1	0	2	0	0	0	pickling.....	quart	0	0	0	6	
Brus. Sprouts..	½	sieve	2	0	3	0	0	Parsley.....	½	ieve	1	0	1	6
Cabbage.....	doz.	1	0	2	0	0	0	Parsnips.....	doz.	1	0	2	0	
Capsicums.....	100	0	0	0	0	0	0	Peas.....	quart	0	0	0	0	
Carrots.....	bunch	0	4	0	8	0	0	Potatoes.....	bushel	2	6	4	0	
Cauliflower.....	doz.	4	0	8	0	0	0	Kidney.....	do.	3	0	4	0	
Celery.....	bundle	1	0	2	0	0	0	Radishes.....	doz. hands	0	6	1	0	
Cucumbers.....	each	2	0	3	0	0	0	Rhubarb.....	bundle	1	0	1	6	
pickling.....	doz.	0	0	0	0	0	0	Savoy.....	doz.	0	9	1	6	
Endive.....	score	1	0	2	0	0	0	Sea-kale.....	basket	2	0	3	0	
Fennel.....	bunch	0	3	0	0	0	0	Spinach.....	bushel	2	0	3	0	
Garlic and Shallots,	lb.	0	8	0	0	0	0	Tomatoes.....	½	sieve	0	0	0	
Herbs.....	bunch	0	3	0	0	0	0	Turnips.....	bunch	0	4	6	0	
Horseradish.....	bundle	2	6	4	0	0	0	Vegetable Marrows	dz.	0	0	0	0	

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

RIBBON-BORDER (P. G.).—Your proposed arrangement will look very well. Let us know what four Geraniums you propose for a ribbon-border, and we will give you our opinion.

HEATING A SMALL BOILER BY GAS (R. S.).—For seven postage stamps you can have free by post from our office "Greenhouses for the Many." At page 88-9 there are a plan and descriptions that will guide you well.

RED SPIDER ON PEACH AND NECTARINE TREES (Surgeon, half-pay).—If your trees are aërialis will annual them, and paint the wall with a wash of sulphur vivum, 2 lbs.; soft soap, 8 ozs., dissolved in a gallon of water; soot, 1 lb.; fresh lime, 1 lb.; clay, 1 lb. Mix the sulphur, lime, and soot with a little of the soap solution, then add the clay and enough of the soap solution to make the whole like paint. Brush the mixture into all the crevices, to fact, all these up. Before the trees are nailed to the wall wash them with sulphur vivum, brought to the consistency of paint by a solution of 4 ozs. of soft soap in a gallon of water. Apply with a brush, taking care not to injure the buds. If red spider attack the trees in summer syringe them with water frequently, and now and then with 2 ozs. of soft soap dissolved in a gallon of water.

BOOKS (Henry Clark).—"The best book on wild flowers" depends upon the purpose for which it is required. For identifying species Hooker and Arnott's "British Flora" is as useful as any according to the Natural System; Sir J. E. Smith's "English Flora" according to the Linnean. We cannot state the prices. Heliolebor fetidus might have its flowers improved by crossing with the Christmas Rose, but we have never heard of the experiment being tried. (J. H. J.).—"In-door Gardening" will probably suit you, price 1s. 6d., free by post from our office for twenty postage stamps. (A. M. T.).—Three very small books, 1s. 6d. each, will completely supply your requirements—"The Garden Manual," "Out-door Gardening," and "In-door Gardening." For six extra postage stamps they may be had free by post from our office.

EXHIBITING AT THE INTERNATIONAL HORTICULTURAL EXHIBITION (A Practical Gardener in the North).—Regulation 11 says, "Every exhibitor must be prepared to declare that the objects he exhibits are his own property, or that of his employer," which we consider intends that a gardener, or an amateur, must not exhibit anything purchased. If a gentleman has a residence in the south of England and a residence in the north, we think the products from the gardens of those residences might be exhibited in one collection. Cucumbers we consider come within the comprehensive name "Salading." An intending exhibitor accidentally prevented exhibiting, after giving notice of his intention, does not incur any responsibility by his non-exhibiting. Potatoes, Peas, Dwarf Kidney Beans, Mushrooms, Tomatoes, and Carrots, would form a good collection. Of course excellence in each article will be a paramount consideration.

LEWISIA REDIVIVA (D. V., and many others).—We do not know any one who has this plant. It is probably at Kew, but so numerous are the inquiries for it that any nurseryman obtaining it and raising a stock would profit well by the effort.

VINES FROM EYES (Clericus Devonensis).—The eyes from shoots of the preceding year are always used, of course from shoots thoroughly matured. In the "Vine Manual," which you refer to, it is expressly directed (page 29) to take the eyes from shoots round and of medium robustness.

HOUSE SEWAGE (Thos. L. Cater).—The chamber slops diluted with five times their quantity of water may be applied about twice a-week to your Rose trees, &c., so soon as growth commences in the spring. It is no use then to take to apply manures to any plant whilst it is dormant in winter.

PRIMULA (T.).—The variety of Primula you sent is not new. Many similar varieties were exhibited last year. Brightness and distinctness of colour are more to be desired than these pale varieties.

COVENT GARDEN MARKET MEASURES (E. C. E.).—It is of no avail to quarrel with the Covent Garden Market dealers about the measures they employ; but to help you and "other country readers" we will add a definition of some of those measures. *Pottle*: A long, tapering basket, made of deal shavings, holding about a pint and a half. *Sea-kale Punnets*: 8 inches diameter at the top, and 7½ at the bottom, and 2 inches deep. *Radish Punnets*: 8 inches diameter and 1 inch deep, if to hold six heads; or 9 inches by 1 inch for twelve heads. *Mushroom Punnets*: 7 inches by 1 inch. *Salading Punnets*: 5 inches by 2 inches. *Half Sieve* contains three imperial gallons and a half. It averages 12½ inches diameter, and 6 inches in depth. *Sieve* contains seven imperial gallons. Diameter, 15 inches; depth, 8 inches. *Bushel Sieve*, ten imperial gallons and a half. Diameter at top, 17½ inches; at bottom, 17 inches; depth, 11½ inches. *Bushel Basket* ought, when heaped, to contain an imperial bushel. Diameter at bottom, 10 inches; at top, 14½ inches; depth, 17 inches. Walnuts, Nuts, Apples, and Potatoes are sold by this measure. A bushel of the last-named, cleaned, weighs 56 lbs.; but 4 lbs. additional are allowed if they are not washed. The band of Radishes varies with the season.

CINERARIAS WITHOUT PETALS (G. G. B.).—We are unable to account for the absence of petals, but we think that it proceeds from the plants being too gross, from their being kept too far from the glass, and too close and warm. Give them a light airy situation and a temperature not exceeding 45° from fire heat, and we think that of the blooms produced afterwards there will not be many without petals. It is not unusual for the first blooms of early plants to be without the corolla, but it is not so throughout, the trusses having that tendency only at the commencement of flowering. The Beans you sent are—1, Common Dan Dwarf Kidney Bean; 2, Red-speckled Kidney Bean.

SPARROWS EATING CROCUS BLOOMS (A Three-years Subscriber).—Put in stakes or sticks at every 6 feet or so, and stretch black thread or worsted from 9 inches to a foot above the Crocuses, fastening at every 3 feet along the threads a small piece of glass. The birds will alight, but when they see the thread and pieces of shining glass hanging above their heads they will go off directly.

BORDER FOR HERBACEOUS PLANTS AND ANNUALS (G. H.).—Your border of sandy yellow loam would be improved by trenching 18 inches or 2 feet deep, and that is all we should recommend to be done at present. Yellow loams are mostly fertile, and well suited for the growth of herbaceous plants, the sandy nature of your's rendering it all the better, as the plants will not be so liable to go off in winter as if the soil were of a heavy wet nature. Hardy herbaceous plants: *Alstrœmeria aurea*; *Agrostemma coronaria*, and var. *purpurea*; *Aquilegia Caryophyllodes*; *A. glandulosa*, and *A. fragrans*; *Aster laevis*; *Betonica grandiflora*; *Campanula aggregata* and *C. speciosa*; *Cheiranthus Marshalli*; *Diclytra spectabilis*; *D. spectabilis alba*; *Dodecatheon meadia*, and var. *elegans*; *Fritillaria imperialis* var.; *Geranium sanguineum*, and *G. lanceolatum*; *Geum coccineum grandiflorum*; *Hypericum calycinum* (St. John's Wort); *Lia germanica* var.; *L. pallida*; *L. xiphoides*; *Lilium tenuifolium*; *Lobelia orons*, *L. fulgens* St. Clair; *Lycinus Haueana*, and its variety *superba*; *Lythrum roseum superbum*; *Paeonia albiflora*, *P. aristata*, and *P. officinalis* in variety; *Papaver nudicaule*; *Phlox canadensis* and varieties; *Polemonium œreum*, and variety *variegatum*; *Potentilla alpestris*; *P. splendens*, *P. Menziesii*, *P. MacNabiana*, and *P. bicolor grandiflora*; *Pyrethrum carneum*, and many double var.; *Salvia pratensis*; *Scabiosa grandiflora*; *Spiraea filipendula plena*; and to these may be added *Carnations* and *Picotees*. The preceding grow to a height of from 1½ to 2½ feet, and are well suited for third and fourth rows. The following, growing from 6 inches to 1 foot, and occasionally 18 inches high, are well suited for first and second, and also third rows when the border is wide:—*Achillea aurea*, *A. clavonata*, *A. nana*; *Ajuga alpina*, *A. alpina rosea*; *Achemilla alpina conjuncta*; *Allium fragrans*; *Alyseum saxatile compactum*; *Anemone nemorosa plena*, *A. pennina*, *A. palmata*, *A. japonica Honorie Johert* (1½ feet); *Antennaria hyperborea*; *Anomatheca cruenta*; *Antirrhinum* in variety (1½ feet); *Aquilegia alpina*; *Arabis alba*, *A. bellidifolia*, *A. lueda variegata*; *Aubrietia deltoidea grandiflora*; *Aster alpinus*; *Asclepias tuberosa*; *Bellis perennis anubifolia*; *Calandrinia umbellata*; *Campanula muralis*, *C. garganica*, *C. pulla*, *C. psyllia*, *C. fragilis*; *Cerastium tomentosum*; *Colecium autumnale flore pleno*; *Convallaria majalis*, and gold-striped, pink, and double-flowered var.; *Crocus autumnalis*, *C. autumnalis*; *Dianthus deltoidea*, *D. floribunda*, *D. Heddeburghii*, *Dianthus Highclere* var.; *Draba aizoides*; *Dryas Drummondii*; *Eranthis hœnallii*; *Erigeron grandiflorus*, *E. speciosus*; *Galanthus nivalis*, *G. plicatus*; *Geranium verna*, *G. aculeis*; *Heptatica triloba* in variety; *Iris pumila*, *I. reticulata*; *Leneocyon verum*; *Lotus corniculatus flore pleno*; *Muscari botryoides*; *Myosotis sylvatica*; *Narcissus Ajax*, *N. conspicuus*, *N. juncifolius*; *œnothea macrocarpa*, *œ. taraxacifolia*; *Orobis verus*; *Ornithogalum nutans*; *Oxalis tropœoides*; *Primula œcula* in variety; *P. portoricensis*, *P. auricula* in variety; *Pulmonaria officinalis* in variety; *Ris sibirica*; *Ranunculus amplexicaulis*; *Saponaria œcymoides*; *Scilla amœna*, *S. sibirica*, *S. bifolia*, *S. verna*; *Silene alpestris*, *S. Schafta*; *Stachys lanata*; *Stercoraria lutea*; *Stachys Gmelini*, *S. tatarica*; *Tigridia pavonia*; *Trichomena bulbocodium*; *Trollias europæus*, *T. albus*, *Tussilago farfara variegata*; *Veronica alpestris*, *V. œandida*; *Viola odorata* var.; *V. cornuta*, *V. pennsylvanica*, *V. smaragdina*, and *Zephyranthes candida*; to which may be added Pinks, Sweet Williams, and Double Rockets. Taller plants for the back rows: *Campanula pyramidalis*; *Polygonatum vulgare*; *Delphinium Belladonna*, *D. formosum*, *D. Hendersonii*, *D. bicolor grandiflorum*; *Lilium candidum*, *L. lancifolium*, *L. Brownii*, *L. aurantiacum*, *L. chalcidonicum*, *L. martagon*, *L. tigrinum*; *Lupinus arboreus*, *L. polypholus*; *Papaver bracteatum*, *P. orientale splendens*; *Tritoma ovaria*, to which add Hollyhocks. We have proved these and found them good. We could name more, but as you only require select kinds we go no further. If too many are named take a part. To have annuals in the intervals you must allow a space between the plants or rows equal to the height the plants attain, in addition to that required for the herbaceous plants. A dressing of any artificial manure scattered over the border between the plants in April, and going over the ground with a hoe, will do them good, and it may be repeated in six weeks. A dressing of leaf mould early in winter will be as beneficial as a dressing of rich manure. It should be put round the plants 3 inches deep at the back, and an inch in front, allowed to remain all the winter, and be pointed-in in March.

TUBEROSES AND GLOXINIAS AFTER BLOOMING (A Subscriber, H. C.).—After blooming gradually withhold water, giving only a little to prevent the leaves flagging, and keep the plants in a light airy situation until the foliage be decayed; then place the pots containing the Tuberozes in a dry part of the greenhouse, and give no water. In March repot the plants, removing all the old soil unless they have roots, when only so much of the old soil should be removed as can be done without injuring these. A compost of turfy, light, rich loam, and one-third leaf mould, answers well, adding sand if necessary. Grow the plants in a light airy part of the greenhouse, and as near the glass as possible, syringing frequently to keep down red spider, which is their great enemy. After the foliage of the Gloxinias has decayed the pots are to be placed on a damp floor, which will keep the soil a little moist, though it will appear dry. This will prevent the tubers from becoming farinaceous, as they are apt to do when kept on a shelf with soil dust-dry, and consequently rotting when the soil is moistened in spring. To winter Gloxinias safely the temperature should seldom be lower than 45°. In February or March they should be potted, removing all the old soil; and if the soil is in nice order and just moist they should not be watered, but be placed after repotting in a mild hotbed of about 75°, and there remain without water until they begin to grow, when water should be given cautiously at first, increasing the quantity as the plants advance in growth. They should be retained in the hotbed until far advanced for blooming, when they may be removed to the warmest part of the greenhouse, where they will do well after the middle of May. Without heat at the recommencement of growth Gloxinias cannot be grown satisfactorily in a greenhouse. If you start them in February they will bloom in June, and in July if started about the end of March or beginning of April.

SPARAGUSES FOR COVENT GARDEN MARKET (Working Gardener).—It is quite useless to expect the prices you mention except for bunches of uniformly fine heads. You had better write to Messrs. Webber & Co., Covent Garden Market, and state what you purpose doing, and ask if they would take your produce.

PELAGONICUMS FROM SEED (James N.).—To succeed in raising first-rate Pelargonium seedlings, you must obtain the best kinds of plants and sow your own seed. You can buy plenty of seed in the market, but you cannot expect to purchase what has cost the grower much thought and care in hybridising, &c.

WEATHER WISDOM (*John Bryan*).—Weather charts, price 2s. 6d. (by J. Glaisher, Esq., F.R.S.) as used by the Royal National Lifeboat Institution, can be purchased at Negretti & Zambra's, 155, Fleet Street, London, E.C., and such charts will last a year, or longer if the observer do not mind tracing the barometric line for two or three months on the same chart, using each time different-coloured lines. Full explanations of the way to use a chart, with charts for use in the book itself, are to be found in a small work (price 1s.) entitled "How to use the Barometer," published by Beaumont & Sons, 21, Paternoster Row. This is a very useful book for observers of weather who wish to learn how to record the fluctuation of the barometer, of wet and dry bulb thermometers, and the direction of the wind. The best kind of barometer for gardening purposes is the Farmer's Barometer by Negretti & Zambra, price £2 10s., and attached to this instrument is a dry and wet bulb thermometer. There is a small and cheap portable barometer (price 12s. 6d., by Casella, 23, Hatton Garden, London) called the Agricultural Barometer. Mr. Casella warrants it to work very accurately for general purposes. One such instrument has now been in use for more than twelve months, has travelled from near London to Scarborough, and further northward, and back again without injury, and reads pretty accurately with a Standard Barometer. Once, indeed, the readings taken by Casella's instrument were sent by "X." on a chart to Mr. Glaisher. The chart was corrected by the readings taken at the Greenwich Observatory, and those readings were not very different (for general purposes) from those observed by the 12s. 6d. barometer. The tube of the barometer is very small, but this weather glass is a cheap one, and is not to be despised. A dry and wet bulb thermometer, sufficient for weather purposes, can be purchased of Negretti & Zambra for 12s. 6d. Standard instruments, for scientific purposes, are very expensive, but they are not really required for a gardener's use. When "X." in his remarks, page 525, said "There is no expense attending such observations," he meant that there was no expense incurred in noting down the weather (a chart for a year costing only 2s. 6d. or less), after the first outlay had been made by a master in providing suitable instruments for his gardener.

HARDINESS OF CERTAIN FERNS (*W. G. S.*).—Of the Ferns named *Lastrea decemloba* requires a greenhouse, and not a cool one; *Asplenium Belangeri* will do in a greenhouse, but needs a stove to do well; *Campyloneuron phymatodes* (*Pleopeltis phymatodes*, also *Drynaria vulgaris*, and *Asplenium foniculaceum* are stove Ferns. *Lastrea Standishii*, has not, so far as we know, been proved to be hardy, but it is likely to be so. This fine new Fern certainly does well in a cool house or frame. *Lastrea patens* is of continental origin, and, as we had it, did not succeed at all well in a greenhouse fernery, but it grew luxuriantly in the stove. *Davallia canariensis*, *Nephrodium molle*, and *Pteris longifolia* require a greenhouse; and *Asplenium* (*Cyrtium*) *falcatum* is only hardy in warm sheltered situations, doing much better in a cool house than anywhere out of doors.

APPLE TREES INFESTED WITH INSECTS (*D. Barton*).—The trees should have a dressing of 8 ozs. of soft soap dissolved in a gallon of water along with 8 ozs. of salt. Apply it at a temperature of 160°, brushing it well into the crevices. This will free the trees of insects and moss, and should be applied now. Be careful not to injure the fruit-buds by rubbing. No specimen came in your letter.

CAMELLIA-BUDS AND LEAVES FALLING (*Idem*).—From the plants losing their leaves and being in a bad state of health, we should think that there is something the matter at the roots. Is the drainage good, and the soil sweet and not soddened with water? If not, then it should be. Are the plants watered when they require it, and only then? The soil should always be kept moist, at the same time no water should be given until it is required. An imperfect root-action is the most likely cause of the buds falling.

FERNS WEAK—PRIMULAS DAMPING OFF (*Idem*).—Your Ferns are weak from being kept too warm. They will become strong if properly potted, well supplied with water both at the root and in the atmosphere, and kept in a proper temperature, with good ventilation. The Primulas damp off from being constantly watered. They would not be so liable to damp-off if the surface of the soil in the pots were covered quite up to the collar of the plants with small pieces of stone. These should range from the size of a pea up to that of a hazel nut. From one-half to three-quarters of an inch is sufficient. Give more air, and do not water so often; give plenty of water, but only when they require it.

TIME OF FORCING STRAWBERRIES (*Idem*).—The beginning of February is a good time, and early enough to have a good crop. They cannot be forced with a prospect of a full crop before that time, and the longer it is deferred the more plentiful the fruit will be. Thompson's "Gardener's Assistant" contains the necessary information for the pruning of fruit trees.

RHUBARB RUNNING TO SEED (*A Moonraker*).—It throws up flower-stems more abundantly when planted in poor than in rich ground; but it will produce its large umbels under any circumstances after it has been planted three or four years, some kinds more than others. This weakens the roots very much and should not be allowed. Cut away the seed-stems, when you first perceive them, level with the ground, and this will induce the formation of crowns at their base, instead of the energies of the roots being expended in the production of seed. It would be well to take up the roots now, preserving as much soil attached to them as possible, and after trenching the ground, and working in liberal amount of manure, to replant, dividing the roots if large; but they will not produce so well the first year as if they had not been divided. If you cannot take the Rhubarb up and prepare the ground properly, give a good top dressing of manure, and point it in, not going so deep as to injure the roots. A good watering of liquid manure now and then in summer will make it stronger.

RHUBARB FORCING (*Idem*).—If your dark cellar is sufficiently warm it will answer admirably for forcing Rhubarb. The temperature should not be less than 50°. It is not too late, for if you put roots there now they will produce long before stools in the open air unheated and uncovered. You may pot the roots in Vine pots as you propose, or spread a little soil on the floor, place the roots on it, and then cover them with moist soil. There is this advantage in forcing Rhubarb where it grows, the roots are but little injured and may be forced every other year without any great deterioration, whereas if they are taken up and placed in a cellar or elsewhere they are of little value afterwards, requiring more time to recover than is needed to raise from offsets roots of greater strength, and in every way better for forcing-purposes.

CUCUMBERS AND MELONS IN PIT HEATED BY HOT WATER (*R. J. Wheeler*).—Your pit would do well for the growth of Cucumbers and Melons, provided you could form a bed over the tank, and leave the sides of the tank exposed so as to heat the atmosphere; but as you will not be able to do this, from the top of the tank being level with the bottom of the pit, we would advise you to place 6 inches of rubble over the bottom of the pit as well as upon the tank, and above the rubble a layer of sods, grass side downwards. Over the tank insert a drain-pipe or tile, with a bore 3 inches in diameter, at every 2 feet, the lower end going through the sods into the rubble, and the other opening into the pit. These pipes should be inserted perpendicularly, and through them heat will ascend and give a sufficient atmospheric temperature, and the heat from the tank going amongst the rubble will give bottom heat. Three inches of soil all over the sods will be sufficient to begin with, but immediately under the centre of each light place about half a barrowful of soil in the form of a cone with the top flattened, and exactly 1 foot from the glass, so that you must make the rubble so thick that you will have 10 or 12 inches of soil over it, and yet have the tops of the cones of soil 1 foot from the glass. When the soil of the cones has become warmed through, plant in the centre of each two Melon or Cucumber plants, one to be trained to the back and the other to the front of the pit. If you have the plants to prepare, sow the seeds in pots, plunge these in the soil, pot off, and finally plant in the centre of the cones. When the plants grow, the space between the cones and the sides of the pit is to be covered or filled with soil by degrees, placing it against the cones so as to cover the bed with soil nearly level with the tops of the cones. The tops of the tiles will be a little above the level of the soil, and must be kept free. You may raise from seed any plants you like in the pit, at least such as require heat, so long as they do not interfere with the Cucumbers and Melons. Remove the plants before they do that. Your other frames will answer for hardening off the plants raised in the heated pit. Cucumbers and Melons do not succeed well in the same compartment, you should, therefore, have a division or rather partition wall.

PRUNING RECENTLY-TRANSPLANTED LAURUSTINUS (*A Subscriber, Allerton*).—It is not safe to cut in these shrubs in winter, for that is their blooming season. They are not the hardiest of shrubs; hence, when they are cut in in winter they frequently die down. Let them alone until the first week in April, and then cut them in to the desired shape and dimensions. The heads will assist the shrubs to form roots, and they will further protect the shoots of which these shrubs are seldom devoid at the base.

GARDENER ILL-TREATED (*One in Trouble*).—We have a letter for this correspondent if he will send us his address.

VINES IN POTS (*J. Naylor*).—Your Vines in pots, one year old, with canes 5 feet long, are, we presume, too weak to fruit. If not strong—that is, if much less in diameter than the little finger, and the eyes are not large and plump, cut-in to two eyes now, and replot in the same pots after shaking away most of the old soil. If the Vines are strong, the eyes plump, and the wood brown and hard, do not prune them at all, but pot them at once in 15-inch pots, providing good drainage, and using a compost of rather light, rich, turfy loam. Those in 14-inch pots may be fruited in that size, and in that case you will merely have to look to the drainage and remove the surface soil and replace it with rich compost. If not already done they should be pruned at once, cutting them in to 6 feet. You may pot them in 18-inch pots, but do not disturb the ball, though you may slightly loosen the roots around it. Vines in pots require the same temperature as Vines in borders, and this you will learn from the "Vine Manual" which you have; but we may state that for the first fortnight the temperature from fire heat should be from 40° to 45°, for the second fortnight from 45° to 50°, for the third fortnight from 50° to 55°, and in a week it should be increased to 60°, and that it is to be maintained until the flowering takes place. That and the setting over, we increase the temperature to 65°, and continue that heat until the fruit changes colour, when we lower it 5° by night from giving more air, and this is continued until the fruit is ripe, when we lower the temperature as much as practicable, but not below 50°. On these temperatures we allow a rise of 5° on dull days, 10° on those which are cloudy with clear intervals, and from 15° to 20° on bright days. Elphinstone published a little book on Vines in pots, but it is now out of print. The subject will be treated of shortly.

LEAVES OF MRS. POLLOCK GERANIUM ALTERING (*E. G. H.*).—The leaves lose the markings from the plants being kept in too close and warm an atmosphere. The stove only forces them into growth. Geraniums of the tricolor-leaved section are less faint in their markings in a stove in winter than in a greenhouse; but the marking is much less bright in winter anywhere than in spring and summer. Geraniums do not require steaming and roasting in stoves. Most of the nurserymen who advertise in our columns can supply you with Geraniums.

GARDEN INFESTED WITH SLUGS (*W. B.*).—You must not apply gas lime now and crop with Potatoes. The gas lime should be put on in autumn; one-third of the quantity is sufficient, a hundred bushels per acre being a good dressing of fresh lime. If your garden have fruit trees in it do not use gas lime, but fresh lime, and it will kill slugs. March is a good time to apply it. Slake the latter so as to reduce it to powder, then spread it over the ground when the weather is mild, and turn it in. If you give your ground a dusting of fresh lime on the evenings of mild showery weather at intervals in summer, your garden will soon be free of slugs. Be cautious in using gas lime; it will kill vegetable as well as animal life, and is not safe to use in a garden, nor anywhere until it has been exposed to the action of air and water for a considerable time.

PELAGONION LEAVES MILDEWED (*S. B.*).—The tips of the leaves are badly mildewed. Dust them with flowers of sulphur. They have the appearance of having been injured by frost. Give the plants all the air possible, and keep the leaves dry; keep the plants near the glass and as cool as possible, but exclude frost. Give air early, and always when the external atmosphere is above 32°, except on foggy days.

DECAYING CUCUMBER PLANTS (*Sunnylands*).—Most likely the roots have been kept too hot and too dry in this dull sunless weather. We have examined such Cucumbers and found the soil some 6 inches from the surface like so much ashes from beneath a furnace. When the soil and the roots are all right, we have seen such a result produced by a very bright sun for half an hour, after some weeks of dull weather. The higher the temperature in dull weather the more likely would the plants be to suffer. A little shade is useful in such a case.

WASH FOR WALLS AND FRUIT TREES (C. C. E.).—Lime water is made by placing 14 lbs. of fresh lime in a hog-head and pouring in 40 gallons of water, stirring well up; and after standing for forty-eight hours, the clear liquid drawn off in lime water. We have not used this for destroying insects, but we find it the best of all agents for clearing a lawn of worms. We have no faith in its being used to kill the eggs of insects, and we do not recommend it as a wash for walls. We recommend all walls to be washed with fresh lime and soil in equal parts, brought to the consistency of whitewash by the addition of enough boiling urine or strong liquid manure. Apply the mixture hot—the hotter the better, to the wall, and brush it well into every crevice, and if it do not kill the eggs it will seal them up for ever; 4 ozs. of soft soap and 8 ozs. of salt, dissolved in a gallon of water and applied hot to the wall, form an excellent wash, and will kill moss and the eggs of most insects. The efficacy of these and other remedies in a great measure depends on the composition being thoroughly brushed to. The trees may also be washed with the latter solution, applied hot, and with a brush, and well rubbed into the crevices, being careful of the buds. It should not be applied hotter than 169°. For winter dressing fruit trees, 8 ozs. of Gishurst compound should be dissolved in a gallon of soft water.

MATHEWS'S ELIZA PEAR—MELON MARROW (A Lady Subscriber).—Mathews's Eliza Pear is the same as Groom's Princess Royal, rich and sugary, and in season from January to March. The jam made from the Melon Vegetable Marrow is just like that from the Apricot. The seed has been advertised in the pages of this Journal.

RHODODENDRON AND CAMELLIA LEAVES SPOTTED (Idem).—The leaves sent have the appearance of having being wetted frequently, as if by water dripping from the roof, and their pale colour arises from want of light, growth being made at this dull season. Keep the foliage dry, and water the plants whenever they require moisture, and not oftener. You will know when to water by the dryness of the soil. Then give a good watering. The cause of the leaves browning and becoming spotted may be due to the plants being watered once-a-week and all at the same time; and, each receiving the same quantity of water, some must have more than they require, whilst others have the soil too dry. On examining the Camellia leaf we have come to the conclusion that the drainage of the pots is not so perfect as it ought to be. That, combined with the buds not being formed perfectly through a deficiency of heat in the preceding summer, will be sufficient to account for the buds falling. This evil mainly arises from deficient root-action.

LENGTHENING A GREENHOUSE (Manchester).—The plan No. 2 with the hipped roof would be the most suitable for gaining the objects you have in view. The junction of the sashes or sash-bars would be best done against a ridge-board; and if the house is 30 feet long two iron pillars or rods would support it more thoroughly.

HEMLOCK IN A GRASS-COVERED ORCHARD (A Worcestershire Lady).—We fear there is but little hope of eradicating this pest while you continue to allow the grass to grow for hay. If you could pasture it for one season, and cut off the foliage of the Hemlock frequently as soon as it shows above ground, it is likely that you would succeed in destroying it. We have ourselves a similar case to yours. A piece of ground has been in hay for some years, and being under trees the crop is not an important one, especially as the Hemlock seems to increase rather than diminish, it being only cut when the hay crop is, and that more for appearance than use. Cutting off the tops an inch or so below the surface with a thistle-spud is a good practice; and if this be followed up during April, May, and June the Hemlock will be much weakened, and but few plants of it will be left for another year, and these would succumb to a similar course of treatment.

WEeping PINE (J. G.).—A Weeping Pine would be an acquisition, and there is a probability that the seed in your possession, from Finland, if fresh, would produce one. Sow it in about a month hence in sandy turfy loam, in pots, and place the pots in a cool frame.

PLANTING A VINERY (F. James).—We generally approve of the proposed planting of the vinery, but we think your planting at back will be thick, and would recommend not more than five in the first house, and ten in the second. In the early house, instead of three Muscats, we would have one Dutch Sweetwater and one Buckland Sweetwater, or Royal Muscadine, for the early ripening; or as you have Hamburgs in front, you may have fewer Hamburgs at back. In the larger or later house we would not plant four Golden Hamburgs, not because the Grape is not a good one, but it is a little uncertain, and should be cut when ripe. One or two Vines of it would be enough. We would substitute for it and the variety

not named, Muscat of Alexandria, Bloodwood Muscat, and Muscat Hamburg. Instead of having two Barbarous Vines, which are also a little uncertain, one white Grape, either Calabrian Itaisin or Trebbiano, would make a good companion. These three and Lady Down's require a good heat in autumn to ripen them before winter. The plan proposed will do well.

GRAPES SHANKING (A. C. S.).—You do not say whether your Vines are planted inside or outside. We think it is very likely that lighter cropping will prevent the shanking, but not altogether if the roots are very deep. If so, lifting would be the best remedy; but as you want to make sure of a crop whilst effecting an improvement, try what a lighter crop an 18 more fire heat will do. The strength and vigour of the wood seem to denote want of ripeness. We would try the plan you suggest, planting against the back wall, and training down the glass, and allowing the Vines in front to go on until those at back became strong; and to assist them in doing this you must let them have a good portion of light. Then when you replace your present Vines, we would advise you to plant inside; but to have the inside border, however narrow, higher by a few inches than the outside one. Our Vines, to our sorrow, are all planted outside and brought in through the wall, but it is not a good plan. Be sure of drainage, the least stagnant water will cause the Black Frontignan to shank.

FRUIT TREES IN POTS (A. Y. Z.).—Your pit or houses in London at p. 529 of No. 248), being 9 feet in width, your four-foot bed in front would do well for Melons, with two four-inch pipes below the bed and two for top heat, as recommended at page 523; but if you wished to grow Cucumbers in that bed in winter, it would be advisable to have three pipes for top heat instead of two, or if you grew anything that required a great heat in winter. Now to the first inquiry, as to what fruit trees in pots you could grow in a second bed, 2 feet wide, at the back of the house, with no bottom heat, and 4 feet from the top of the bed to the glass, we would reply that you would succeed with no hardy fruit trees if placed at once in a temperature that would suit Melons; nor would the fruit, if obtained, be of much value if you allowed the glass to be pretty well covered with the branches and leaves of the Melons. If, however, you started Peaches, Vines, or Figs in some other place, or in the same place, but beginning below 50°, and raising the temperature gradually to 60°, so as to have Peaches set, Vines showing their bunches, and Figs their fruit, before these plants had a temperature of from 60° to 65° at night, and from 70° to 85° or more with air in sunny days, then the fruit trees would do the same temperature as would suit the Melons; and the flavour of the fruit would be fair just in proportion as there was an open space of glass over them, and the sun would also shine through the openings between the leaves of the Melons. If you are fond of Figs, perhaps they would be best in such a position. A dozen pots might be placed in such a border. Peaches would require great attention to air-giving. We need not allude to tropical fruit, but the Passiflora quadrangularis would do well against such a wall, and the Melon-like fruit would swell well if care were taken to fecundate the flowers artificially. It would often be well to keep such a house as you describe as a propagating-house and Melon-house alone. Supposing you to sow now, propagating could go on with the heat that would suit the young Melons, and a dozen of plants or so could either be grown in large pots, or at first only half of the bed might be given to them, the rest being kept for propagating; and when the plants were struck they could be set on the back bed to be slightly hardened off. Then if you sowed in April, the Melon plants, say a dozen, could be planted in the back border, which would be warm enough in May and June without bottom heat, and these could be trained down the glass by the time the first crop was ripening and going off. Sow again in the beginning of June, and you could have a late crop in the bed with the advantage of bottom heat. Such a narrow back bed would also be useful for Ferns and low flowering plants that liked heat. As to the second inquiry, we would be satisfied with the clean gravel above the clinkers for bottom heat, and 5 inches from the pipes will be quite enough. We would place an eococant fibre between the gravel and the soil, as the fresher it is and the drier it becomes the more will it act as a non-conductor, and keep the heat from rising into the soil. As you have placed brickbats and clinkers around the pipes in an open manner, it is necessary that you should have pipes, say drain-tiles, an inch or 2 inches in diameter, not only for pouring down water, but also allowing air to enter; for if the air round the pipes were thoroughly confined the heat would not be transmitted by it any more than by dry eococant fibre.

NAMES OF FRUITS.—(E. C.).—Glori Morecan. (T. L.).—Ne Plus Meuris. **NAMES OF PLANTS (M. D.).**—1, Doodia caudata; 2, Asplenium lanceolatum.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 20th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 14	29.846	29.716	42	37	42	41	S.W.	.14	Densely clouded; strong south wind; fine; boisterous.
Mon... 15	30.061	29.812	41	35	41	42	S.W.	.02	Clear; very fine throughout.
Tues... 16	29.981	29.670	50	42	41	43	S.	.16	Rain; fine; mild at night; rain.
Wed... 17	30.174	30.116	52	44	40	44	S.W.	.06	Dark, and densely overcast; rain; overcast; warm at night.
Thurs... 18	30.114	29.816	51	43	41 ¹	44 ¹	S.W.	.10	Overcast throughout; mild for the season; rain at night.
Fri... 19	29.692	29.667	53	41	42 ¹	44 ¹	S.W.	.12	Clear; overcast; windy; rain.
Sat... 20	29.739	29.624	52	50	43	45	S.W.	.01	Partially overcast; boisterous with showers; fine.
Mean..	29.937	29.774	48.71	38.85	41.57	43.35	...	0.61	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

CROOKS' IMPROVED INCUBATOR.

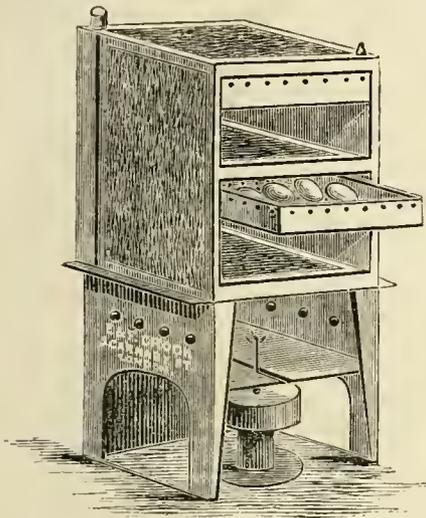
THE accompanying engraving is a representation of Messrs. Crooks' improved incubator, which, though not differing ma-

terially in principle and form from the older apparatus, nevertheless presents some important modifications. To show more clearly what these are it will be necessary to describe briefly the original apparatus. The size known as No. 2 was calculated to hatch 60 hens' eggs, or 84 Pheasants' eggs, was 22 inches high, 15 inches wide, and 11 inches from front to back. The trays of perforated zinc, lined with blanket, were enclosed each in a

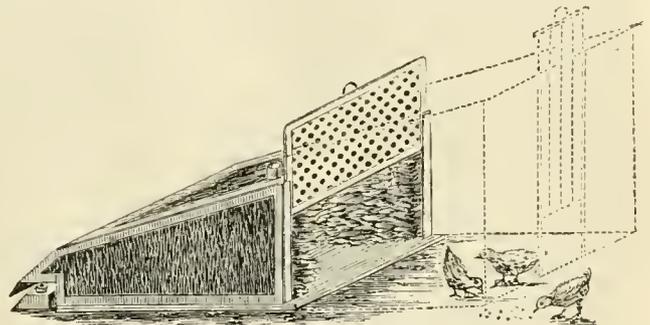
compartment all the sides of which, except the front, were hollow, and served to contain water by which the requisite degree of heat was communicated to the eggs. To heat the water, both in the old and improved apparatus, a lamp is employed which burns a highly rectified non-explosive oil, the burner being a brass tube pierced with five of the smallest holes which it is possible to drill, and filled with cotton threads to draw up the oil. In lighting the lamp a piece of burning paper is held against this tube till the vapour from the oil ascends and is lighted. Externally, the water-jacket is covered with blanketing to prevent loss of heat. The new apparatus instead of being closed at the back is open, so that there is always a current of cool air from front to back below the eggs, and these receive the heat principally on the upper side, as in natural hatching.

The alterations and improvements are stated by Messrs.

Crook to have "originated not from any inefficiency in the principle of our former incubator, but to avoid, as much as we are able, those disasters happening through inattention, the results of which are to dry up the moisture necessary to the perfect development of the germ, and destroy the vitality of the chick. To describe our alteration, it will be necessary to say that we are now imitating Nature as closely as possible, by radiating the warmth upon the top of the egg only, and allowing the under side to remain somewhat cool. Your readers will at once see that this is a natural method; and as the germ floats only at the top side of the egg, and remains so in whatever position the egg may be turned, we consider this beautiful provision of Nature to be our unerring guide, and our experiments have proved that this is the correct method for us to apply our heat. We have not in any way altered the configuration of the apparatus; each remains precisely the same.



Crook's Improved Incubator



Artificial Rearing Apparatus.

"The artificial rearing-apparatus, of which the above is a representation, is very simple in its construction, and is, in fact, a more perfect carrying out of the plan proposed by M. Réaumur, whose works upon the subject of artificial incubation are well worthy of the attention of poultry-breeders. The apparatus is a slanting casing of hot water, with a loose casing of perforated metal, and lined with lamb skins; a lamp is placed at the back end, which keeps up the required warmth for winter use. It is intended that this useful adjunct should be attached to a coop, as represented by the dotted lines in the en-

graving, which prevents the birds from flying on to the top of the apparatus; the oblique construction of the apparatus enables the chicks to nestle comfortably up to the top side, in imitation of Nature, as if the chick were nestling under the hen. There is no warmth applied to the feet of the birds, as we have found from experience that when they are warmed from the floor upon which they rest, they become weak and languid, soon have the cramp, and readily take cold. The warmth in this, as in the improved incubator, is only applied to the top or back of the bird."

RAILWAY CHARGES.

I AM glad to find from "our Journal" of December 26th that others besides myself complain of railway charges. I am not surprised. The only wonder is that we have submitted to the grievance so patiently—another proof, were it wanting, of the endurance of the Anglo-Saxon! Still, we are told, "If you tread on a worm, it will turn," and I only hope we shall "turn" to some purpose. Your correspondent "J. K." suggests some plans somewhat similar to those that have been thought over by myself. As, however, I promised to suggest a remedy, I now fulfil my promise, and must leave my fellow exhibitors to act as they think fit.

Firstly, then, I think that the Poultry Club may justly turn their attention to this subject: their object is the encouragement of poultry shows and of poultry keeping, especially for exhibition. Are the present railway charges likely to increase the number of exhibitions or exhibitors? I trow not. I do not think any of the members would object to some small amount of income being devoted to remedying this grievance; it need not be very large. I would suggest that at the next meeting of the Club a resolution should be proposed (and if I might do this by proxy I should be very glad to propose it myself), declaring the opinion of the Club, that poultry exhibitions would be encouraged, and indirectly railway traffic would be promoted, if it were an established rule on all railways that

unsold birds returning from an exhibition should travel free. Supposing such a resolution carried, and I can hardly imagine a dissentient voice, it could be printed, and forwarded to the head office of the principal railways, requesting an answer; or, to save the expense of printing, I would take upon myself the trouble of writing out the said resolution and forwarding it to the Secretary for his signature; the postage would then be the only expense. I have already written to the Secretary on this subject.

Independently of any such action on the part of the Poultry Club, I am willing to enter into communication with the principal exhibitors of poultry, and sound them as to their willingness to sign a petition to be forwarded to the various railway authorities. Many, perhaps, would kindly spare me some of this trouble by signifying at once to me, under cover to "our Editors," their willingness to join in the requisition. Of course, all this performance must cost some money, and perhaps most exhibitors would scarcely care to entrust their donations to the unknown quantity that I have hitherto been. The amounts, with the consent of "our Editors," might be sent to the office, and to all such helpers I would give "our Editors" perfect liberty to unravel the mystery. To some few I am already known by name, though not personally, and one gentleman, whom I have never seen, a frequent and successful ex-

hibitor, after my first letter on this topic, wrote me that he should be pleased to send me £1 towards any expenses I might incur. Perhaps "our Editors" might be induced to assist us by acting as Treasurers.

I may state that glad as I should be to meet any number of my fellow-manics on this or any other subject connected with poultry, my duties tie me too completely at home.

I hope next week to draw up a form of requisition that I think may form the ground-work, subject to hints from any persons interested in the matter.—Y. B. A. Z.

THE POULTRY BOOK.

IN the notice of "The Poultry Book" in THE JOURNAL OF HORTICULTURE for January 16th, it is stated that "it is 'The Poultry Book,' published some years since, edited by Mr. Wingfield and Mr. Johnson, re-arranged with additions. We think it right to apprise our readers of this, as Mr. Tegetmeier's name only appears on the cover and in the advertisement, from which they might be led to believe that it is the production of that gentleman." Permit me to state as follows: Messrs. Routledge, the proprietors of the copyright and plates of the original work, having determined to issue a new poultry book, entrusted me with its preparation. Any portions of the old edition which might be serviceable were placed at my disposal. Finding, however, little of the letter-press available, and that such portions as I adopted would have to be so modified, that it would be unfair to render Messrs. Wingfield and Johnson responsible for them, it was determined to issue the work solely under my name. In the part which has appeared, less than three pages of the original matter are retained out of the twenty-four of which the Number consists. How far the quantity of introductory matter thus adapted (a proportion much in excess of what will occur in the body of the work) can be said to support the statement that this is the original "Poultry Book, re-arranged with additions," I leave your readers to determine.—W. B. TEGETMEIER.

We are obliged by this communication, as it authoritatively informs our readers what "The Poultry Book," by Mr. Tegetmeier, is to be. The name is the same as that published by the Rev. Mr. Wingfield and Mr. Johnson, and the plates are the same. When Messrs. Routledge placed any portions of the old edition at Mr. Tegetmeier's disposal, they could not have imagined that Mr. Tegetmeier would be disposed to commit a wholesale plagiarism. Five (not three) pages of that old edition are included, without any acknowledgement, in the first twenty-four pages.—Eds.]

PROFIT OF POULTRY-KEEPING.

My stock consisted of a Dorking cock and three hens, and three Brahma hens. The return has been 814 eggs and sixteen and a half pairs of chickens, the latter averaging 7 lbs. per pair when killed, for an outlay, including food, wire and string netting, and all expenses, of £5 5s. 6d. My fowls have only a small run, and except for an hour in the morning, when they are allowed a run in a neighbouring meadow, are constantly shut in. As egg-producers, I find the Brahmas give three eggs against two of the Dorkings; the latter cannot do without their hour's liberty in the morning, and I think all Brahmas would be best where the birds cannot have entire liberty, their quiet behaviour also makes them great favourites with all parties.

The birds should be kept young. My plan is to dispose of the two oldest hens annually, two pullets taking their places; this keeps them at the same average age, and also secures two winter layers at least. As to food, I use barley, barleymeal, oatmeal, soaked bread, potato raw or cooked, and plenty of green meat. They likewise have clean pump water, and clean houses. This management will keep the birds in good condition; but to produce eggs they must have, in addition, as many worms, snails, and other small insects as their owner can possibly supply them with. The return of eggs varies considerably in different seasons; for 1864 it was 486, whereas in 1863 it was 825.—J. M. S.

TWO EGGS IN A DAY.—I have a Cochin hen which has performed the unusual feat of laying two eggs in one day. The first egg was laid about 8 p.m. on Sunday morning, and when she went up to roost at 4 she had laid another, thus laying two

eggs in eight hours. I am quite certain of this, for I have only three hens of that breed, and one is sitting. I took three eggs out of the nest on Sunday, and I am positive that there was not any in on Saturday night. The hen is eight months old. Both the eggs were perfectly shelled.—POULTRY.

THE WALSALL EXHIBITION OF POULTRY AND PIGEONS.

THE quality and the quantity also of the specimens entered for this Show very far exceeded the expectations of its promoters. The entries were fully double the number which the most sanguine of the Committee had ever calculated on, and combined with this unexpected result (as so many other shows were taking place simultaneously, or within a day or so), the names of the exhibitors who would compete foretold, what proved to be the fact, a very heavy Show. Placed in so unexpected a difficulty, the Committee did all that then lay in their power to accommodate every one; but to find places for double the number of pens in the space calculated for one-half that number, was a problem of no easy solution. The only course was, "it must be done." As being the most accessible pens of any to light, arrangements were made with Messrs. Turner, of Sheffield, for the number required, and their man did all he could to confine the pens within the prescribed space. A large proportion of the pens for the smaller varieties of poultry were consequently overlapped in front some 9 inches, in no way adding interest to the Exhibition; but it was the only resource to save space, and even then the lower tier of pens was actually on the floor of the Guildhall, and the upper ones were so raised above the line of vision that benches had to be provided all round for the Judges, Messrs. Hewitt and Cottle, during the time of making their decisions. As the poultry pens in all cases crossed the windows the difficulty of seeing the birds thus situated was great, and this circumstance tended much to exclude the light from the remainder. The gas, though liberally introduced, seemed only to cause a confused combination of light with extreme shadow, rendering minute inspection impossible alike to Arbitrators and visitors. Mishaps are generally twin-born, and the morning proved wet and lowering, and so the weather continued until past mid-day. It may be said, that no provincial first show ever yet contained so many first-rate specimens; and a like successful result, we are informed, will be fully provided for at future meetings of the Walsall Society. The building, at present only in course of erection (not being yet roofed in), will, by another year, be completed. It is intended to serve as a place of exercise for the district Rifle Volunteers, and will be of ample size to accommodate any number of pens under a thousand, and the light will in all parts be good. This is, indeed, a vastly improved prospect for the future; and, evidently, Walsall will shortly hold a place among the first ranks of local shows, as many enthusiastic exhibitors are to be found among the inhabitants of the surrounding district.

But to the Exhibition itself. A most singular feature was, that of the large number of pens entered, not more than a dozen were found vacant. *Dorkings* were the first class, and a capital collection they proved; they enjoyed the best light in the whole Show. The hens throughout the class showed to great advantage, but some few of the cocks seemed ailing and over-exhibited. One or two of the cocks had the spurs placed outside the legs, which amounts to a positive malformation. The *Spanish* class was indisputably one of the very best that has been met with for a long time, almost every pen being excellent. All the best pens in this variety had, therefore, to be taken to fresh pens, and placed in a full light, side by side, before any positive opinion of relative merit could be arrived at, and the same dilatory process was compulsory with not a few other varieties. Mr. Rodbard's cap pen was marvellously well shown. The Partridge-coloured *Cochins* were good, and splendidly formed; but many of the cocks were ruddy on the breast, and the hens absolutely buff-throated. Mr. Jennison, of Manchester was the cup winner in Buff *Cochins* with his adult pen, and the attraction of the exhibition was considerably increased to the public, by the order of the Committee to take this splendid lot from a dark hotton pen into a light opposite an avenue, to replace another pen, "highly commended," shown by the same gentleman, by which arrangement (after the prizes were awarded) this pen of *Cochins* proved of easy inspection to every visitor. The *Hamborough* classes were especially good; but they did not show to the same advantage as they do when placed in full daylight. Many of these pens were evidently much injured by over-exhibition, and a pen or two so much so, that they were returned to their owners as unfit to remain in their present diseased state in close proximity to valuable healthy competitors. The *Polands*, though a limited entry, were excellent in quality. The *Game* classes were among the best in the Show; but these varieties happened to stand among the least best with the light of day. Mr. Jas. Fletcher, of Stoneclough, near Manchester, took the principal prizes with Brown Reds and Red Piles; some extraordinarily good Black-breasted Reds were also shown. The "Any other Variety" class was exceedingly good. In *Game Bantams* the competition was, as is always the case in the present day if good prizes are offered, of first-rate quality. Mr. John Crossland here stood first with such a pen of *Duckwings* as would do credit to any breeder, nor would they have ever returned homewards had not the price placed on them been

purposely prohibitory. In the "Any other Variety of Bantams" some excellent Cochins, Bantams, Blacks, Whites, Japanese, and tolerably good Sehrichts competed.

Ducks were very good, but all varieties competed together. The "Selling" class of nearly fifty pens brought many buyers.

The Pigeons were a very good portion of the Show; the Carriers, Pouters, Jacobins, Owls, Turbits, and Barbs especially so. Many of the latter variety, however, proved in sad condition. In the "Variety" class for Pigeons the "Siberian Joe" Pigeons, as they are entered by their owner, were again successful. The name by which they now appear is quite a mistake; they are the "Icelanders," a Pigeon well known and frequently met with years back, but of late comparatively rare. The Siberian Ice (or Snow) Pigeon, if they must be re-named, could not be complained of, though we ourselves doubt their Siberian origin.

A peculiar feature of the Walsall Show, and one highly creditable to its promoters, was the intrinsic value of its nine silver cups, stated as being worth three guineas each. They were all exact counterparts of each other, and we were assured by two highly respectable silversmiths: "They were worth £4 each at least, wholesale, anywhere." May we here suggest that it would be well for some other Committees we could name to become copyists in this particular of real value, as being a change much wanted? The Walsall Committee have led the way in this matter so well that we trust the complaints sometimes arising as to the absolute value of plate prizes will be no longer heard; and we are confident that the competition will be proportionally increased.

As on the day of opening towards one or two o'clock the sun broke out, the Show was well attended by many of the aristocracy as well as by poultry amateurs. On the second day, though the weather was quite unpromising, the Show was also well attended. The Committee were most obliging to all amateurs, and we rejoice in the success of the Walsall first meeting.

DORKINGS (Any colour).—First and Cup, A. Fenton, Crimble Hill, Rochdale. Second and Third, T. Tatham, Kingsforth, Northampton. Highly Commended, Mrs. Bailey, Shooter's Hills, Stoke-on-Trent; H. Lingwood, Barking, Needham Market, Suffolk; J. D. Hewson, M.D., Cotton Hill, Stafford. Commended, Mrs. M. Seamons, Hartwell, Aylesbury Bucks; J. Spittle, West Bromwich.

SPANISH.—First and Cup, J. R. Rodbard, Aldwick Court, Wrington near Bristol. Second, Rev. J. de L. Simmonds, Chilcomb Rectory, Winchester. Extra Second, H. Lane, Ashley Villa, Ashley Road, Bristol. Third, A. Fenton. Extra Third, G. Lamb, Compton, near Wolverhampton. Highly Commended, J. Smith, Walsall; E. T. Holden, Walsall; Rev. J. de L. Simmonds; J. Hildick, Walsall. Commended, E. Draper, Priuor's Hill, Northampton; A. O. Worthington, Newton Park, Burton-on-Trent; C. T. Bishop, Birmingham; J. Smith, Walsall; E. T. Holden; J. R. Rodbard.

COCHIN-CHINA (Partridge).—First and Cup, J. Stephens, Walsall. Second, E. Tudman, Ash Grove, Whitechurch, Salop. Third, J. Wood, Brinscall Hall, Chorley, Lancashire. Highly Commended, R. J. Wood, Brinscall Hall, Chorley, Lancashire; "Caxtus," Clipping Norton, Oxon; H. Bates, Yardley, near Birmingham; E. Tudman. Commended, E. Tudman; J. Stephens.

COCHIN-CHINA (Any other colour).—Cup, First, and Third, C. Jennison, Belle Vue, Manchester (Buff). Second, Mrs. Wolferstan, Statfold Hall, Tamworth. Extra Third, H. Yardley, Birmingham. Highly Commended, C. T. Bishop; E. C. Boville, Wellington, Burton-on-Trent; E. Hemrose, New Uttoxeter Road, Derby; T. Tatham; C. Jennison. Commended, J. Stephens; H. Mapplebeck, Woodfield, Moseley, near Birmingham; R. Adams, Handsworth.

HAMBURG (Gold or Silver-pencilled).—First and Cup, J. Gleave, Church Lawton, Cheshire. Second, T. Fletcher, Stoneclough. Third, R. Roy, Skirbeck, Boston. Highly Commended, T. Wrigley, jun., Tonge, Middleton, near Manchester; J. Holland, Chestnut Walk, Worcester. Commended, R. H. Nicholas, Malpas, near Newport, Monmouthshire; R. Sherwood, Claines, Worcester.

HAMBURG (Golden-spangled).—First and Cup, H. E. Emberlin, Leicester. Second, J. Palmer, Wednesbury. Extra Second, I. Davies, Harborne, near Birmingham. Third, A. K. Wood, Burneside, Kendal. Highly Commended, W. Beeston, Brockhurst Farm, near Walsall; W. Horton, Alblington, near Wolverhampton; J. Palmer. Commended, S. Mills, jun., Caldmore Cottage, Walsall; R. Tate, Green Road, Leeds.

HAMBURG (Silver-spangled).—First and Third, J. Fielding, Newchurch, Manchester. Second, M. Palmer, Wednesbury. Extra Third, J. Gleave. Highly Commended, A. K. Wood; T. Davies, Belmont Cottage, Stow Hill, Newport, Monmouthshire. Commended, Hon. W. C. W. Fitzwilliam, Wentworth Woodhouse, near Rotherham; Miss A. M. S. Hurt, the Knoll, Littleover, near Derby; Rev. W. Serjeantson, Acton Burnell Rectory, Shrewsbury.

POLANDS (Any colour).—First, G. C. Adkins, the Lightwoods, near Birmingham. Second, J. R. Jessop, Hull. Highly Commended, E. Smith, Middleton, near Manchester.

GAME (Black-breasted and other Reds).—Cup and First, J. Fletcher, Stoneclough, near Manchester. Second, Hon. H. W. Fitzwilliam, Wentworth Woodhouse, near Rotherham. Third, J. H. Cook, Severn Bank Tannery, Worcester. Highly Commended, J. Fletcher; J. H. Williams, Spring Bank, Welshpool; W. Wainright, Stretton-under-Fosse, near Rugby; J. E. Sheldon, Wednesbury; J. Tyler, Brook House Loughborough; M. Billing, jun., Wood End, Erdington, near Birmingham. Commended, W. Wainwright; J. Jeken, Eltham, Kent.

GAME (Any other colour).—First, J. Fletcher. Second, J. H. Williams. Third, M. Billing, jun. Commended, R. Linbrick, Kenilworth.

ANY OTHER VARIETY.—First, F. W. Zurlhorst (Crève Cœur). Second, H. B. James (Light Brahma Pootra). Third, R. Loft, Woodmansley, near Beverley, Yorkshire (Sultane). Extra Third, W. Newman, Walsall (Brahma Pootra). Highly Commended, G. Lingard, jun., Selly Grove, Selly Oak, near Birmingham; Mrs. M. Seamons; R. F. Goodwin, Middleton, near Manchester (Black Hamburg); R. H. Nicholas (Chinese Silkies and Black Hamburg); E. Smith (Black Hamburg).

GAME BANTAMS.—First, J. Crossland, jun., Wakefield. Second, R. E. Postans, Brentwood. Highly Commended, J. G. Pearson; J. Skinner, Mairdree Farm, near Newport, Monmouthshire; G. Maples, jun., Waverley, near Liverpool; R. B. Postans; Rev. G. Raynor, Kelvedon Hatch Rectory, near Brentwood, Essex; J. Percivall, Clent Villa, Harborne near Birmingham; C. W. Brierley, Middleton, near Manchester. Commended, A. Fenton.

BANTAMS (Any other variety).—Cup and First, C. W. Brierley. Second, J. H. Kilner, Wibsey, near Bradford (White). Highly Commended, E. Cambridge, Stokes Croft Road, Bristol; H. Draycott, Humblestone, near Leeds (Gold-laced); M. Leno, Markyate Street, Dunstable, Beds (Gold-laced); S. Nock, Walsall; T. Davies. Commended, H. Draycott (White); H. E. Emberlin (White); H. Mapplebeck (White).

DUCKS (Any variety).—First, A. Worthington. Second, J. R. Rodbard (Rouen). Third, J. Skinner (Aylesbury). Highly Commended, T. Tatham (East Indian); H. E. Emberlin (Aylesbury); Mrs. M. Seamons (Aylesbury); Rev. W. Serjeantson (East Indian). Commended, Hon. W. C. W. Fitzwilliam.

SELLING CLASS.—First, S. Mills, jun. (Hamburg). Second, Messrs. S. & R. Ashton, Mottram, Cheshire (Poland). Extra Second, T. Tatham (Dorking). Third, E. Smith (Cochin-China). Extra Third, J. R. Jessop (Widgeon Ducks). Highly Commended, R. H. Nicholas (Hamburg); C. Jennison. Commended, J. Hopkins, Walsall (Brahma); T. Gameson, Walsall (Hamburg); R. Dodge, Sheffield (Game); C. Jennison (Cochin-China); E. Shaw, Plas Wilnot, Oswestry (Spanish); E. Smith; I. Beebee, Walsall (Dorking); E. C. Boville (Hamburg).

PIGEONS.

CARRIERS (Any colour).—First and Second, T. Colley, Sheffield. Extra Second, S. Harding, Fareham, Hants. Commended, H. Allsop, Birmingham; H. Simpson, jun., Whitty, York; W. Massey, Fulford, York.

TUMBLERS (Any variety).—First, E. E. M. Roysds, Greenhill, Rochdale. Second, J. J. H. Stockhall, Broad Green, near Liverpool. Commended, H. Mapplebeck.

POWERS (Any colour).—First, W. Massey. Second, E. E. M. Roysds. Highly Commended, W. R. Rose, Cransley Hall, Kettering; H. Yardley.

FANTAILS (Any colour).—First, H. E. Emberlin. Second and Extra Second, H. Yardley.

JACOBS (Any colour).—First, A. Middleton, Newport, Monmouthshire. Second, E. E. M. Roysds. Commended, H. Yardley.

BARBS (Any colour).—First, W. Massey. Second, G. H. Roberts, Penwortham, Preston. Very Highly Commended, H. Yardley. Highly Commended, H. Simpson, jun.; W. Massey.

TURBITS (Any colour).—First, W. Massey. Second, H. Yardley. Commended, H. Mapplebeck.

OWLS (Any colour).—First, H. Yardley. Second, G. H. Roberts. Highly Commended, E. E. M. Roysds.

ANY OTHER VARIETY.—First, J. J. Stockhall ("Siberian Joe"). Second, J. R. Jessop. Extra Second, H. Yardley. Highly Commended, H. Simpson, jun.; J. Percivall. Commended, S. A. Taylor, Sutton Coldfield (Trumpeters); H. Roberts (Trumpeters); H. Yardley.

SILVER CUP FOR THE BEST COLLECTION OF PIGEONS.—H. Yardley.

JUDGES:—Poultry: Edward Hewitt, Esq., of Eden Cottage, Sparkbrook, Birmingham. Pigeons: Dr. Cottle, of Pultney Villa, Cheltenham.

JEDBURGH POULTRY SHOW.

THE eighth annual Exhibition of the Jedburgh and Border Counties Society was held in the Corn Exchange, Jedburgh, on Wednesday and Thursday, the 17th and 18th inst.

The following is the prize list:—

SPANISH.—Cup, T. Knowles, Aberdeen. Second, H. Beldon, Goitstock, Bingley. Third, A. Cochrane, Perth. Very Highly Commended, A. Ridpath, Gilmour Place, Edinburgh. Highly Commended, —Wallace, Aberdeen. *Chickens.*—First, R. Teebay, Fulwood. Second, A. Ridpath. Third, J. Anderson, Friershall, Melrose. Very Highly Commended, W. Paterson, Langholm, Dumfriesshire. Highly Commended, J. Macaulay, Edinburgh.

DORKING (Coloured).—First, T. Knowles. Second, J. Anderson, Ruthven House, Meikle, Forfarshire. Third, C. Pease, Southend, Darlington.

DORKING (Silver).—Cup, Countess de Flahault, Tullyhann Castle, Perth. Second, D. Hardie, Sorbie, Langholm. Third, J. Elsworth, Campsie Junction, Glasgow. Commended, Miss Milne, Otterburn.

DORKING (Coloured or Silver).—*Chickens.*—First, Countess de Flahault. Second, Lord Binning, Mellerstain. Third, R. Kerrs, Monteviot, Jedburgh. Highly Commended, Countess de Flahault. Commended, D. Hardie. *Pullets.*—First, Countess de Flahault. Second and Third, Miss Milne. Highly Commended, T. Mansfield, Headmanston House; Lord Binning. Commended, J. Jardine, Arkleton, Ewes.

COCHIN-CHINA (Any variety).—First and Third, J. Shorthose, Newcastle. Second, W. R. Park, Abbotmeadow, Melrose. Highly Commended, Mrs. Craw, Jedburgh; H. Beldon. *Chickens.*—First and Second, J. Shorthose. Third, Mrs. W. Ford, Hardgreen, Dalkeith. Commended, Miss E. A. Agniby, The Hollis, Gramere; C. Pease; T. Knowles; H. Beldon.

BRAHMA POOTRA.—First, Miss H. Scott, Auerum House. Second, J. Shorthose. Third, C. Pease. *Chickens.*—First, W. H. Fell, Statmine, near Ponton-le-Fyde. Second, Miss H. Scott. Third, Mrs. Craw, Jedburgh. Very Highly Commended, J. Shorthose. Highly Commended, Mrs. Craw. **GAME (Black or Brown Reds).—**Cup, J. Brough, London Road, Carlisle. Second, R. Pickering, Carlisle. Third, H. M. Julian, Whitefriarsgate, Hull. Very Highly Commended, T. Mansfield, Headmanston House.

GAME (Duckwings).—First, Messrs. Easton & Mabon, Jedburgh. Second, T. Dyson, Pellon Lane, Halifax. Third, F. L. Roy, Nenthorn, Kelso.

GAME (Any variety).—*Chickens.*—First, J. Anderson, Meikle. Second, D. Hardie. Third, Mrs. J. Turnbull, Brae, Jedburgh. Highly Commended, T. Mansfield; R. Pickering.

HAMBURG (Silver-spangled).—First, J. U. Sommer, Jedburgh. Second, Mrs. Craw. Third, H. Beldon. Highly Commended, S. C. Noble, Kerdal, Westmoreland.

HAMBURG (Silver-pencilled).—Cup, W. Cheyne, Selkirk. Second, H. Beldon. Third, R. Roy, Skirbeck Rectory, Boston, Lincolnshire.

HAMBURG (Golden-spangled).—First, H. Beldon. Second, R. Dickson, Selkirk. Third, A. Heathie, Selkirk. Highly Commended, H. Beldon. Commended, R. Dickson.

HAMBURGH (Golden-pencilled).—First, R. Roy. Second and Third, H. Beldon. Highly Commended, J. M'Innes, Brownlands, Paisley.

GAME BANTAMS (Any variety).—First, W. F. Entwistle, Otley. Second, G. Turnbull, Dundee. Third, J. Anderson. Very Highly Commended, Miss E. A. Aglionby (Piled). Highly Commended, M. Ballantyne, Sprouton (Duckwing); D. Broomefield, Kelso; Messrs. Euston & Mabon (Black Red). Commended, F. L. Roy (Black Red).

BANTAMS (Any other variety).—First, J. Muirhead, Tranent. Second, F. L. Roy (Silver-laced). Third, J. R. Jessop, Beverley Road, Hull (Black). Very Highly Commended, F. L. Roy (Black). Highly Commended, H. Draycot, Humberstone, Leicestershire (White).

GEENE (Any variety).—First, S. Swan, Bush (Toulouse). Second, T. E. Boog, Lanton (Toulouse). Third, D. Hardie (Toulouse). Highly Commended, Miss Bell, Marcheleugh (Toulouse); T. D. Souderson, Magdalen Hall (Chinese); T. Elliot, Hyndhope.

DUCKS (White Aylesbury).—First, A. O. Swan, Everton Bush, Jedburgh. Second, J. A. S. E. Fair, Gilliestongues, Jedburgh. Third, G. Laidlaw, Mervin-law. Very Highly Commended, E. Leech, Greave House, Rochdale. Highly Commended, S. Swan, Bush. Commended, Miss H. Scott.

DUCKS (Rouen).—First, J. Gibson, Woolmit. Second, Capt. Scott, Kirklands, Aunrum. Third, T. Elliot, Hyndhope. Highly Commended, J. Hall, Broomhanks, Jedburgh; W. Hodgson, Darlington; E. Leach; Mrs. Douglas, Hyndhope.

DUCKS (Any other distinct breed).—First, E. Hutton, Pudsey (Pintail). Second, J. Jennison, Bellevue Gardens, Manchester (Carolinna). Third, J. R. Jessop, Hull (East Indian). Highly Commended, T. C. Harrison, Hull (Brown Call); Countess de Flahault (White Call). Commended, J. R. Jessop; E. Hutton (Teal).

TURKEY.—*Poult.*—First, E. Leech. Second, T. Mansfield, Headmstone House. Third, T. L. Jackson. Highly Commended, Lord Eidingham. Commended, J. Muirhead, Tranent; T. Elliot.

ANY OTHER VARIETY.—First and Second, Countess de Flahault (La Flèche and Crève Cour). Third, R. Left, Woodmansey, near Beverley, Yorkshire (Sultans).

SINGLE COCKS.

SPANISH.—First, J. Shorthose. Second, T. Knowles. Third, Mrs. Craw. **DOEKING**.—First, Countess de Flahault. Second, A. Cochrane, Perth. Third, J. Shorthose.

COCHIN-CHINA.—First and Third, J. Shorthose. Second, H. Beldon. **GAME**.—First, Messrs. Euston & Mabon. Second, D. Hardie. Third, T. Dyon. Very Highly Commended, Mrs. J. Turnbull.

HAMBERGH.—First and Second, H. Beldon. Third, R. Tate, Leeds. Highly Commended, Mrs. Craw. Commended, H. Pickles, jun., Early.

The Silver Cup, to the most Successful Exhibitor, in the foregoing classes, J. Shorthose.

SWEETSTAKE FOR BANTAMS.—First, T. Oliver, sen., Jedburgh. Second, D. Brown, Bridge Lane, Perth. Third, G. Turnbull, Dundee. Very Highly Commended, W. F. Entwistle, Otley; G. Dodds, Crailing; T. Mallon, Sunderland; Messrs. Euston & Mabon. Highly Commended, F. L. Roy. Commended, J. Steel, Kelso; J. Anderson; S. H. Jeffrey, Jedburgh.

SELLING CLASS (Any variety).—First, T. Cleminson, Darlington (Brown Red). Second, J. A. S. E. Fair (Aylosbury Ducks). Third, Mrs. Dickens (Silver Dorking).

COTTAGES' PRIZES (Any variety).—First, A. Henderson, Dnion, Jedburgh (Dorkings). Second, W. Murdie, Jedburgh (Spanish). Third, A. Stevenson, Cessford (Black Red Game).

PIGEONS.

The Silver Cup given to the most Successful Exhibitor in Pigeon classes, J. Thackray, Petersgate, Hull.

ALMOND TUMBLERS.—First, J. Thackray. Second, F. Else, Westbourne Grove, Bayswater, London. Third, H. Yardley, Birmingham.

TUMBLERS (Any other variety).—First, R. Pickering, Carlisle. Second, H. Yardley. Third, J. Thackray. Highly Commended, J. Bell, Newcastle (Kites). Commended, J. R. Jessop, Hull; T. Knowles.

FANTAILS.—First, W. R. Park. Second, J. R. Jessop. Third, F. Else. Very Highly Commended, W. Veitch, jun., Jedburgh. Highly Commended, H. Yardley. Commended, J. Sharp, Canal Cottage, Johnstone, Renfrewshire.

POWERS.—First, Second and Third, J. Grant, Edinburgh. Very Highly Commended, J. Grant. Commended, J. E. Spence, Dovecotehouse, Musselburgh.

NUNS.—First, R. Laurie, Melrose. Second, W. Veitch, jun. Third, R. Paterson, Melrose. Highly Commended, W. R. Park.

OWLS.—First, R. Pickering. Second, J. Thackray. Third, J. R. Jessop.

TURBITS.—First, R. Thompson, Kendal. Second, F. Keir, Church Lane, Edinburgh. Third, H. Yardley. Highly Commended, R. Paterson. Commended, J. Thackray; R. Pickering; Mrs. Craw.

JACOBS.—First, J. Thackray. Second and Third, H. Beldon. Very Highly Commended, J. Sharp. Highly Commended, R. Pickering. Commended, F. Else.

BARBS.—First, J. Thackray. Second, H. Yardley. Third, H. Beldon. Very Highly Commended, R. Pickering. Highly Commended, Mrs. Craw. Commended, H. Yardley.

ANY OTHER VARIETY.—First, J. Thackray (Swallows). Second, J. R. Jessop (Magpies). Third, H. Yardley. Very Highly Commended, Mrs. Craw. Highly Commended, Mrs. Craw. Commended, H. Yardley.

SELLING CLASS.—First, J. Gow, Kelso (Barbs). Second, R. Thompson. Third, J. Sharp, Johnstone (Black Magpies). Very Highly Commended, A. B. Boyd, Trinity (Monks). Commended, A. B. Boyd (Sheld).

CANARIES.

SCOTCH FANCY (Yellow).—*Cock*.—First, R. Ballantyne, Hawick. Second, J. Kemp, Galashiels. Very Highly Commended, R. Ballantyne. Commended, J. Hervey, Jedburgh.

SCOTCH FANCY (Buff).—*Cock*.—First, J. Kemp. Second, J. R. Thompson. Very Highly Commended, J. R. Thompson. Highly Commended, J. Jeffrey. Commended, G. Laidlaw, Galashiels.

SCOTCH FANCY (Buff).—*Hen*.—First, W. Hardie. Second, G. McMillan, Jedburgh. Very Highly Commended, R. Ballantyne. Highly Commended, J. Hervey. Commended, R. Ballantyne.

SCOTCH FANCY (Yellow).—*Hen*.—First, W. Tinline, Galashiels. Second, J. Kemp. Very Highly Commended, J. Dalglish, Galashiels. Commended, J. Grierson, Edgerton.

BRIGIAN FANCY (Yellow).—First, J. Jeffrey, Kelso. Second, J. Kemp. Commended, J. Marshall, Galashiels.

BELGIAN FANCY (Buff).—*Cock*.—First, G. Laidlaw. Second, J. Kemp. Very Highly Commended, J. Dryden, Kelso. Commended, G. Mabon, Jedburgh.

BELGIAN FANCY (Yellow).—*Hen*.—First, J. Kemp. Second, J. Dryden. Very Highly Commended, G. Laidlaw. Commended, W. Tinline.

BELGIAN FANCY (Buff).—*Hen*.—First, W. Tinline. Second, J. Marshall. Very Highly Commended, J. Dryden. Commended, J. Marshall.

FLECKED CANARIES (Yellow).—*Cock*.—First, T. Darling, Hawick. Second, A. Ferguson, Kelso. Very Highly Commended, R. Rutherford, Jedburgh. Commended, W. Finlay, Jedburgh.

FLECKED CANARIES (Buff).—*Cock*.—First, Miss Clay, Kerchoesters. Second, J. R. Thompson. Very Highly Commended, J. Kemp. Highly Commended, R. Ballantyne. Commended, Miss Collier, Jedburgh.

FLECKED CANARIES (Yellow).—First, G. Park, Galashiels. Second, J. Kemp. Very Highly Commended, G. Mabon. Highly Commended, J. Barton, jun., Jedburgh. Commended, A. Ferguson.

FLECKED CANARIES (Buff).—*Hen*.—First, J. Kemp. Second, J. Hall, Jedburgh. Very Highly Commended, J. Marshall. Highly Commended, Miss Clay; T. Darling, Hawick. Commended, J. Steel, Kelso.

JUDGES.—*Poultry*: Oliver Nicholson, Esq., Landport, Portsmouth; and E. Dixon, Esq., Gold Island, Hexham; *Pigeons*: G. J. Maclean, Esq., Morningside; *Couriers*: J. Broomfield, Esq., Edinburgh.

KENDAL POULTRY SHOW.

The eleventh annual Exhibition was held on the 18th, 19th and 20th inst. The following is a list of awards:—

GAME (White and Piles).—First, H. Thompson, Maiden Hill, Penrith. Second, T. West, St. Ann's, Ecclestone, St. Helen's, Lancashire. Third, Rev. F. Watson, Missing Hill House, near Kelvedon, Essex. Highly Commended, T. West.

GAME (Black-breasted and other Red).—First, H. Snowden, Great Horton, near Bradford, Yorkshire. Second, T. West, Thirby, T. Statter, Bury, Lancashire. Highly Commended, A. Fenton, Grimble Hall, Rochdale; R. Wood, Old Hutton, Mithorpe; M. W. Stobart, Middleton-on-Fow, Darlington; H. Thompson. Commended, T. Robinson, Uxerston. *Chickens*.—First and Cup, J. Fletcher, Stoneclough, Manchester. Second, T. Bottomley, Soaper Lane, Bottoms-shelf, Halifax. Third, T. Robinson. Highly Commended, J. Hodgson, Whittington, Kirkby Lonsdale.

GAME (Any other variety).—Prize, H. Snowden. *Hen*.—First, T. West. Second, W. Hodgson, Darlington. Third, H. Snowden. Highly Commended, J. S. Butler, Poulton-le-Fylde. Commended, M. W. Stobart.

HAMBURGH (Golden-pencilled).—First, J. Robinson, Garstang. Second, A. K. Wood, Burnside, Kendal. Third, Messrs. Burch & Boulter, Allen Street, Sheffield.

HAMBURGH (Silver-pencilled).—First, J. Robinson. Second and Third, A. K. Wood.

HAMBURGH (Golden or Silver-pencilled).—*Chickens*.—First, S. Taylor, Ibbotsholme, Windermere. Second and Third, A. K. Wood. Highly Commended, J. Robinson; J. Walker, Haya Park, Knarborough.

HAMBURGH (Golden-spangled).—First, T. Waring, Preston. Second, A. K. Wood. Third, Messrs. Burch & Boulter. Highly Commended, R. Tate, Leeds; A. K. Wood. Commended, J. Walker.

HAMBURGH (Silver-spangled).—Cup, First and Second, A. K. Wood. Third, J. Robinson.

HAMBURGH (Gold or Silver-spangled).—*Chickens*.—First, J. Robinson. Second, J. Walker. Third, Messrs. S. & R. Ashton, Mottram, Cheshire. Commended, J. Walker; Miss Steel, Hundhow, near Kendal.

DOEKINGS (Coloured).—First and Cup, J. Cople, Ecclestone, Prescott. Second, H. Harvey, Sheffield. Third, T. Statter. Highly Commended, J. Robinson; T. Atham, Kingsthorpe, Northampton; H. Knowles, Liverpool; Hon. Mrs. Howard, Levens Hall, Kendal. Commended, G. R. Smith, Rams-bill Villa, Scarborough; J. Hatfield, Cottingham, Hull; J. H. Wilson, St. Bees. *Chickens*.—First, H. Knowles. Second, Messrs. Gunson & Jefferson, Whitehaven. Third, J. Robinson. Highly Commended, W. W. Kuttledge, Storth End, Milnthorpe; J. K. Fowler, Prebendal Farm, Aylesbury; H. Harvey. Commended, J. Walker.

COCHIN-CHINA (Cinnamon and Buff).—First, T. Stretch, Ormskirk. Second, J. Cattell, Birmingham. Third, H. Mapplebeck, Woodfield, Moseley, Birmingham. Highly Commended, H. Urvey; G. Fell, Warrington; Messrs. Bowman & Fearon, Whitehaven. Commended, H. Tomlinson, Balsall Heath Road, Birmingham.

COCHIN-CHINA (Brown and Partridge-feathered).—First, R. J. Wood, Chorley. Second, T. Stretch. Third, Messrs. Bowman & Fearon. Highly Commended, Miss E. A. Aglionby, The Hollins, Grasmere.

COCHIN-CHINA (White).—First, Miss Biggar, Braes House, Eeclefechan. Dummies. Second, Dawson, Hopton Mirfield. Third, Rev. F. Taylor, *Chickens*.—First, Second, and Third, R. F. Taylor. Commended R. Smalley, Lune Villa, Lancashire.

SPANISH (Black).—First, Miss Biggar. Second, H. Harvey. Third, Messrs. Burch & Boulter. Highly Commended, G. Robinson, Gelderd's Yard, Highgate, Kendal; E. Brown, Albert House, Sheffield. *Chickens*.—First, Miss Biggar. Second, J. Marchant, Hanson Lane, Halifax. Third, Miss B. Ridpath, Edinburgh. Highly Commended, R. E. Postans, Brentwood, Essex; T. Kew, Dale House, Burton, Westmoreland; H. Harvey. Commended, J. Harrison, Burnside, Kendal; J. H. Wilson.

BRAMAHO POOTRAS.—First, R. W. Boyle, Galtrim House, Wicklow. Second, J. K. Fowler. Third, H. Harvey. Highly Commended, F. Crook, Vine Cottage, Forest Hill, London; J. Wangh, Castle Hill, Luchmaben, Dumfries; G. H. Roberts, Penwortham, Preston; Mrs. J. F. Smithson, Whitwell House, Chorley.

ANY OTHER VARIETY EXCEPT BANTAMS.—First, J. Robinson. Second, H. Harvey (Silver Polands). Third, Messrs. Gunson & Jefferson.

SELLING CLASS.—First A. K. Wood. Second, J. P. Harrison, Kendal. Third, R. D. Holt, Orrest Head, Windermere. Highly Commended, T. C. Harrison; J. P. Harrison; R. B. Postans; M. E. Hutton, Pudsey. Commended, F. W. Earle, Edenhurst, Huyton.

SINGLE COCKS.

GAME.—Cup, First and Second, C. W. Brierley. Third, J. Fletcher. Fourth, M. W. Stobart. Highly Commended, T. Statter; Messrs. Bowman and Fearon. Commended, A. Fenton. *Cockerel*.—First, A. Fenton. Second, T. Bottomley. Third, J. Brough Carlisle. Fourth, C. W. Brierley.

DORKING.—First, H. Harvey. Second, R. D. Holt. Highly Commended, R. D. Holt.

BANTAM (Game).—First, Mrs. A. Monkhouse, All Hallows Lane, Kendal. Second, W. F. Entwistle, Otley, Yorkshire. Third, Messrs. J. & F. Fryer, Snavely near Chesterfield. Highly Commended, W. Hodgson; H. Shun-
nagh, Brook Cottage, Southwell, Notts; R. B. Postans.

BANTAMS (Game).—First and Cup, R. B. Postans. Second, H. Mapplebeck. Third, Mrs. Park, Highson Hall, Whitehaven. Fourth, J. Walker. Highly Commended, W. F. Entwistle; Messrs. J. & S. Fryer; J. Skinner, Maidene Farm, Newport. Commended, G. Maples, jun.

BANTAMS (Any other variety).—First, E. Hutton. Second and Third, M. Leno, The Pheasantry, Dunstable. Highly Commended, W. J. Cope. Messrs. (Pekin Bantams); C. W. Brierley. Commended, T. Davies Belmont Cottage, Newport.

DUCKS (White Aylesbury).—First and Cup, J. K. Fowler. Third, Miss M. Jackson, Vale House, Garstang. Highly Commended, E. Leech, Rochdale; J. K. Fowler.

DUCKS (Romen).—First, T. Statter. Second, J. Nelson, Heaton Mersey, near Manchester. Third, Willison, Kendal. Highly Commended, J. Nelson; Miss M. Jackson; J. Walker; Mrs. J. F. Smithson; Messrs. Gursion & Jefferson. Commended, H. Knowles; T. Robinson; Mrs. J. F. Smithson.

ANY OTHER VARIETY.—First, T. C. Harrison. Second, A. Fenton (Black East India). Third, R. Turner, Crosthwaite, Milnthorpe. Highly Commended, F. W. Earle, Edenhurst, Hutton, Liverpool, (Black East India); R. Smally, Lune Villa, Lancashire; E. Hutton (Brown Call Ducks).

PIGEONS.

CARRIERS.—First, H. Allsop, Birmingham. Second, H. Yardley, Market Hall, Birmingham. Highly Commended, W. Massey, York; A. I. Robinson, Sunderlam; E. Brown. Commended, R. H. Artindale, Liverpool; T. Wareing.

ALMOND TUMBLERS.—First, A. I. Robinson. Second, F. Key, Beverley. Highly Commended, H. Yardley; E. Brown. Commended, W. Stalker, Liverpool.

TUMBLERS (Any variety).—First, H. Yardley. Second, W. Stalker. Highly Commended, A. I. Robinson. Commended, R. Thompson, Kendal.

OWLS.—First, H. Yardley. Second, G. H. Roberts.

POWERS AND CROPPERS.—First, A. I. Robinson. Second, W. R. Rose, Cransley Hall, Kettering. Highly Commended, W. R. Rose; H. Snowden; H. Yardley. Commended, W. Stalker.

BARBS.—First, G. H. Roberts. Second, A. I. Robinson. Highly Commended, T. Kew, Dale House, Burton, Westmoreland; H. Yardley. Commended, H. S. Salisbury, The Lawn, Kempsey; R. Thompson.

FANTAILS.—First, R. W. Thompson. Second, H. Yardley. Highly Commended, H. S. Salisbury. Commended, R. James, Kendal; H. S. Salisbury.

TURBITS.—First, R. Thompson, Moresdale Hall, Kendal. Second, H. Harvey. Highly Commended, R. Dodge, Sheffield; H. Yardley; A. I. Robinson.

TRUMPETERS.—First, A. I. Robinson. Second, J. Thompson, Market Place, Bingley. Highly Commended, Mrs. A. Monkhouse; F. Key.

JACOBS.—First, J. Thompson. Second, R. Thompson. Highly Commended, H. S. Salisbury; A. I. Robinson; E. Brown. Commended, R. Dodge; H. Yardley.

ANY OTHER VARIETY.—First, H. Harvey. Second, G. Sherwin, Whitehaven. Highly Commended, T. Young, St. John's Wood, London (Archangels); H. Yardley; J. K. Trenam, Helmsley, Yorkshire. Commended, H. Yardley.

SELLING CLASS.—First, G. Woodley, Thorne, Doncaster (Black Barbs). Second, J. Thompson. Highly Commended, R. Thompson (Spangled Sabians); D. Harding, Middlewich, Cheshire; Miss J. A. Monkhouse, (Carriers); W. Jackson, Bolton-le-Sands (Yellow Mapples); H. Yardley; W. Massey; J. Thompson; R. Doge. Commended, R. Thompson (Nuns); Miss J. A. Monkhouse; J. Thompson (Turbits).

SPECIAL PRIZE.—First and Cup, M. Thompson, Beast Banks, Kendal. Second, R. Wood, Old Hutton, Milnthorpe. Third, M. Graham, Kendal. Highly Commended, M. Graham. Commended, G. Robinson, Kendal; R. Wood; M. Redhead, Kendal.

JUDGES.—*Poultry:* Mr. R. Teebay, Fullwood, Preston. *Pigeons and Game:* Mr. H. Belden, Bingley.

THE NATIONAL COLUMBARIAN SOCIETY'S EXHIBITION.

THIS Society invited the public on Tuesday to their annual Show, held in the Masonic Hall of the Freemasons' Tavern. We congratulate the Society on the great interest their Shows have attracted, and on this occasion the Exhibition called forth loud expressions of surprise and commendation from every one. The hall was filled with lines of pens, and contained more than 1500 birds, around which circulated from two to six an unbroken succession of visitors.

On entering the Hall we noticed on our left the *Carriers* of Mr. Hedley, fine specimens, shown singly, and well worthy of the distinction. Next came his *Barbs*, birds of rare quality; continuous with them were placed the twelve White Barbs of Mr. Jones, the best collection of Whites we ever saw together; the rich-coloured eye wattle, large and round, was seen to perfection on the snowy-white ground; then Mr. Else's *Carriers*, birds that have held their place in so many prize lists. Next we come to a diminutive bird, the *Black Mottles* of Mr. Esden. We were delighted to see this old fancier of Beards and Mottles so successfully keeping before our eyes that prettiest of Tumblers the Black Mottle, which had threatened to become extinct. We next noticed the *Carriers* of Messrs. Ord, Faith, Feltham, Allen, and Edmonds. As these gentlemen exhibited about two hundred birds altogether, we must pass these over in more general terms than they merited. Mr. Ord showed Whites and Blues, two Blue hens in a round pen, perfect in style and symmetry, the flowers of the flock; Messrs. Faith and Feltham, Blacks and Duns; Messrs. Edmonds and Allen, Blues. A host of *Powers* shown by Mr. Bacchus were birds of

great length of limb and feather, and, arranged in a semicircle on the raised platform, constituted quite a feature in the Show; nor must we omit the *Powers* of Mr. Hayne, who sent six birds of great beauty of feather, form, and length.

The National Columbarian Society was the first, we believe, to encourage the exhibition and fancy of that kind of Pigeon really in use as messengers. The bird now trained for these long flights is a foreign variety, sedulously reared and trained in Belgium, and now adopted in this country. Messrs. Hudson and Betty sent a large number of these birds. Specimens in Mr. Hudson's pens were noted to have flown four hundred miles at one journey.

Near them we saw a large pen of high-flying *Rollers*, birds evidently bred with great care; in markings they were saddle-backed and black-mottled, and their shape denoted great agility and strength. Next were the *Fantails* shown by Mr. Allison and Mr. Else, two large pens of them; birds of the highest merit. We were delighted with Mr. Allison's powder-blue *Owls*, their neatness and colour made them gems. We are still amongst the Toys admiring a pen of Almond *Baldheads*, Yellow *Baldheads*, and *Jacobins* exhibited by Mr. Morris. This good Toy-fancier never fails with his pretty birds to satisfy the critical eye of the fancier, or please the visitor. Mr. J. Percivall showed also Toys, *Jacobins*, *Archangels*, Short-faced birds, and some resplendent Blue *Dragons*. As we look at them we cannot recollect any to surpass them. We next have to notice a pen of *Almonds*, *Agates*, and some other of the thirty-two modifications of colour (all of which may be found in an Almond stud), the property of Mr. Merck, and some very good *Almonds* and *Kites* shown by Mr. Park.

Returning to the *Barbs*, represented by a superb collection, Mr. Dart had some very good birds, *Yellows*, *Blacks*, and *Reds*. Mr. Jones filled a pen with twenty magnificent birds, besides showing others singly and in pairs; among them were birds of singular excellence, being models of perfection. The pigmy *Powers* of Mr. Tegetmeier are a novelty. They are very interesting, showing all the properties of our old *Powder* reduced to a minimum; still they have the properties of an elegant *Powder*, and may become favourites here as they are in the Emerald Isle.

Mr. Walker's pen of *Almonds* and *Black Mottles* were birds of great value and in high condition. We admired Mr. Esden's pretty Blue *Beards*, Mr. Else's *Trumpeters*, and then reached Mr. Wiltshire's contribution, eight full-propertied Black *Carrier* cocks, magnificent birds, and by themselves an exhibition. Lastly we have to say a word on the *Almonds* shown by the Chairman of the Society, Mr. Jayne. They filled a large pen, were such as Mr. Jayne's birds are well known to be, and the old connoisseurs of this Pigeon pressed round the pen to admire their favourites.

We understand the Society intend holding their next Exhibition during the cattle show, in December, for the convenience of country fanciers. We have no doubt it will be an event in even that busy week.

(From a Correspondent.)

THE annual grand Show of the above Society was held at the Freemasons' Tavern on Tuesday last, when both members and visitors mustered in strong force. On the whole, the show of Pigeons was of a marked and superior character, indeed we scarcely remember seeing the pens so well and so numerously filled. Messrs. Hayne and Bacchus showed a collection of *Powers*; Mr. Hedley, *Carriers* and *Barbs*, among which were some good specimens. Mr. Betty, the Secretary of the Society, had a small pen of *Archangels* not quite so bright in colour as we should like to see. Mr. Jones exhibited White, Red, Yellow, and Black *Barbs*; many of them very good in eye, but somewhat long in the face. Mr. Hudson showed his stud of homing birds, some of which have been at Winchester, Southampton, Salisbury, &c. Mr. Percivall exhibited a pen of *Dragons*, which were greatly admired for their sound colour and fine form; also a pen of Short-faced *Tumblers*, *Baldheads*, *Archangels* (first prize at Birmingham), &c. Mr. Esden's *Beards* and *Black Mottles* were much noticed, both specimens being very good; and an exceedingly pretty pen of *Almonds* and *Black Mottles* was exhibited by Mr. Walker. The *Carrier* class was unusually well represented by Messrs. Else and Faith, the first-named gentleman especially showing some very fine birds; a young *Dun* hen in particular was deservedly admired. Mr. Allison's *Fantails* were good, but hardly up to what we have seen on former occasions. A pretty pen of *Baldheads* and *Jacobins* was sent by Mr. Morris, the Red and Yellow *Baldheads* were very neat and good. We are pleased to find this Society so steadily progressing, and heartily wish them that success they so fairly deserve.

DOTTINGS AT NEWPORT.

HAVING been myself present at the last Show at Newport, I beg to endorse all that "Y. B. A. Z." has said in the last Number of "our Journal" as regards the size of the exhibition pens, or, more properly speaking, baskets. There was scarcely room in many of them for the birds to turn round. In some the cock birds could not stand erect without injury to their combs, and the tail plumage, both of cocks and hens, was sadly disfigured. The baskets for the single cocks seemed in most cases suffi-

ciently large, but when there were three large Dorkings or Cochins together, the space given was miserably insufficient. It is a pity that so well-ordered a Show should lose exhibitors from such a cause as this, which might be prevented at no very great outlay. No doubt when the attention of the civil and attentive Secretary is directed to the subject, he, under Lord Tredegar's auspices, will remedy the evil.—A. K. C.

TRIMMING COMBS—VULTURE HOOKS IN COCHIN-CHINAS.

On the authority of one of our most able poultry judges, I find by your Journal of the 9th inst. that it is not considered unfair to trim slightly the combs of Cochins and of Spanish, and that it is a frequent practice to cut, or, what is more difficult of detection, to pull out the feathers in vulture hooks. If I understand the object of poultry breeding, and poultry shows rightly, it is to improve the breed and natural condition of birds by care and judgment in the selection of stock, and not by the use of "the razor, a sharp knife, or scissors." The only exception that can be made to this, is with Game, which, as long as we breed for fighting-points, must come under surgical operation.

In the name of common sense and common honesty let judges at once not only "turn the scale" against, but disqualify and publicly denounce, all persons practising imposition; for if we are to purchase prize birds at enormous prices for the improvement of our stock, and to avoid certain defects, it is nothing less than a swindle to have paid for those birds in which the defect has been artificially hidden, but can be reproduced in the next generation. If this matter be not stringently dealt with, purchasers at shows will become rare, and shows themselves will be simply competitions where the greatest rogue wins, and scissors tell better than breeding.—EGOMER.

SIBERIAN ICE PIGEONS.

Your report on the Manchester Show contains a mistake in the name of my Pigeons, which have won the first prize under "Any other variety." Not "Siberian Joe Pigeons," but "Siberian Ice Pigeons" is the correct name. Since, also, another journal contains the same mistake. I am led to believe that either my entry of the birds must have been misread, or a misprint must have occurred in the catalogue. The "Siberian Ice Pigeons," also called "Porcelain Pigeons," owing to their plumage having a resemblance with the white cream-colour of china, as it is used in the East, come from the extreme east of Siberia, from the peninsula of Kamtschatka, where they abound and thrive during the severest winters. Kamtschatka produces also White Geese of enormous size, with long curls and laced wings, which give them the most striking appearance. Kamtschatka fowls are black, their feathers and spangles being turned upwards in graceful curls. The cock has a collar, standing upright like the old-fashioned Stuart collar, and his comb, being 4 inches in length, 2 in height, and 1 in breadth, has a serrature of no less than forty-six tips. I received some specimens of the above, together with Siberian Ice Pigeons, and I intend to exhibit them after this spring's breeding season.—FRANCIS BROEMEL.

TURKEYS.

Your remarks as to the advance made by the various breeds of poultry within the past twelve months are, no doubt, strictly true. The prices affixed to the various pens in the late shows, and the number of pens "claimed" at high figures, are a proof not only of this, but of the rapid advance poultry-breeding is making in public estimation. Perhaps among the competing birds none have surpassed Turkeys, two pens of which were claimed at Manchester at £15 and £20 each. Whether you regard form, size, weight, or plumage, the birds of this year are a great improvement on those of last. The object of my letter is to endeavour to remove some of the restrictions and disadvantages under which this highly favoured race labour. Considering the cost of railway carriage to and from the shows (often amounting to 10s. or 15s. each way), the prizes offered are too small. The clumsy mode of weighing the birds when judging them is simply barbarous; instead of weighing them in their cages they are pulled and hauled out by rough hands, and often much injured in their plumage.

One of the primary objects of exhibitions is to give persons an opportunity of selecting suitable birds for breeding-purposes. This would be better accomplished if, instead of calling for a pen of one cock and two hens, or even of one cock and one hen, the managing Committees would call for pens of "single cocks," and of a pair of hens or poults. We do not want to breed in-and-in, but to cross. Considering the high prices now asked for good birds, it is absurd to compel a purchaser to take what he does not want, and what another would be glad of. The pens provided for Turkeys at many of the shows are much too small.—DELTA.

B. & W.'s APIARY IN 1865.

1. ACTIVE operations commenced in my apiary on the 15th of May, when I made my first swarm by driving the pure Italian queen (Mr. Woodbury's), with all the fully developed bees, out of c. Saw and caught the queen, and was pleased to find that the workers were all well-marked Italians, as last year. There were many drones, and much worker brood; no royal cells tenanted. The deserted stock was next put in place of r, which in its turn was shifted to a new apiary in my fowl-house. It is there lettered k. r Gave me 25 lbs. of honey-comb; c, 10 lbs.; and r, 3 lbs. On the 3rd of June r swarmed naturally and in great force, with its young Italian queen, and was hived (v) in the fowl-house. Strange to say, however, both r and v show great impurity of breed, there being very few yellow-jackets among them. How is this to be accounted for? Last year every queen that I raised artificially out of c became the mother of a host of more or less beautifully marked Italians. This year not a single queen out of the same stock, and evidently from the same mother, has turned out well.

2. A natural swarm issued five days later from v. It had many beautifully-marked Italian bees, but the stock out of which it issued has since lost almost all traces of Italian blood. It was put into a Tasmanian hive (st), and gave me 14½ lbs.

3. A natural swarm came off from z on the 22nd of May, equally beautiful as to colouring of bees. After hiving, it flew off to a hollow tree at some distance. It was finally recovered, as detailed by me in THE JOURNAL OF HORTICULTURE last July, and located in a new box in place of the mother stock, which I transferred to the fowl-house. The latter (s), now degenerated, swarmed again naturally on the 6th of June, but was returned, and gave me 11½ lbs. of honey. The first swarm, e, yielded 14 lbs.

4. The same day, made another artificial swarm out of c, by taking off a small super full of eggs and larvæ, and substituting it in place of b, which was also moved (now o) to the fowl-house. The swarm gradually died away, having failed to raise a queen. The bees worked hard, however, not having apparently detected their loss, and gave me 10 lbs. in supers, besides a quantity of honey in the super-stock itself, which I gave to a neighbouring hive taken in the season. o Yielded 15½ lbs.

5. June 3rd. Besides the swarm which issued from r to-day, I found a small swarm on an espalier in my garden. Many of the bees were Italians. Out of which hive it came I am ignorant, but I suspect it issued from a, which had been piping the same day. This stock (t) is doing well, but it only half filled a largish box with comb.

6. June 4th. To-day two second swarms came off from a and n. The former returned to the hive; the latter was hived in a large box lettered q, and has done pretty well, about half filling the box.

7. June 5th. Two second swarms issued from a and o. The former was put into a box lettered k. Being a very small swarm it was very light in September, weighing about 5 lbs. nett. The swarm out of o was returned to its hive. A Yielded 14 lbs., besides the two swarms, l and n; j yielded 32 lbs. of comb. r Also gave 26 lbs., and was then presented to a neighbour. o, Too, gave 21 lbs.

8. The last operation I have to record was the substitution of the young pure-bred Italian received in October from Mr. Woodbury, in place of one of my English queens. After driving the populations of a and r, and destroying their queens, the bees of both hives were united together, and located in place of a. The young queen was then gradually and successfully introduced to the united-bees, without any semblance of anger or irritation on either side, by the aid of a minute box with glass sides, kindly presented to me by Mr. Woodbury for the purpose. The plan pursued was simply to put the queen in this box with half a dozen of her own subjects, and then to

set them over a hole in the crown-board of A, with a piece of perforated zinc intervening. As soon as the scent of the lower hive had well ascended into the little box, a bee was allowed to ascend from time to time, until it was deemed safe to withdraw the zinc slide altogether. In twenty-four hours queen and all had descended into the lower hive.

The following is the present condition of my apiary lettered according to the foregoing statement :—

BEE-HOUSE.		
A. Pure Italian queen. Born 1865. Had from Mr. Woodbury. Strong in bees.	B. Defunct.	C. Pure Italian queen. Born 1862. Had from Mr. Woodbury. Very strong in bees and honey.
D. Degenerate queen. Born 1865. Strong and rich.	E. Pure Italian queen. Bred out of C in 1864. Strong and rich.	F. Degenerate queen. Born 1865. Strong and rich.
UNDER COVER.		
G. Pure Italian queen. Bred out of C in 1863. Strong.		
GARDEN.		
H. Abolished.	I. Hybrid Italians. Strong.	L. Pure Italian queen. Bred out of C in 1864. Very strong and rich. Tasmanian hive.
M. Pure Italian queen. Born 1864. Bred out of C. Very strong and rich. Tasmanian hive.	O. Degenerate queen. Born 1865. Strong.	N. Degenerate queen. Born 1865. Rather weak.
FOWL-HOUSE.		
P. Degenerate queen. Born 1865. Strong and rich.	Q. English queen. Born 1864. Strong and rich.	
K. Degenerate queen. Born 1865. Very strong and rich.		

—B. & W.

APIARIAN NOTES.

THE above heading recalls to my mind the name of a worthy gentleman and frequent contributor to the columns of this periodical, both long ago when it was known as THE COTTAGE GARDENER, and of late years since it has received the name of THE JOURNAL OF HORTICULTURE. For a great number of years Colonel Newman frequently detailed his observations and experience on bees and other scientific subjects, and was very partial to the title of "Apiarian Notes" as the heading of his papers on the former topic. I had not the honour or pleasure of personal acquaintance with Colonel Newman, but having received more than one courteous invitation from him to pay him a visit at his residence in Cheltenham, I promised to do so when opportunity might offer. For some years I was unable to find any such opportunity; but in September of the past year, having gone up to Gloucester to attend the grand Choral Festival, I proceeded to Cheltenham for the purpose of paying the long-intended visit to Colonel Newman. I had not previously written a note signifying my intention, but trusted to the chance of his being at home. On inquiry I was informed, to my very great regret, that he had died a few weeks previously. We must all feel more or less sorrow when any well-known contributor to the pages of our pleasant periodical passes away, and when we consider that the name once so familiar to our sight must henceforth cease altogether to appear. But I must proceed to the more immediate subject of this article, which is intended to be an epitome of my apiarian doings of last year.

The winter of 1864-5 was rather a trying one for bees, from the long period of confinement to which they were subjected owing to the cold weather. Fortunately the majority of my hives, as well, I believe, as of those of most of the cottagers in the neighbourhood, contained ample stores of food, the result of a first-rate honey harvest in the previous summer. Not a single stock in my apiary received, or at all stood in need of a single ounce of artificial food, either in the autumn or in the spring. I was, however, very sorry to see that the bees of several of the hives were attacked by dysentery of a very virulent character. Twenty-two stocks had been made up in the previous autumn for the winter and succeeding summer campaign, out of which number four had been lost from dysentery, death of queens, and other causes. Of the remaining eighteen hives in March and the early part of April, three were suffering from dysentery. The bees in each of these diseased hives were far from numerous; but, as I have frequently noticed under similar circumstances, the quantity of brood was very considerable, appearing to be much more than the very reduced population could by any possibility cover for the purpose of

hatching out. These affected stocks being in frame hives, I removed all the combs in each, with the exception of three or four which contained brood and eggs or sealed honey. At the same time in two of these hives I examined the combs to see which possessed the most apparently prolific queen. There seemed to be a slight difference in favour of one, but she laboured under the disadvantage of being a year older than the other, which was her own daughter, so her fate was sealed, and with sure but reluctant hand she lay crushed and lifeless. The combs which had been selected were restored to their respective hives, being inserted in the centre, leaving the sides vacant. The bees were allowed to settle quietly in their own domiciles, and were left undisturbed until the next day. Then, after gently taking off the cover, I removed two of the combs in the box which possessed its own queen to the next notch, leaving a space for one frame to be slipped down between. I took out one of the frames containing most brood from the queenless stock, with the bees peaceably clustering over the surface, and inserted it gradually in the vacant space adjoining one of the principal brood combs in the other hive. Then a second brood comb was similarly dealt with, being placed on the other side of the two central frames. The third comb having some eggs was made to take the situation of one of the four, which contained only sealed honey. The remaining space was filled up by a frame of clean worker comb, which had lain wrapped in paper during the winter. From the two stocks nine of the sixteen combs were abstracted, and were condemned to be burnt, owing to their filthy condition. The cover being replaced on the now-united colony, quietness was soon restored; hardly a death from fighting or otherwise resulted. The increased vigour with which the bees went to work augured well for the future, and, as will be seen, I had no reason to regret the step taken.

There was yet but one other affected stock, which it did not please me to retain, and I resolved to unite the bees and brood combs to its neighbour, a tolerably populous and well-supplied colony in a ten-frame hive. All the combs were removed but two, the queen destroyed, and spaces made by removing the two end frames and shifting some of the others to the side, so as to leave vacancies for the insertion of the two frames. In this instance I did not make the delay of one day, but as soon as the bees were tolerably settled completed the operation, and with success equal to the former. In this case also the union was fraught with very evident advantage, the stock quickly becoming one of the most populous in my apiary.

In performing these unions I never fear any failure in the spring; the bees appear less disposed to resent intrusion, and are altogether more peaceably disposed than at a later date. As a general rule, it is advisable to allow a day to elapse after the preparation of the hives and the destruction of the queen of one of them, before the union of combs and bees is attempted. Care must be taken to put all the combs containing larvæ or eggs together in the centre, otherwise, if separated, there may not be a sufficient number of bees to cover them, consequently, considerable loss may take place. I cannot help repeating the advice which I have more than once given when relating the history of "My Apiary" from year to year, of making it a rule always to unite two or more weak stocks together, or a weak stock to a more populous one, in the spring. I have almost invariably found hives so strengthened answer remarkably well, whereas if all the weak stocks had been retained singly they would, probably, have utterly failed in doing anything for their owner during the entire summer.

The season, which commenced with a very backward and unpropitious spring that seemed to try to the utmost the powers of the best stocks, suddenly changed to one of a very different character: a first-rate honey harvest, which set in early in May, induced extraordinary activity throughout the entire apiary, and so great was this activity, that it was difficult to believe that it was exhibited by the same hives which only a fortnight previously had presented such an appearance of scanty and unthriving populations. So suddenly and unexpectedly did this propitious change make its appearance that a mishap, which might easily have been prevented, resulted in the case of several of my best stocks. It has been my custom, previously to making up the hives for the winter, to remove from the large ten-frame boxes a frame, with comb, on each side, leaving the spaces unoccupied. This is done to prevent these combs from becoming mildewed, and to afford more space for air. The removed frames are wrapped up in paper, and put securely away until the spring, when they are restored to their places. Unfortunately, before I thought that the bees could have com-

menced comb-building, or required the accommodation of these frames, they had, in almost every instance, constructed very large combs, which were pendent from the top boards. These, though full of eggs or honey, it was necessary to remove in order to put on the adapters for supering the hives. Few of them could be made available in the same hives, consequently the bees suffered a considerable loss of time and resources. I now discovered that the super accommodation ought, in most cases, to have been supplied a week or ten days previously. I have good reason for believing that this mistake cost me some hundreds of pounds of honey. Nevertheless, such was the excellence of the honey harvest that suddenly took the place of great scarcity, that supers, when put on, were immediately taken possession of, and comb-building progressed with marvellous rapidity. In some of the hives an injurious effect had accrued from the delay in affording additional room. Honey being so abundant the bees stored it in every available cell, trenching upon the space required for the brood; consequently the queens were, to a considerable extent, restricted in their deposition of eggs. This evil was, however, in some degree remedied; after additional accommodation had been afforded the honey was removed, and was probably made available in the secretion of wax. I trust that the experience thus gained will not be thrown away upon me, and that in future all supers may be in their proper places rather before they are really required than after.

I purpose giving an outline of the general results of my apiarian operations for the season, but as this paper has already extended to a considerable length, I must defer its continuation until another week.—S. BEVAN FOX, *Exctr.*

DROPSY IN BEES.

THE "DEVONSHIRE BEE-KEEPER" is a high authority on all apiarian subjects, and I have the utmost respect for his opinions, but he will excuse me for thinking he has fallen into a mistake in characterising as dropsy the disease which he has described at page 534 of the last Volume of the Journal. To me, the complaint with which his bees were afflicted in 1861 appears to have been just dysentery in an aggravated form, or, rather, dysentery in its second and subsequent stages.

In the mild climate of Devonshire, where pollen can be gathered on Christmas-day, the period during which bees are confined to their hives is comparatively short, and, consequently, the malady with which we apiarians in the north are frequently visited seldom makes its appearance in the sunny south; but even there the winters are occasionally cold—the thermometer in January 1861 having registered as low as 7° on the surface of the ground, and 12° at a height of 4 feet above it. The seasons, too, I have no doubt, sometimes prove wet, and if continued moisture prevent bees that would otherwise be active from leaving their homes for a considerable length of time, the consequences must necessarily be pernicious. Retention of the feces beyond comfortable endurance not only induces dysentery, but, by vitiating the humours of the system, generate other evils, which manifest themselves in the watery plethora described by Mr. Woodbury. The collection of water, though not confined to them, is yet most abundant in the colon and receptacle for the feces, and is discharged in the same way as other evacuations.

It was only last winter that circumstances led me to put one of my hives into an unusual state of activity, whereby a considerable consumption of food was the result. The weather for two months afterwards proved wet, cold, and stormy, possibly forbidding the bees to leave their dwellings; of those that ventured out only a few were able to return. The result, as might have been anticipated, was disastrous, for the whole colony, amounting to 4000, being tried beyond endurance, succumbed to the cold. Unable to take additional food into their stomachs, they could no longer keep up the necessary warmth, and every bee, not excepting the queen, was swollen to a great extent. I tore up many of the most enlarged, and found them charged with dark fetid feces or a semi-transparent acid fluid. The identical disease, I imagine, is referred to by Bonner in his "Treatise on the Natural History and Management of Bees." At page 102 he says "Suffice it, therefore, to observe in general that long confinement is prejudicial to the bees, and that, as they do eat a little during their confinement, it is necessary they should get out to void their ordure. For I have seen bees in some hives that have been long confined swelled to such a size for want of such opportunities, that they seemed

larger than a queen bee; and when they did at last get liberty to go out of their hives, being unable to fly, they would fall over the edge of the stool, and creep on the ground till they died in great numbers, so that scarce one of a dozen of them ever recovered." *Vide* also page 106, 107, and 108.—R. S.

It is certainly possible that "R. S." may be right, and that the disease which, in page 534, I hypothetically denominated "dropsy" may be merely the last stage of dysentery. As my only object is to elicit the truth, and add, if possible, to our store of apiarian knowledge, I have to thank him for his contribution, and would invite others who have had experience of the diseases of bees to follow his good example. I do not claim for our Devonshire bees entire immunity from dysentery, but I do think they suffer less from it than bees kept further north. The question I am desirous of submitting to the apiarian readers of "our Journal" is, whether the disease which I have described under the name of "dropsy," which, be it remembered, attacks queens as well as workers, and which the finest summer fails even to mitigate, is identical with that which we have so long known under the name of "dysentery?"—A DEVONSHIRE BEE-KEEPER.]

DRIVING BEES.

IN THE JOURNAL OF HORTICULTURE, No. 248, I find the subject of driving bees through the bars referred to. I have driven them both ways; but if "J. A." is not accustomed to driving I would say, Invert the hive, as the fact of turning the hive seems to set the bees in motion, and they run about as if to find out what is the matter, then a few minutes' driving generally puts all right. On the other hand, by lifting off the crown-board and driving they are very slow in leaving the hive, running over the bars and down again several times, and a great many make for the usual opening of the hive. If "J. A." take off the crown-board quietly and look very closely between the combs he may catch sight of the queen, if so, let him take a strong feather and lift her into the empty hive, carefully watching that she do not go back again; then a few raps under the hive and he will find the bees leaving very fast. I once succeeded in this way in taking the bees from a glass-hive that I was most about. My experience of driving has been with wood, straw, and glass hives; but I always take advantage of a fine, hot day, and I have only attempted the operation in the autumn.—TIPPERARY BEE-KEEPER.

OUR LETTER BOX.

BUCKWHEAT (*G. R. S.*).—It is not such good food for poultry as barley, and bruised oats are better than either for them.

INTERNAL ULCERATION (*W. R. P.*).—The symptoms you particularise indicate internal ulceration. We cannot give you a better reply than the following extract from "The Poultry Keepers' Manual," which we have just published:—"ULCERATION OF LIVER OR INTESTINES.—If a fowl mopes, with its neck drawn within its shoulders, droops its wings, has pallid comb, wastes, and finally diarrhoea sets in—the probability is that it has ulcers in its liver, or intestines, or in both. There is little or no hope of saving a fowl thus diseased. Bread soaked in ale should be its chief food, but we know of no medicine that is beneficial."

BARB PIGEONS AT THE ABERDEEN SHOW (*J. R. R.*).—We have received your complaint, and have made inquiries, and cannot discern that you have any ground for complaining against the Committee. They have no right to interfere with the Judge's decisions unless fraud of some kind has been practised. The Powder cock you have received and is not your own, we advise you to keep until either the Committee or this notice brings an owner for it. Any delay in answering your letter, we are informed, was occasioned by the Secretary's absence.

EXCRESCENCE ON COCHIN COCK'S COMB (*Subscriber*).—If only a wart, and an accidental excrescence on the comb of your Cochin cock, we do not consider it a disqualification; but, if it be a sprig growing on the side of it, it is a grave disadvantage. It is by no means uncommon, and it is generally cut off when the birds are young. A light Buff hen does not match with a Cinnamon cock. Cinnamons have not been encouraged of late, nor do they seem to be understood as they were formerly. There are dark and Silver Cinnamons.

SPANISH COCK UNWELL (*Spanish Cock*).—Your bird, with copious discharge from his mouth, is suffering from severe cold. In any other breed it would end in roup, but Spanish are not subject to it. He must be purged with castor oil, a table-spoonful every other day, and fed on bread steeped in ale. He will soon be well, and you may breed from him safely.

FLOOR OF POULTRY-HOUSE (*Nemo*).—We have found road-grit the best bottom for fowls' pens. It is light and soon dries after rain. But for this, we hardly know what we should have done during the long wet weather. It is composed of scrapings and the trimmings of the sides. We pay 4d. per one-horse cartload. It is mixed up with grass, and it is wonderful to see how the fowls delight in it.

BOOK (*Eboracum*).—We cannot tell what a publication will be. The editor is not a first-rate authority.

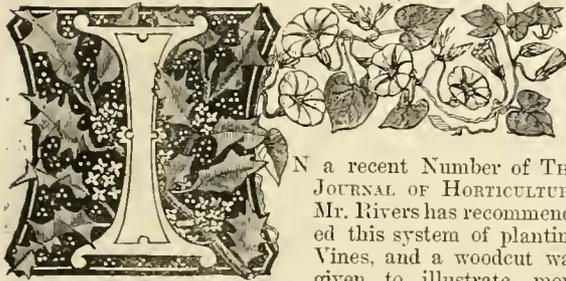
MOULDY COMBS (*W. W. W.*).—The few remaining bees having been expelled and united to another stock, the mouldy combs should be put in a dry place and kept there until wanted for use. Much of the mildew may then be removed by lightly brushing their surfaces with a soft brush, and the bees themselves may be safely trusted to deal with the remainder.

WEEKLY CALENDAR.

Day of Month	Day of Week	JAN. 30—FEB. 5, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		Days.	m. h.	m. h.	m. h.	m. h.	m. h.	m. h.				
30	TU	Jasminum ligustrifolium.	44.4	32.1	38.2	19	44	7	43	4	52	4	56	6	Daya.	m. s.	
31	W	Hilary term ends.	44.4	30.2	37.3	17	43	7	45	4	2	6	30	7	15	13	36
1	TH	Acacia ncinata.	43.5	31.1	37.3	12	41	7	47	4	12	7	59	7	16	18	33
2	F	PURIFICATION. CANDLEMAS DAY.	43.9	31.4	37.6	13	40	7	49	4	18	8	23	8	17	14	0
3	S	Acacia floribunda.	44.6	30.8	37.7	19	38	7	50	4	23	9	47	8	18	14	7
4	SUN	SEXAGESIMA SUNDAY.	44.8	32.9	38.9	18	37	7	52	4	27	10	12	9	19	14	13
5	M	Acacia grandis.	45.5	33.6	39.6	17	35	7	54	4	28	11	35	9	20	14	18

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 44.4°; and its night temperature 31.7°. The greatest heat was 57°, on the 1st, 1852; and 3rd, 1850; and the lowest cold 8°, on the 31st, 1857. The greatest fall of rain was 0.75 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

THE COIL SYSTEM OF PLANTING VINES.



IN a recent Number of THE JOURNAL OF HORTICULTURE Mr. Rivers has recommended this system of planting Vines, and a woodcut was given to illustrate more

clearly what he wished to inculcate. Knowing that there are various opinions held by experienced cultivators on the coil system of planting the Vine, I fully expected that some of your numerous correspondents would ere this have referred to the matter; but as it has been so far passed over, and the season is drawing near when Vines are generally planted in great quantities, I have ventured to address my mite in respect to this not-unimportant subject. It is a common proverb that "a bad beginning often makes a good ending;" but in gardening, as in most other undertakings, this is the exception and not the rule. I approach the subject feeling that whatever so acute a man and so experienced a fruit grower as Mr. Rivers advances is worthy of being listened to with that deference and courtesy which his long years of experience and observant eye deserve.

The coiling of Vines, as many are aware, is by no means a question of yesterday. It is a method which caused a goodly amount of discussion many years ago. Whatever can be said in its favour or against it, it is easy to suppose that to the inexperienced eye it presents not an unfavourable aspect, but one which is striking and specious; and if incorrect in principle—opposed to the laws and functions of the Vine—it is, therefore, all the more dangerous. I may at once avow that I consider it incorrect in theory, and have found it not only useless in practice, but to some considerable extent prejudicial to the well-doing of Vines, especially for some years after they are so planted. However, I would not even on that account pronounce indiscriminate censure on Mr. Rivers's woodcut. At the same time it must be admitted that we are very apt to follow a leader without even calling in question the correctness or reasonableness of a path in which he leads us as the nearest route to perfection or success.

In the first place, I object to coil planting because I think it opposed to the unerring laws of Nature to bury that portion of a plant or tree in the earth which was designed to be above ground. It must be considered very unnatural to bury the stem of a plant in the ground, and the evil consequences of doing so have, doubtless, been clearly illustrated in the experience or observation of many. This is too often the case where earth has been carelessly heaped up against the stems of trees to the depth of only a very few feet. I have seen numbers of trees absolutely killed in this way. Plants whose nature it is to run along

the ground, or up the trunks of trees, emitting roots as they proceed, do not have their stems buried under the ground. I apprehend that the explanation of this fatal result to trees is, that as the descending sap upon which the emission of roots so greatly depends circulates in the liber, its channel is destroyed, and, consequently, its downward course to the roots interrupted. The result is death to the tree, except in the case of such subjects as can form a new set of roots near the surface of the soil. Some plants can overcome these difficulties with less damage than others. However this position may be regarded, correct or incorrect in theory, the facts referred to remain the same.

In my experience of Vine planting I have found that in a certain degree, the results of which I have been speaking occur to the very letter whenever I have planted on the coil or laying system, and I have, therefore, abandoned it entirely. In 1859 I planted a vinery in the middle of June with Vines struck from eyes that same spring. A regular set of Vines was planted in an outside border, introducing them through holes in the front wall. Having plenty of Vines, I planted a few inside on the back wall of the house. The latter made two seasons' growth, and were fine strong canes in the autumn of 1860. The house is a narrow one, not more than 9 feet wide, and as I could derive little benefit from the Vines on the back wall I resolved, instead of cutting them out or training them down the roof, to try how the laying system would affect them. They were layed about 8 inches deep in the inside border across to the front, and shortened back to about 2½ feet above the surface of the soil. That season they had a regular struggle to reach the top of the house, and the growths they made were not half so strong as those made on the back wall in the first year of planting. At pruning time they were cut down again, and in 1862 they gave but a sorry account of themselves, though better than in the first season after being layed in the border. I had occasion to have to turn over the border in the winter of 1862, and found that these Vines had not made a root anywhere along their stems, except close to their necks—i. e., near the surface of the soil; at that point they had thickened and emitted a bunch of roots in a whorl all round the stem. From this instance I conclude that the action of the original root had been interfered with, and that until another set of roots could be produced and was in vigorous action, the growth of the Vines was most seriously interfered with. They were carefully layed, with no right-angle bends nor ruptures.

I will now give another instance somewhat differing from the foregoing. In 1860 I planted some young Hamburgh Vines in a new border. They were splendid young Vines, grown from eyes in the previous season, and planted in March. The vinery is arched in front, and has a 12-foot border inside. In planting some of these I layed them, putting their roots about 4 feet from the front wall into the inside border, thinking, perhaps, that this would induce them to root freely into the inside border, knowing how prone all Vine roots are to proceed through the arches into the outside border. Well, what next? These Vines stood

still for a long time after they had grown about 18 inches, and exhausted, as I suppose, the stored-up sap. At length, after a considerable amount of patience had been exercised, they started into growth, and did pretty well. Two years afterwards on examining the inside border I found the original roots of these Vines absolutely rotten. The layed part of their stems had not thickened in the least, rather the reverse, and on following up these stems no roots were found till the place was reached where the Vine entered the border in front. The stems and old roots were cut away. I have planted a good many Vines in a variety of ways during some years, and could see nothing but mischief arising from laying the stems in the soil.

I will refer to another instance differing from the foregoing. In the course of renewing the Vines in a couple of vinerias a few years ago, after planting there were some fine, strong, well-ripened Hamburghs for which I had no particular use, and so I determined to try the coiling system with them. In the new border inside the two vinerias I plunged a row of these Vines, pots and all, in the soil. They were plunged so that the stems were buried in the border in a perpendicular position to the depth of a foot or 15 inches above the surface of the pot. Now these were splendid Vines, with buds like Nuts, and the object was to dwarf them a little, and prepare them for table. With this view a small pot was passed over each, so that it rested on the surface of the soil, and the Vines pushed up through the pots to the length of about 3 feet. These Vines broke strongly, showed magnificent bunches for pot Vines, but soon came to a standstill, and never did any good. When they were removed it was found that the original roots in the pots had never made a move, and that an effort had been made to overcome their unnatural position by emitting roots near the surface. I had often forced Vines in pots before, and have since, but never without success, except when a portion of the stem was laid.

I could point to still another case adverse to laying Vines; Muscats which had been planted two years in one house were removed to another, and in planting them about 3 feet of their stems was layed. In the first year they made very little growth, and during the second their growth was not good, and the bunches all wired. The third year they fruited, but not satisfactorily. Improvement took place yearly, but they cannot now be said to have succeeded so well as they ought to have done. If examined now there is a thickened lump on the stems near the surface of the soil, and below that a mass of roots. The stems below or beyond that were layed in the soil, and have not thickened in the least since the day they were planted, and have only a small insignificant root here and there. Now I am perfectly well convinced that all these Vines would have done better had they not been layed, because all their cotemporaries not layed beat them completely. I have tried a good many ways of planting Vines. In one instance, for the satisfaction of my assistants, I planted a year-old Vine from a pot without in the least breaking-up the ball or uncoiling the roots. It was a strong Vine in an eight-inch pot. All the others in the same house, thirty-two in number, made magnificent growths; their roots were all uncoiled and washed. The Vine planted with the ball entire did not do nearly so well the first year, but it grew well in a few years, and made a good Vine. I prefer shaking out the roots entirely, and not burying a morsel of the stem.

Perhaps the experience of Mr. Rivers is quite opposite to mine as regards this coiling or laying system; but your readers will not be the worse of knowing that there are two sides to this as to every other question. What the consequences might be if the stem of a Vine were merely pegged down to the surface of the soil and not covered with mould I do not know, but I mean, if spared, to try the experiment. I rather think, however, that it is not the order of Nature with many plants to have many points for forming roots with advantage. The Vine, however, forms roots more freely than many plants or trees. The liber of the Vine is thin, and like many more subjects, it casts its coat yearly, and so exposes the channel for the downward sap more to the influence of the soil in which it is buried.—D. THOMSON.

MUSA VITTATA.

For the information of Mr. Sayers and "J. H." I may state that the above-named plant fruited for the first time in Europe about three years since in the Royal Botanic Gardens, Kew. Two years ago a smaller plant also fruited in the same gardens, but upon neither occasion was the produce eatable. That it

will become so under the management suggested by "J. H." remains to be proven; but I cannot endorse the statement made by him to the effect that out of every hundred Musas fruited in this country four only are good-flavoured.

By the way, is it not time "J. H." removed the veil in which he is shrouded? The statements we have read from him lately have made all the gardeners with whom I am acquainted exclaim, "Can these things be?"—Wm. HUGH GOWER, *Kew*.

[Our young correspondent and his friends need not be incredulous of the statements made by "J. H." We know him to be a gentleman whose word may be depended upon. He has had large experience in the culture of tropical fruits, is now engaged in erecting houses for their extensive cultivation, and is well-known to some of our most distinguished Orchid cultivators. It pleases him not to proclaim his name and residence, and wisely for his own comfort does he thus avoid publicity, for as it is, we have had to forward to him many more letters than are desirable for an invalid to have to answer.—EDS.]

SOWING AND AFTER-MANAGEMENT

OF PELARGONIUM, VERBENA, AND OTHER CHOICE SEEDS.

(Continued from page 498.)

ENCOURAGE the young plants to grow as fast as they can, giving them at the same time all the air possible to cause them to become stocky, as well as to prevent their damping off. As soon as they have well filled their pots with roots and have made from seven to ten good leaves, they may be shifted into 48-sized pots. The soil for this potting should be stronger and not sifted so fine as recommended before; if it is rubbed through a riddle about three-quarters of an inch in the mesh it will be quite fine enough for them. Two-thirds of nice fibry loam, and one of leaf soil and sand should be used, and as much of it rubbed through the riddle as possible. The same care must be taken in crocking the pots as before, only so many crocks will not be required. I use about four pieces for a four-inch pot; placing the largest piece over the hole in the bottom of the pot, the others are then put in around it, and some of the clean fibre that could not be rubbed through the sieve is then placed on the crocks, just enough to prevent the soil from trickling down amongst the drainage. The stem of the plant should not be buried any deeper at this potting than it was before. The pots should be filled up lightly with the soil till about two-thirds full, then turn the plant carefully out of its pot, and after disentangling the roots from the drainage draw the soil into a little hillock in the centre of the pot. The plant should then be placed on the centre of the hillock, or cone, and the roots nicely spread out over its sides, a handful of the finest soil from the heap on the bench being then lightly sprinkled over them. After this has been done the pot may be filled up all round, then take it up with both hands, keeping both thumbs on the ball of the plant, one on each side of the stem, with the fingers clasping the sides of the pot, then tap the pot gently on the bench till the ball of the plant and the soil surrounding it have sunk down to about half an inch below the rim. It is of great importance to keep the thumb of each hand firmly fixed on the ball of the plant. This keeps it steady, and prevents its jumping about in the loose soil. If the operation of potting is carefully performed there need not be a single root broken, they will all be in their proper positions, and will at once begin working in the new soil.

None but those who have minutely watched the growth of a plant that has been potted with every care, and one that has been carelessly potted, would credit how great is the difference in their growth afterwards. This, then, is a part of the system of plant-growing that should be performed with great care, although some will say that where there are so many thousands of young plants to be potted it is a waste of time; but this is a great mistake, for if the operator will only take an interest in what he is doing he will perform his work well and quite as expeditiously as he who sticks his plants into their pots in any way, and fancies that he is very clever because he can pot a certain number of plants in an hour or a day. His hands may have been very busy, and at the end of an hour the bench may be nearly filled up with plants, but on running the eye over them one sees many of them very much out of the perpendicular, some are far from being in the centre of the pot, whilst in the case of others the soil has been pressed into hard uneven lumps above the level of the pots; and if you will take

the trouble to turn some of the plants out you will find vacant spaces in different places around the sides of the ball, and the roots broken and squeezed into every conceivable position. All this happens simply because the operator does not consider what he is doing, and his thoughts are concentrated on some other subject. It always pains me beyond measure to see some men take a plant in hand for the purpose of repotting it. For this reason I could on no account allow any one to handle my little pets. I have seen men potting plants in the fashion described above, and I have seen others in the same shed using every care in performing a similar operation, and I could always tell the difference in the growth of the plants afterwards, and could easily point out the plant potted by No. 1, or No. 2.

I have been particular in illustrating the different effects which the two systems of potting have on the growth of plants, for the purpose of more thoroughly impressing it on the minds of the many young gardeners, who may, if they will, benefit themselves greatly by applying these remarks to their practice.

The soil should be in a similar state as to moisture to that recommended for the last potting. It should also be about the same temperature as that in which the plants are growing. There will then be no necessity for watering the plants for several days after they have been newly potted. They should still be kept in a similar temperature to that recommended before, and for a few days after repotting them the house should be kept rather close. When it is found necessary to water them they should be well soaked; to do this effectually it will be necessary to go over them twice. After they have well established themselves in their new pots they should receive liberal treatment. The temperature may be increased as well as the supply of water, giving all the air possible on every favourable occasion. By this time the sun will begin to have greater power, the days will be longer, and the progress of the plants will be much greater in consequence.

We will now suppose ourselves to have kept our plants from harm, and with tender nursing and judicious care to have brought them through the dull months of December, January, February, and March. They will by this time have thoroughly filled their pots with roots, and will have matured from ten to twenty-five fully developed leaves. They should now be placed on a shelf, where they will have all the air that can possibly be given them, and the full benefit of the sun whenever it shines upon them. They must also be watered very sparingly from the beginning of April to the end of May, when they should be placed in the open air, and fully exposed to all weathers. During the two months they are undergoing the ripening process on the shelves, they should be frequently examined to see that they are not suffering any injury from want of water; and if any of them are growing too luxuriantly, I find it a good plan to push a sharp knife through the stem a little above the pot, making a slit upwards an inch or two in length; I then push in a small piece of charcoal or dry wood to keep the slit open. This checks their vigorous growth, and causes them to flower sooner.

If the directions given above have been properly attended to, by the middle or end of June many of the plants will be in bloom. They should then be supplied twice or thrice a-week with manure water given in a very clear state. It will soon be seen after a few weeks of this treatment how many of them are worth perpetuating. The best should be shaken out and potted into No. 16-sized pots, grown on under glass, and subjected to high cultivation. This will soon prove whether they are likely to be improvements on existing varieties by their freedom or shyness in flowering, the shape and colour of the flower, size of truss, &c. The most promising varieties are then propagated as rapidly as possible. Any that do not appear to be up to the required standard are thrown away. The second best are planted out when there is plenty of time, between the months of July and October, to prove them. Three or four cuttings of the best kinds are also struck as soon as possible, and planted out in trial-beds to prove their adaptability for bedding-purposes. Other cuttings of the same kinds are struck and grown on under glass to prove their capabilities in that way. Early in September most of the plants will have bloomed sufficiently to prove what they are likely to be either for pot culture or bedding-purposes. Then the stud-book is brought into requisition. This is often a very hard task, for there are sometimes a score or more of very promising flowers that one would like to keep till another year. It is, therefore, necessary to go over them again and again, to compare all the different features of each plant as to habit, neatness of foliage, freeness of flowering, shape of flower, size of truss, &c. When

satisfied as to the superiority of one variety over the others, a full description of it is written in the stud-book, and the work of propagating the favourite varieties goes on as rapidly as possible.

By carrying out the different operations as described in this and my previous article I am enabled to cross the flower, ripen the seed, raise the young plants, flower and prove them, all within the twelve months.

I should have stated that the varieties of Pelargoniums belonging to the Mrs. Pollock section require, during the various stages of their growth, to be treated rather differently from the more common bedding kinds. For instance, they will not stand the severe drying ordeal that the other varieties have to undergo during the months of April and May; they are also kept when in their young and delicate state at the coolest and driest end of the house, and about the middle of June are planted out on a piece of very rich ground.—J. WILLS.

(To be continued.)

WINTERING PLANTS FOR BEDDING-OUT.

THE preservation of flower-garden plants during winter is so important to every gardener, that it has been the subject of much reflection how best to accomplish it. It is of the utmost importance that the plants intended to be preserved should be secured before frost set in, and with this object in view they should be taken up from the beds with care, carried to the potting-shed, and, after having been carefully deprived of all their leaves, except those at the points of the branches, potted in soil well aired, and mixed with leaf mould rather dry than otherwise. I never use crocks for this potting, as I think that unnecessary. Water is never given for several days, unless the weather be very dry and warm; it does much harm to plants prepared for wintering. In fair weather give all the air possible by taking off the sashes, otherwise have them tilted at back, thus avoiding stagnant air and mouldiness, the results of bad ventilation. I have preserved plants from the end of October to March, without watering, in pits heated with hot-water pipes. People too often water plants when so doing is quite unnecessary; thus I have observed young gardeners after having potted newly-struck cuttings soaking them with water, and so ensuring the destruction of their plants. It would be much better to pot firmly, and avoid the water. As the potting of the store plants is at hand, I advise the young gardener to use water sparingly and pot firmly, which is much better practice than putting in loosely with the intention of making firm with water, as many do. Geraniums and other bedding plants may be kept in cold frames or pits, but water must be altogether withheld, and the foliage of Geraniums should be entirely removed. Calceolarias thus keep nicely. Cleanliness must be sedulously attended to in every department of plant-growing.—JAMES REID.

GAS-LIGHTED CONSERVATORY.

I SEE in your Journal of the 16th inst. a case of lighting a conservatory with gas. I have the management of a conservatory and stove, about 64 feet long, 23 feet wide, and 19 feet high, lighted by twenty-one gas-burners. I have had it lighted up at different times during the last two winters, and on the 20th inst. for four hours and a half, without any bad effects.

I generally water all the plants the first thing in the morning; give all the air I can to have the house properly dried before night; and before lighting I open the top ventilators, and leave them a little open while the gas is burning. Before putting it out I open them all at the top as wide as the weather will allow, and leave them open until the next morning.

I have not lost either a leaf or a flower from the use of the gas that I am aware of. There is a fine plant in a tub of *Sparmannia africana*, 9½ feet high by 5½ feet through, in splendid foliage and fine bloom, in the middle of the house. There are Azaleas, Camellias, Epacrises, Geraniums, Fuchsias, Primulas, and a general collection of plants, with some splendid *Acacias* upwards of 6 feet high.

I do not think gas will do any harm to the plants if the house is dry, and there is sufficient air on at the time.—A GARDENER.

YOUNG APPLES IN JANUARY.—I have forwarded you a sample of young Apples, gathered on the 16th instant. The tree was bearing its fruit last September, and these Apples are

the second crop. Have you seen any as large as these before this season? and what sort are they? They were growing in an orchard.

[The Apples are as large as bantams' eggs. They may be Joannetings, but they are too immature for identification.]

ROSES.

"Locu Ness," at page 22, speaks in the highest terms of "King's Aere." I do not think his experience of this flower will be borne out by many amateurs. I have only one plant of it, but it had several blooms on it last summer, and I saw a stand of blooms (I think there were two dozen or so), at the Crystal Palace Rose Show, and out of all these there was but one fit to put into a stand of first-class flowers. Moreover, I met at the same Rose Show a gentleman who is a very successful exhibitor, though he does not exhibit largely, and he told me that he considered this flower not worth propagating, and, in fact, although I had plenty of stocks I did not, after seeing the stand I have mentioned, think it worth while to add to my stock of plants by putting in any buds. I shall be very glad to find that I have been mistaken as to this Rose; but as to its ever superseding Jules Margottin, even if it were the same shade of colour, which it is not—why, when that happens Senateur Vaisse must give way to Général Jacqueminot.

It is interesting to observe how differently some Roses do in different situations. "Locu Ness," I gather from his letter, finds Gloire de Santenay open well, and Duc de Rohan and Maurice Bernardin indifferently. Now, with me, the last always opens perfectly, whilst of the other two the Duc never opens well, and Gloire de Santenay is more often than not like a bullet.

General Washington, too, never yet opened well with me, and I had more than a dozen plants of it.

I think if "Locu Ness" is patient with Prince Camille de Rohan, and wait till his plants become strong, he will consider that flower A1. Its colour is superb, and the petals are wonderful in velvety appearance and substance. It might be a little fuller and larger; but such as it is, it is a splendid flower.—P.

ROYAL HORTICULTURAL SOCIETY.

JANUARY 23RD.

FLORAL COMMITTEE.—The first meeting in 1866 was held this day at South Kensington, and judging from the excellent collections of plants sent, we may safely conclude that the Tuesday meetings will continue to be well supported. There were not many plants sent for examination, and at this very early period of the year few could be expected. Mr. Bull sent three plants: of *Pandanus ornatus*, an ornamental-foliaged plant with bright, glossy, dark green leaves edged with white spines. This will prove a very handsome decorative plant—first-class certificate; *Selaginella Mertensii variegata*, which was awarded a second-class certificate in 1865; *Herrania palmata*, a plant resembling a *Palm*, with handsome foliage—first-class certificate; and *Agave americana longifolia*. Mr. Bull also exhibited a large collection of stove and greenhouse plants, some of them of considerable merit in point of cultivation, and many of them rare; the Lindley medal, at the recommendation of the Committee, was awarded to Mr. Bull by the Council. It should be clearly understood that this medal is not intended as a prize for large collections of miscellaneous plants, but for specimens showing meritorious cultivation. See regulation No. 10, for the guidance of the Committees. "Medals will be awarded by the Council for subjects recommended by the Committee as evincing meritorious cultivation, but which are not exhibited as novelties." Mr. Earley, Digswell, sent a hybrid *Begonia* with deeply serrated foliage and pale pink flowers; and Messrs. A. Henderson & Co., Pine-Apple Place, a fine specimen of *Lastrea Sieboldii variegata*, a decided acquisition among the variegated forms of *Ferns* in cultivation; a first-class certificate was awarded it. Mr. Veitch exhibited a magnificent collection of plants, forming quite a bank of splendid flowers. Among them were several *Orchids*—to one, a fine specimen of *Angreecum eburneum*, was awarded a special certificate. A similar award was made for the collection. Mr. Willcock, gardener to Dr. Pattison, sent a fine specimen of *Angreecum sesquipedale*, and *Barkeria Skinneri*, with deep rosy spikes of flowers. Mr. Williams, Holloway, sent *Calanthe species nova*, but which was decided to be a form of *C. vestita*; also, *Angreecum eburneum*, and *Angreecum superbum viridum*, both of which received special certificates. Mr. Reynolds, gardener to Dr. Sankey, sent a specimen of *Selaginella denticulata*, the points of the shoots being nearly white. It is doubtful whether this variegated form will prove constant. Several specimens were brought from the Society's gardens, among them *Odontoglossum hystrix*, and a very fine specimen of *Sophranitis grandiflora*, which was awarded a special certifi-

cate; also, a fine plant of the well-known *Pycnostachys urticifolia* with bright dark blue tufts of flowers.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. But few subjects were brought forward on this occasion. A first-class certificate was awarded to Mr. R. H. Betteridge, of Milton Hill, Stevenston, for a seedling Pear, which was of excellent flavour. From Mr. Page, Southampton, came fruit of *Pyrus nepalensis*, resembling a Pear in appearance, but having a slight quince flavour, and though too hard for eating, possibly useful for preserving. The Chairman contributed some Uvedale's St. Germain Pears, grown in an orchard-house, and which, though not so large as those sometimes produced out of doors, were much more highly coloured. Mr. Tillery, gardener to the Duke of Portland, Welbeck, sent Trebbiano, Black St. Peter's, Muscat of Alexandria, and Welbeck Black Tripoli Grapes, in excellent condition. The last-named has been considered by some a distinct variety, but Dr. Hogg, in his "Fruit Manual," states it to be identical with the Frankenthal. From Mr. Culverwell, gardener to Mark Milbanke, Esq., Thorpe Perrow, near Bedale, came a bunch of Ferral Grape, unnamed; and from Mr. Sherratt, gardener to J. Bateman, Esq., Knyversley, a fine cluster of the fruit of *Masa Cavendishii*. A few Pears from the Society's Garden at Chiswick were also shown.

SCIENTIFIC MEETING.—Lord H. Gordon Lennox, M.P., in the chair. The Rev. Joshua Dix having reported the awards of the Floral Committee to the meeting, Mr. Wilson, in performing a similar task with regard to the Fruit Committee, mentioned an electrical apparatus which he had seen at Professor Whentstone's, which being set at any two temperatures—say 40 and 70°, would ring a bell at the gardener's bedside, if the temperature of any house in which the apparatus was placed fell below the one limit or exceeded the other.

The Rev. M. J. Berkeley in reviewing the subjects exhibited, remarked that a new *Calanthe* exhibited by Mr. Williams, only differed from *Calanthe vestita* in the centre of the flower being marked with rose colour instead of yellow as in that species, and to which he had no doubt it belonged. An *Odontoglossum* sent home by Mr. Weir, and shown at the last meeting, was stated to be *O. hystrix*. Mr. Berkeley then directed attention to one of the *Aroidæ* in Mr. Bull's collection, *Xanthosoma appendiculata*, in which there is a curious process formed by the upper portion of the midrib being reverted, and forming as it were a second leaf at the back of the first, but facing in a contrary direction, and he observed that he had seen a similar peculiarity of structure in a Fig which had been sent home from India. Of *Draecena fragrans*, a plant of which came from the Society's garden, it was remarked that though not very attractive it was very fragrant at night, having the odour of new hay; and of *Ficus Cooperi*, that it was a native either of tropical Australia or the warmer parts of Natal. *Palicourea discolor*, belonging to the natural order of *Cinchonaceæ*, and *Pycnostachys urticifolia*, closely allied to the well-known *Coleus*, were next adverted to, and the latter, though of a rather straggling habit, was stated to be worthy of some consideration on account of its fine blue heads of flowers. *Herrania palmata*, exhibited by Mr. Bull, and belonging to the natural order of *Byttneriaceæ*, was closely allied to the *Theobroma*, from the seeds of which chocolate is made; and in connection with *Pyrus nepalensis*, Mr. Berkeley remarked that notwithstanding the distinctions drawn between *Pyrus* and *Cydonia*, those botanists are right who unite the two. He next directed attention to one of the fine fruiting *Acanthas* from Mr. Bull, remarking that such a plant was worth from fifteen to twenty guineas, though a similar one not in fruit might be purchased for about half-a-crown, and that a small example of the male plant was now worth two guineas. The pretty variegated *Selaginella Mertensii variegata* was also alluded to in terms of commendation.

The Chairman said his next duty was to introduce Mr. Hungerford Pollen to the meeting, who would state his views on the arrangement of floral displays, a subject which had excited a considerable amount of discussion of late.

Mr. H. Pollen began by observing, that the best mode of arranging plants and fruit at exhibitions was a subject of considerable interest, and he quoted the views advanced by Professor Reichenbach and Dr. Masters on the subject. Here the materials of such exhibitions were mostly arranged together, but on the Continent they were grouped so as to produce the best pictorial effect, though this system might not always be so well for displaying the properties of the plants; yet he thought it perfectly possible to unite both objects. Professor Reichenbach had spoken of the great difficulties of finding and comparing plants arranged on the continental system, but without going so far as that, each exhibitor's productions might be so placed as to produce an artistic effect. In order to see how plants and flowers look best we ought to go to Nature, and what struck one most there was the enormous amount of light which was present. The consideration which followed was, how plants were situated in regard to that element in arcades, buildings, and tents; in the first two the light was almost invariably from one side, but in a tent it was diffused all round, and that in the most agreeable manner; hence, he considered that the tent carried the day for the exhibition of plants. In art, as in the case of statues and paintings, it was an object to concentrate all the light on a certain point, and the rest of the object was, therefore, left more or less in the shade; but to do justice to flowers they should have a very large amount of light. In buildings, however, as already stated, this was not the case, for the light coming from one side the greater part of

the plant was left in the dark, and many of its beauties were consequently hidden. If he were asked how best to secure the greatest amount of light, he would answer, in a tent. As an example of the fine effect produced by the intermixture of flowers and foliage in tents, he cited the Rhododendron Show held last year in the tent erected by the late Capt. Fowke, R.E., a tent of which the like had never been constructed in this or any other country. There, instead of all the flowers being put together and all the foliage, the two were mixed, and to the best advantage. When a large number of flowers were collected together without a proper amount of foliage, the eye could not see their separate forms to the best advantage, and could not take in the overpowering amount of colour so produced. Flowers, therefore, should be mixed with foliage; and in the case of plants growing naturally there was grass and a beautiful irregularity of surface. The chief points to be kept in view in arranging plants, said Mr. Pollen, are—1st, light; 2nd, background; 3rd, surface. With regard to the third point, some plants are better when below the eye, others when above it, but for the purposes of a judge the nearer the eye they are brought the better. Mr. Pollen then stated, that he had seen on the Continent, but never in England, long or square boxes of grass made available for setting plants on, and he recommended exhibitors to have such boxes prepared beforehand, by turfing or sowing, so as to be ready for use in any way that might be necessary when the plants came to be set up. White paper might also be usefully employed more frequently than it is in exhibitions. In the flower markets it was always used with the finest bouquets, and all the finest prints were mounted on it. Mr. Pollen then described an ornament which he had seen when in the Apennines, where, on entering a monastery and in vain looking for any one for a long while, he came on a monk tracing out on the pavement a design in chalk, which was afterwards filled up with Box, and Poppies, and other wild flowers. This, Mr. Pollen said, was the most beautiful thing in its way that he had ever seen. Other means of decoration not made use of so often as they might be, were gravels, sands, and other coloured materials—such as might be seen in Mr. Nesfield's patterns, and which were especially useful when flowers could not be had. By such means most pleasing results might be obtained. One other point to which he would advert, was the best mode of showing fruit; and he could not help thinking that, as in the case of flowers, the best way of doing so was on the boxes of grass as if the fruit had fallen on them, or on very white china. Moss was sometimes used, but unless very green it had not a good effect. Mr. Pollen said in conclusion, that his remarks were merely made with the view of provoking discussion, and drawing forth some hints on the best mode of showing flowers and fruit. If all the world were judges the present mode of doing so was the best, but a vast number came to exhibitions to learn how to improve their gardens, and on that account it was necessary to introduce as much art as possible into the arrangement of the subjects shown.

The Chairman, after thanking Mr. Pollen for his remarks, said he should be glad to hear any gentleman inclined to offer observations on the subject.

The Rev. Dr. Rock fully coincided with the observations made by M. Pollen, and remarked in connection with what Mr. Pollen had seen in the Apennines, that he had himself seen a road near Rome covered with flowers; and as an illustration of a somewhat similar style of decoration, mentioned the festival among the hills of Derbyshire, known as the well-dressing of Tissington. Such customs had a civilising tendency in our villages, by implanting a love of flowers and bringing the villagers in contact with the neighbouring gentry.

Mr. W. Wilson Saunders said the question was, What are exhibitions instituted for? If they were only intended to please the eye then the artistic mode of arrangement would be very well; but there was another object to be kept in view—that the subjects exhibited should be so placed that the judges could decide on their comparative merits. He thought that the present high state of horticulture in this country was in some degree to be attributed to the fact, that our exhibitions were exhibitions of merit and not of art. He fully concurred with Professor Reichenbach as to the difficulties which judges have to undergo when the subjects of exhibition are scattered here and there for the sake of artistic arrangement, and whilst he hoped that horticultural exhibitions would be made attractive to the eye, the main object should be to render them as instructive as possible.

JANUARY 27TH.

At the Exhibition held this day, there was a pretty display of greenhouse plants exhibited by William Bartlett, Esq., Shaftesbury Terrace, Hammersmith, which contained two fine large specimens of *Adiantum cuneatum*, a nice specimen of *Adiantum capillus-Veneris*, and various other Ferns and fine-foliaged plants, interspersed with well-grown Hyacinths, Tulips, and Polyanthus Narcissus in bloom. This received a first prize.

In the Fruit department, Mr. William Earley, gardener to Felix Pryor, Esq., of Welwyn, exhibited a collection of Apples which had the merit of being well grown and well kept. They consisted of some of the finest dessert kinds, such as Cox's Orange Pippin, Ribston Pippin, Golden Pippin, Cocker Pippin, &c., consisting in all of eighteen dishes; and for this he was awarded a first prize. He also exhibited a dish of well-preserved Walnuts, which were quite fresh; some excellent Salsafy, which received a first-class certificate; and a dish of Shallots, which also received a first-class certificate.

It appears to us that these Saturday meetings open-up a field which has never yet been occupied, and offer advantages which a certain class of exhibitors would be too glad to avail themselves of, provided they were aware of the opportunities they offer. At these meetings amateurs, and those who have small space at command for indulging their horticultural tastes, can meet on equal terms and contest their skill one with the other without the fear of being overwhelmed by the greater and more professional exhibitors. We have often felt that the amateur whose circumstances or convenience prevents him from taking part in the great shows, has no opportunity afforded him for exhibiting his skill in the art in which he takes so much delight, and which he cultivates so well; but from what we saw of Mr. Bartlett's exhibition on Saturday, we look forward with pleasure to the day when Mr. Bartlett will have to compete as well as exhibit. There are many in town and in the suburbs who have no other convenience than a small conservatory, and many who, failing such a structure, improvise any sort of arrangement so that they may indulge their favourite pursuit, who could on these Saturday Shows bring out their two, or three, or half a dozen well-grown plants, and exhibit their skill while they contest the honour with their neighbours.

THE IRESINE HERBSTII.

Your correspondent, Mr. Hill, has not said one word too much in praise of this useful plant. It has exceeded my expectations both for bedding and as a decorative plant in the autumn and winter months in the houses and at the mansion.

Where groups of plants in the ribbon style are wanted in corridors and saloons, the *Iresine* is indispensable, and it makes an excellent second row if Golden Chain Geranium is used for the border. Both the former and the latter are more suitable for such a purpose if grown in propagating-pans about 12 inches by 8, and 4 or 5 inches deep, as the foliage will nearly cover the sides of the pans. *Chrysanthemums*, *Dracenas*, *Poinsettias*, *Cyperus alternifolius variegatus*, and Ferns, are the most effective for the centres or backgrounds of such groups. A very small and neatly-arranged wreath of evergreens is necessary to lay down just under the leaves of the Geraniums; this will hide any part of the pans which may be visible, and also enhance the gold colour of the leaves.

There is another purpose for which the *Iresine* may be used with very good effect—viz., for decorating the dessert. I have not seen it recommended for that purpose, and wonder Mr. Robson did not mention it in his excellent article lately on table decoration, as few plants worthy of notice escape his mind. Small bushy plants, or say several cuttings, placed in round flat tins to be grown on and placed in flat vases, are very ornamental when placed amongst the dessert. Ferns and many other plants give us plenty of green, but high-coloured leaves are necessary to finish the picture.

A long shelfful of *Iresine* in a stove in the winter months, is one of the most attractive ornaments in that structure. In the greenhouse it sheds its leaves, and a cold pit is death to it. Few plants are more easy to propagate and cultivate, and I feel assured that it will be one of the most useful ornamental-foliaged plants we shall have for some years.—JOHN PERKINS, Suffolk, January 17th.

NOTES ON GRAPES.

Mr. Hill, of Keele Hall, has sent us a collection of Grapes, the following notes on which will doubtless prove interesting to many of our readers, who will appreciate information coming from a source so reliable, and from one who has devoted so much attention to the study and cultivation of the Vine. Mr. Hill has for many years been making experiments, not only on the merits of different sorts of Grapes, with the view of ascertaining to what extent they are worthy of cultivation in our vinerias; but he has devoted a great deal of attention to what is a subject of even greater interest—the influence of various stocks on these varieties. We have in the following notes the result of Mr. Hill's experiments during the past season:—

No. 1.—*Lady Downe's grafted on the Black Eagle.* The Black Eagle is a weakly-growing Vine, having no merit of its own to recommend it, and yet the bunch of Lady Downe's sent by Mr. Hill is of full size, and of a fine deep black colour; but the berries are not so large as in the following. The flavour is excellent, and there is the slightest trace of Muscat in it.

No. 2.—*Lady Downe's grafted on Gromier du Cantal.* The stock on which this was produced is a strong grower, and the size of its own bunches is generally large. It seems to have communicated some of its vigour to the scion, for the bunch of

Lady Downe's produced by it is of very large size, and the berries are unusually so, jet black, and highly flavoured. Altogether superior to the same variety on its own roots.

No. 3.—*Lady Downe's grafted on the Black Hamburgh.* The berries are large and well coloured, and the flavour excellent.

No. 4.—*Lady Downe's grown on its own roots.* Although the bunch and berries are not so large in this case as in that where it is grown on Gromier du Cantal and Black Hamburgh, the flavour seems richer and more sugary.

No. 5.—*Lady Downe's grafted on Chasselas Napoleon.* The bunches and berries are small, and very inferior in every respect to all the preceding.

No. 6.—*West's St. Peter's grafted on Barbarossa* (Gros Guillaume). The flavour here is more than ordinarily rich and sweet, and there seems to be more sugar than is usually present. The berries, however, are not so large as in the following:—

No. 7.—*West's St. Peter's grafted on Muscat of Alexandria.* The stock has evidently exercised an influence here for the better, the berries being more than ordinarily large, and the flavour rich. We almost fancy we can detect a slight indication of the Muscat flavour occasionally.

No. 8.—*Black Alicante* (Meredith's). This is the true Alicante of Speckhly, and a very different Grape from that which appeared within the last few years as Kempsey Alicante, which proves to be the Morocco. The flavour is very delicious, and it is one of the best late Grapes.

No. 9.—*Cox's Black Alicante.* This is the Grape that gave rise to the name of Kempsey Alicante, but which is the same as Morocco.

No. 10.—*Gros Maroc.* This is a large olive-shaped Grape, as large as Morocco, but colours much better. The flesh is tender and melting as that of the Black Hamburgh.

No. 11.—*Black Eagle.* This is a small black Grape, both in the bunch and the berry, and does not appear to possess any merit.

No. 12.—*Golden Lady Downe's.* This, a white form of the Black Lady Downe's, and exactly similar to it. It produces the same cylindrical form of bunch, the same large round berries, but with a fine golden yellow colour, and the same firm crackling flesh. It is now (January 27th) as plump, firm, and as juicy as it might have been in October, while all the others we have mentioned are more or less shrivelled.

No. 13.—*Child of Ille* is an oval Syrian-looking Grape, but does not possess any striking merit.

GLEANINGS FROM ROCK AND FIELD TOWARDS ROME.—No. II.

THE railway journey from Bologna to Milan is through a rich pastoral country with low-lying fields of rice or grain and dykes bordered with *Myosotis palustris*, with here and there large patches of a brilliant blue *Tenacium* (regium?). I felt very jealous of this particular railway journey, remembering our pleasant drive, in days gone by, through Modena, Parma—sacred to Correggio and his frescoes—Piacenza, and Lodi, where the women wear a long black Moorish veil, which is exceedingly becoming, and where, in fields knee deep in pasture, it is said that eighty thousand cows are kept to supply milk for the Parmesan, Gruyère, and other cheese.

It was very tantalising to pass rushing onwards, catching only glimpses of the wild flowers one longed to possess; but, after awhile, the earth, with its many-coloured carpet, was forgotten in the entrancing view of the snow-capped Alps, which broke upon us out of cloudland, revealing itself not in one full burst of beauty, but in dream-like visions that made you thirst for nearer, closer revelations. Is there anything that can be compared with snow mountains?—any feeling like that which is awakened by "Is it a mountain or a cloud? Oh, how lovely! What is it—so radiant in its glowing purity—now appearing, and now gone, as if a door were suddenly opened and shut, through whose portal you saw distant glimmerings of light and beauty which only flashed across your dazzled sight to vanish away?" As evening came stealing on, the parting clouds showed the same wonderful images changed to a rosy light. The most refulgent glowing rose colour rested on the mountain snow.

From these visions of the work of God we passed to that most perfect work of man—the Cathedral of Milan, built of the purest white marble, its thousand chiselled minarets gleaming against the sky. We sat down in the broad Piazza watching it, as the stars one by one appeared twinkling in the heavens

above, and the round clear face of the moon appeared over the tower, adding her mysterious light and shadow to the scene. In the dim light we observed a crowd of people passing into a little church near at hand—we, too, entered. The church and the numerous congregation were in deep shadow, save at the altar, where a brilliant blaze surrounded what is called the "Exposition of the Blessed Sacrament," and revealed the kneeling priest before the altar. Around us on every side rose voices in a loud murmur of petition; the priest's sonorous voice saying a litany, in the responses of which the kneeling people joined. It was a strange scene on that work-a-day evening—poor and rich kneeling side by side together in one common supplication.

The interior of Milan Cathedral, though full of beautiful details, is, to me, disappointing, and the roof is painted in imitation of stone!—but the glory of the interior consists in the shrine of St. Carlo Borromeo—the modern saint, whose virtues seem to have eclipsed those of Milan's anciently revered St. Ambrose. But St. Carlo's virtues, unlike those of many of the latter-day saints, will bear a scrutinising gaze. In 1505 we see him presiding at the Provincial Council of Milan in which canons were enacted, protesting against some of the abuses of the Roman Church. Afterwards we find him "selling all his goods to feed the poor;" and, when the dreadful plague visited Milan, he was the first in every office of love, personally rendered to the sick and dying: so I did not begrudge St. Carlo his gorgeous shrine, albeit the gold and jewels poured out upon and all around it with such lavish prodigality seemed a little out of place for one whose motto in life and death was "*Humilitas.*"

Everything in Milan has a clean and characteristic square look about it that I have noticed in no other foreign town. There is more air, more sky, and, I fancy, more soap and water.

The public gardens are very fine, and on Sunday afternoon we found a band playing, and crowds of gaily dressed folk enjoying the music as far as a continuous flow of chatter would allow them, as they walked up and down broad avenues of Chestnuts in full bloom. In these gardens I noticed beds full of *Deutzia gracilis*, the bloom hanging like wreaths of snow upon them. I had but one fault to find with the gardens, and that was that they were too well kept to allow of my gathering any wild flowers; but, indeed, the dear old untidy freedom of Italy seems vanishing away beneath Victor Emmanuel's sway, so that I had to look on a world of sulphur Roses hanging in festoons from the trees, on boughs of *Cercis siliquastrum*, and the *Petunia* Tree hanging temptingly close to my hands, without venturing to gather a blossom; and yet I must own that I have never seen public gardens that struck me as being so well kept, so handsome, or so appropriate to the purpose for which they are designed; and the numberless happy parties we found at every turn proved that they were appreciated.

One of the most ancient churches in Milan is that of St. Lorenzo, before which there stands a row of columns as ancient-looking as those before the Pantheon in Rome, while within the church there are mosaics corresponding in style, and I believe in date, with those in the churches of St. Costanza and St. Prassede at Rome.

The picture gallery of Milan is not so full of gems as that of Bologna. There is the *Sposalizio* of Raphael, one of his early pictures when in Perugino's school; Abraham's Dismissal of Hagar by Guercino, the chief beauty of which lies in its colouring. There are also some grand pictures of Paul Veronese, but nothing that leaves any very lasting impression of beauty. We found the celebrated *Cenacola* of Leonardo da Vinci in the refectory of St. Maria delle Grazie much the worse for the wear and tear of the ten years that had passed since we had seen it; the photographs of the original are really useless to convey any idea of the extreme beauty of even what is left of this painting, but there is a "toucher-up" photograph which is very good. The head of the Redeemer is still beautiful, the original sketch for it is preserved in the Brea, and is well worth a study from its portraiture of grief, unearthly in its intensity of sorrow. It depicts the moment in our Lord's life, with which, perhaps, from its humanity we can best sympathise. The friend in whom He trusted, for whom He is bearing so much, is about to betray Him. Leonardo has blended this human grief and Divine love in most wondrous harmony.

Still on by rail to Susa, a little village in the bosom of lofty mountains, where beggars, tidily clad and well-to-do-looking, meet you at every turn, some of them with many rings on the fingers held out for charity, and gilt ornaments on their

throats—a curious primitive mountain race, regarding the railway much as we regard a new comet, wondering whether its advent portends good or evil, but in either case whenever it is visible, always gazing and always wondering.

Susa is a first-rate place for botanical scrambles, so directly after we arrived we set off in search of plants. First my companion found, in the crevice of a huge rock, several fine plants of *Asplenium fontanum*, fresh and green—my companion, mark, who thought it was viride, and not I, who knew better!—so unequally distributed are Fortune's favours. Oh! how jealous I was, and am to this minute, for I could find no other root, though I searched long and well. I longed to see this delicate and lovely Fern in a home of its own choosing. I remembered my long and unavailing struggles to make it take kindly to English soil, how the slugs would eat the young juicy fronds, and the sun would dry them prematurely, so that at best some half-dozen slug-eaten, dark greenish-yellow fronds were all I ever could manage to show in my Devonshire fernery. I hardly wondered when I looked at *fontanum's* own dwelling-place—the cozy, shady crevice in the warm sun-beaten rock, the pure mountain air bringing moisture from the snow-laden Alps on its journey to the south. I must certainly go again to Susa that my friend may no longer feel she outshone me in that Fern scramble!

On another mountain I found quantities of the *Anemone alpina*—a true Wind-Flower, for, after a few days' ripening in the sun, the feathery petals fly off at a touch, like the seed of the Dandelion, by which, in our childhood, we used to count the hour, calling them "clocks." The leaves of the *A. alpina* are of the softest, most silvery-looking green. I tried to dry the flowers, but at the least pressure the whole fabric gave way, leaving only a heap of fluffy ruins; but I have since seen these gummed together in a mass, which preserves the appearance of the original flower. The specimen I refer to came from the Pic de Bergons in the Pyrenees.

In the same neighbourhood we found *Silene italica*, which has the most delicious scent. Some of the meadows were literally covered with the *Narcissus poeticus*: we gathered handfuls, and I fear their extreme beauty and scent rather diverted us from the more rare specimens which seemed to abound on every side. Growing amidst the *Narcissus* was a tall and very handsome *Scorzonera (villosa?)* with large amber flowers, the solitary leaves completely clasping the stem; at first I thought it *Hieracium amplexicaule*, but I afterwards found the same plant in the Botanical Gardens at Geneva with the name I have given. I also found a large and very handsome yellow Vetch. *Berberis vulgaris* grew in quantities on the rocks, and many another shrub and flower, gone, alas! from my memory and my book. In the latter are still many specimens unnamed, indeed one whole page full, for on my return from our hunt I found a large collection of plants just brought in for me by two of our railway companions—English gentlemen, who, seeing my taste, kindly set off on a flower-hunting expedition to gratify it, and, in addition to Susa specimens, added *Daphne cneorum* from Lago Maggiore where it abounds in profusion, and other Italian finds.

What a pleasant evening we had in that queer old rickety Italian inn, discussing our numerous treasures over a cup of English tea, made from a private store, carried by us for specially honoured occasions—a party of entire strangers, yet how unstranger-like meeting so sociably together on that evening, yet never to meet on earth again, for the strangers were to be up with the light and away over Mont Cenis in a diligence drawn by fourteen mules, while we were lazily turning round in bed meditating on the pleasures of *vetturino*, or devouring fried little birds, with other mountain delicacies, at breakfast. It seems a great mistake for the pass of Mont Cenis to be made in the night time, which is, however, the most popular time for the diligences; looking back to our ascent I feel I would not have lost one half hour of daylight for the world.—
FELIX-FEMINA.

GOLDEN AND TRICOLOR-LEAVED GERANIUMS.

If the importance of the advice given by Mr. Reid at page 26—viz., to have the plants well established in pots before planting, were more fully recognised and carried out, we should have fewer complaints about the "shabby appearance," and "the difficulty of management" of these valuable Geraniums. On the plants being small and sickly, or strong, healthy, and well established at the time of planting-out, depends failure or success. Few need ever think of being successful with these

Geraniums by submitting them to the treatment generally accorded to stronger-growing varieties. They require much more coaxing and nursing throughout the winter and spring months, to have them in perfection in summer.

Having been here very successful in the propagation and after-management of some kinds of the above Geraniums, I venture to state how we proceed with them. The plants, being lifted from the flower-beds in autumn before they experience any frost, are potted in light, rich soil, and placed near the glass in a house where the temperature can be maintained at about 50°. They grow away strongly, and by the 1st of February are capable of producing a large number of cuttings. These are taken off when about 2 or 3 inches long, and only the very undermost leaves are removed. The more leaves left on the cuttings the sooner will a callus be formed, and rooting take place. The soil, composed of about equal parts of leaf mould, decayed sphagnum, and silver sand, being prepared, small (54-sized) pots are filled with it. A hole is made in the centre of the soil in each pot, and filled with silver sand; the cuttings are then inserted in the sand, and after having been gently watered, are plunged near the glass in a bottom heat of 75°. They are placed thinly together, so that each leaf may catch all the light possible, a most important point in the short days of early spring. They receive no more water except a skiff or two with the syringe every day until rooted, which they are to the sides of the pots in ten or twelve days. They are then potted into 3½ or 4-inch pots in a soil similar to that used at first, with the addition of a little loam, and decayed cow or sheep-dung. It is here that the advantage of having each in a small pot is made manifest. They can be potted without destroying a single root, whereas, if lifted or shaken out of pots or pans, the roots are more or less mutilated, consequently the plants receive a severe check, which materially affects their growth. After being potted they are again placed near the glass in a warm house, and being regularly attended to in watering, they grow vigorously, soon filling their pots with roots. About the middle of April they are placed in a cold pit or frame, and in about three weeks more are placed out of doors where they can be protected on the appearance of frost. Towards the end of May they are turned out of their pots and planted in their summer quarters. A too sudden transition from a high to a low temperature must be guarded against, for if the plants be subjected to this the loss of a large number of the under leaves will be the penalty. Although it involves a little more labour, it is far better to harden-off gradually, in which case no bad results follow.

Here, out of several hundreds, including Mrs. Pollock, Sunset, and others, propagated and treated in the manner described, not a single cutting or plant was lost; and when planted out they grew so vigorously as to more than realise the most sanguine expectations formed of them.

It is only for those who have had any difficulty in managing these excellent and showy varieties of Geraniums that I have ventured to make these remarks. Through a deficient knowledge of their special requirements, many plants have eventually suffered martyrdom at the hands of their best and warmest friends.—J. A., *Whittingham Gardens*.

THE OLD FIG TREES AT ST. JOHN'S, NEAR RYDE.

Close to the east side of Ryde, in the Isle of Wight, stands the old manorial residence of St. John's, long the family seat of the ancestors of Sir John Simeon, Bart., M.P. The Simeon family have not lived there for upwards of thirty years, but reside at another seat towards the west end of the island. During the above period the house has always been let to some family of distinction. Since the Simeon family resided here the town of Ryde has more than doubled in extent and inhabitants, and is every season attracting a larger number of the middle and upper classes of society, who are able to afford and can enjoy a short stay at the seaside. Few towns possess greater attractions than Ryde, and being readily accessible from London and every large town, none need hesitate to take a journey to Ryde. There are four lines of railway that come to some convenient landing place on the opposite shores. Portsmouth and Stokes Bay are those to which passengers come who wish to reach Ryde by the nearest route. Then for passengers from the west, there are Southampton and Lymington.

But to return to Ryde and its visitors, and the old gardens at St. John's. About fourteen months ago there died in the

cottage, which is in the kitchen garden, Mr. Lawrence, the gardener. Mr. Lawrence had been there more than forty-four years, he having been in the employ of the Simeon family for a number of years during the late Sir Richard Simeon's life, forty years ago. None of the new-fashioned notions about flower gardening were then dreamed of—this Mr. Lawrence has often told me; and then after the family gave up living there, the object most kept in view was how to make the most of the kitchen gardens, or I might with greater propriety call them fruit gardens. They were three acres in extent; two acres were enclosed by high brick walls. These had originally been very substantially built; but for many years past time has been showing its effects on them, and here and there they have required buttresses to keep them up. The climate being mild, Fig trees always formed a noticeable feature, and were so when my old friend, Mr. Lawrence, became gardener forty-five years ago.

I have already remarked that after Mr. Lawrence had been at St. John's about ten years the family went to live at Swanton, in the west of the island, and that the house was let, but

the gardens were not, and Mr. Lawrence sold to the tenants of the house whatever they required from the gardens, and then disposed of the surplus produce as best he could. For the first few years he sold fruit to the shop-keepers at Ryde; but as the town grew and became more fashionable the fruit garden at St. John's became better known, and ultimately he had no need to take any of his fruit to Ryde.

I may take it for granted that every person, young as well as old, is familiar with the dried Figs of the shops, and which are chiefly imported from the shores of the Mediterranean; but, probably, not nine out of a hundred of those who eat them have ever enjoyed the rich and refreshing treat of half a dozen genuine ripe Figs fresh gathered from the tree. There could be no comparison between the fruit gathered, perhaps before properly ripe, squeezed into the least possible compass in a box, and carried some hundreds of miles by sea, and the many thousands of ripe Figs which Mr. Lawrence gathered every year for more than a generation. Many are the visitors to Ryde during the summer, and the Ryde season is generally the gayest during the time out-door Figs are ripe, and if ever a gardener

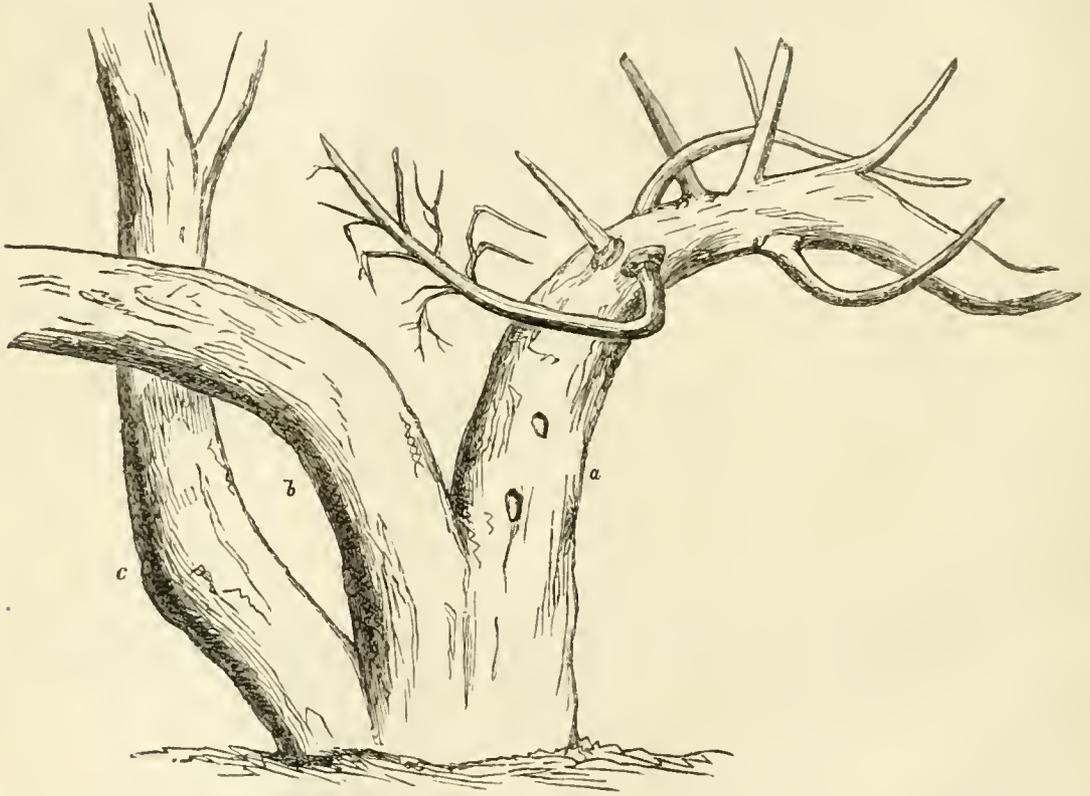


Fig. 1

felt a pleasure in his employment it was my old friend in everything respecting his Figs and Fig trees.

There are about twenty-six or twenty-eight of them, and one-half of them are growing over a wooden trellis, which quite covers a walk running across one of the compartments of the garden; the others are growing on the outside and inside of one of the outer walls of the garden. For years Mr. Lawrence had carefully cut, pruned, and regularly tied-in those Fig trees which are against the walls; but, being a quick observer of everything which came under his care, he perceived that those trees (and, perhaps, no equal number in any part of England can be compared with them), which were not so treated, but were left more to themselves, bore a far greater number of fruits, and were, moreover, shorter-jointed, and did not make so much gross wood as the trees against the walls, with which he took such great pains. He, therefore, gave up pruning them, and for years before I became acquainted with them they had assumed quite the character of trees, and during summer, while in full leaf, they quite hid the garden wall, on one side extending to from 4 to 6 yards from the wall, and reaching over it for 1 or 2 yards. These Fig trees had for a generation never been

pruned in the ordinary acceptance of the term, but when they became over-thick Mr. Lawrence, saw in hand, cut out the branches to the required distance apart.

The Fig trees had long been well known to a large portion of the visitors to Ryde; but the town has of late years grown so fast that it is now almost close to St. John's, and last autumn the old garden and all the adjoining land were bought for building-purposes. I am therefore afraid that these old, noble, and very productive Fig trees will now soon be numbered with the things which have been. I have often wished that some photographer would take them, the picture they would make would be interesting, independently of its furnishing a faithful record of what they have been. Their produce always commanded a high price when Ryde was full of company, and should they be destroyed will be much missed. Every year, when we had no cold and chilly night about the end of April, May, or the beginning of June, ripe Figs might be expected by the thousand in August and September, and up to the beginning of October if the weather was fine.

Passing through St. John's garden soon after it was sold for building, and thinking over the changes which in all probability

would soon cause these Fig trees to be reckoned as things of the past, and how short a time ago it was that my old friend was busy amongst them, by way of securing a memorial of this old garden and its Fig trees, and associating them with the memory of Mr. Lawrence, whose genial flow of spirits and general information were always very refreshing to every one who called in to see him, I pencilled down some resemblance of the stems of a few of the largest trees, and I think the sketches may prove of some interest to the readers of THE JOURNAL OF HORTICULTURE.

One part of the garden is divided into four equal quarters by walks crossing at right angles in the middle, and one of these walks is quite covered with Fig trees. The walk to the north

enters right into the back-sheds and fruit-rooms. At 6 or 8 feet to the right is an old vinery; and between the fruit-room door and this vinery is a Fig tree, which had originally been trained to the garden wall and over the top of the doorway. Fig. 1 represents the lower portions of this Fig tree, and how it passes over the door. As I have already mentioned, none of these trees have been pruned for more than thirty years, only thinned-out when the branches became over-crowded. The separate stems shown in fig. 1 measure just above where they unite that on the right, *a*, upwards of 3 feet in circumference; that in the middle, *b*, nearly 3 feet 4 inches; and *c*, upwards of 2 feet 6 inches. One branch is entirely resting upon the trellis over the walk.

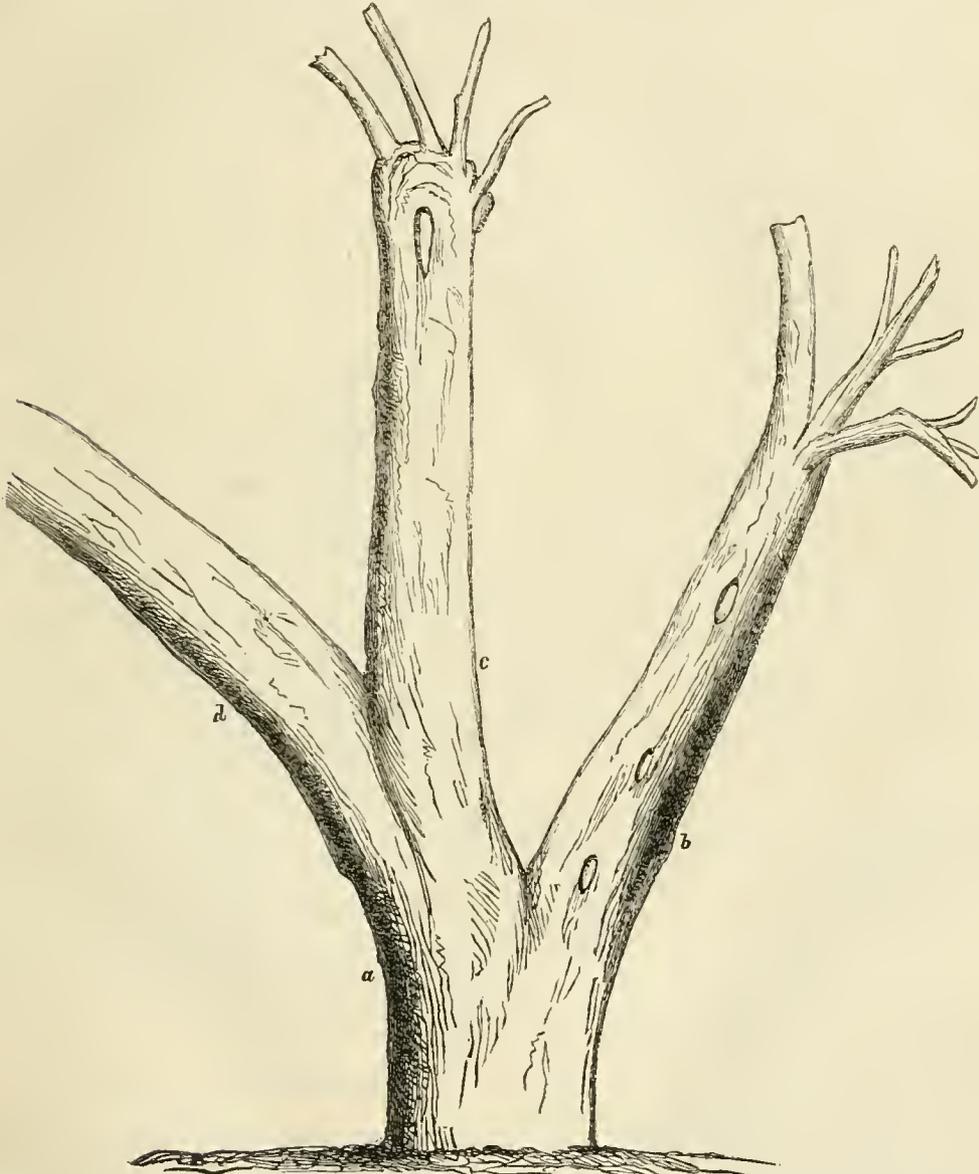


Fig. 2.

At the upper corner, outside the garden wall, is the largest-stemmed tree (fig. 2), and as a standard the most perfect amongst them. In all probability it had at one time been very much under knife treatment, and probably its branches were tied to the wall; however, it will be at once seen from its very robust appearance that it has not been in fetters for many years. The trunk, *a*, before dividing measures in circumference 4 feet 6 inches; the branch, *b*, 2 feet 2 inches; *c*, 1 foot 9 inches; *d*, upwards of 2 feet.

I observed just before entering the garden that one of the

best and widest-spreading of the Fig trees was all but cut away. It had quite a dome-shaped appearance, the branches extending 28 feet in diameter, and 20 feet in height. Birds are very fond of ripe Figs, and whenever nearly ripe the trees must either be netted over or each separate fruit bagged. I have often thought that these Fig trees would well repay the expense of covering them with glass, thus securing them from the cold chilly nights of spring as well as from birds. Mr. Lawrence repeatedly told me that he had gathered a bushel or two of ripe Figs in one day.—G. DAWSON.

WORK FOR THE WEEK.

KITCHEN GARDEN.

JANUARY has proved a seasonable month, with just enough of frost and snow to check vegetation; had we experienced the severe cold that sometimes takes place after a mild November and December, the effects would have been very serious. We must not, however, be cheated into indifference respecting February, and withdraw protection from tender plants in matted beds and frames, or from vegetables where a regular supply is required. Whilst the frosty weather continues wheeling manure, composts, &c., ought to go on uninterruptedly till finished, in order to save the walks in the spring. As the frost has not as yet penetrated deep, digging and trenching all spare ground for spring crops must be proceeded with. The ground for Onions ought to be left very rough for the frost to pulverise it. It is a crop to which great attention ought to be paid, being in general demand. *Cabbage*, fill up vacancies in the autumn plantation, also make fresh plantations of the autumn sowing if necessary. *Cauliflowers*, those under hand-glasses and in frames must be fully exposed in mild weather, or they will button-off in the spring. Sow seed on a south border to produce plants to succeed the autumn sowing. *Celery*, sow seed in boxes, and place them in a forcing-house to produce plants for an early crop. *Cucumbers*, as soon as the plants are turned out, thrust a stick under each hill, and examine it frequently; if there is any approach to a burning heat draw as much of the soil from the bottom of the hills next the turf as you can without disturbing the plants, afterwards give the centre of the bed a good watering, which will act as a temporary preventive of burning until the heat declines. A lining of dry litter should be made round the bed to protect it from cold drying winds. Sow a little more seed, so that should an accident happen to the plants turned out others may be ready to take their place. *Garlic* and *Shallots*, where the soil is not wet and stiff they may now be planted, if not done in the autumn; plant in rows at 6 inches apart. *Kidney Beans*, a crop sown now in small pots, and when of sufficient size planted in a pit where a command of heat can be had, will produce more abundantly than those in pots; the introduction of the red spider into the forcing-house will also be avoided by adopting this plan. Keep those in pots well watered. *Lettuces* in frames to have air night and day if the weather is mild; sow on a sloping border to succeed the autumn sowing. *Potatoes*, where there is not the convenience of frames or pits plant on a south border for an early crop. *Chubarb*, pots may now be placed over the roots, and covered with dung or leaves. *Spinach*, a small sowing may be made between the rows of early Peas. *Turnips*, where young ones are wanted early a sowing should be made on a slight hotbed. Traps should be set in different parts of the garden to catch mice; they will now more readily take the baits than they will when there is other food for them.

FRUIT GARDEN.

Finish all pruning, digging, trenching, &c., in this department as soon as circumstances will permit. Newly-planted trees must be well staked and mulched if the spring is likely to be dry. As thorough drainage is essential to the success of every crop, now is a good time to push it forward.

FLOWER GARDEN.

The amount of delight and satisfaction which a flower garden is calculated to yield to its possessor will always be in proportion to the order and design which pervade it, to the unity of its parts in constituting a perfect whole, and to the amount of attention bestowed on the various details, constituting what is termed high keeping. What pleasurable sensations does the well-regulated mind experience in viewing a small garden replete with floral beauty and neatness! and, on the contrary, what powerful emotions do we feel in viewing an extensive place replete with "capabilities," but wanting the last touch of finish! Let us, therefore, remember, in all that relates to a flower garden, that order and neatness are indispensable. At this season of the year much must depend upon these qualities. The smooth and verdant turf, the fresh and neatly-raked surfaces of beds and borders, the flowing sweeps of walks displayed in well-defined margins of shallow depth, the walks themselves brimful of bright and warm-coloured gravel, the freshness and beauty of the evergreens unmenumbered by faggots of dead wood; add to these thousands of Aeonites, Snowdrops, and Crocuses just protruding their tiny heads cautiously through the soil, as if fearful of appearing prematurely, and we have the *beau idéal* of what an English garden is in February. Grass lawns will now be much benefited by a thorough rolling, as also gravel walks. It may be worth while to know that a small

faggot consumed in the cylinder of the garden roller will heat it so as to prevent what is technically called "licking." When it is necessary, take up Azaleas, Rhododendrons, &c., and rearrange them according to their sizes. If it is wished to increase any choice kinds, layer a few branches now by pegging them down; this is the best time for such operations. If the soil is poor give it a good dressing of half-rotten leaves, which will enrich it greatly.

GREENHOUSE AND CONSERVATORY.

In the greenhouse proceed with the potting of young plants, and small specimens of all kinds, using the soil tolerably rough, with plenty of sand, and drainage, and keep them comparatively close until they take fresh root. This is a good time to start a collection of *Kalosanthes*, potting them in a compost consisting of two parts sandy turfy loam, one part turfy peat, and one of half-decomposed leaf mould, with plenty of coarse gritty sand, and a liberal admixture of charcoal and pebbles, or potsherds broken small. Give them a liberal shift, and keep them in a temperature of from 40° to 50°, and as soon as they have made fresh roots stop each shoot, and train the plants into form. Attend to the training of *Tropeoliums*, and other climbing plants, and shift the former into their blooming-pots if not already done. Plants of *Polygala* or *Boronia*, which are becoming too forward in their growth, must be placed in the cool end of the house. This is a good time to start a general collection of Azaleas, and no place is so good for them as a tolerably close pit partly heated by dung. Pot them at the time of introducing them into heat, giving a liberal shift, into good peat and sand, to which a little thoroughly decomposed cowdung may be added. Increase the temperature of the pit gradually to 65° or 70°, and maintain a moist growing temperature, with plenty of air in favourable weather.

STOVE AND ORCHIDEOUS-HOUSE.

In the culture of Orchids, the first point of importance is to secure a good-sized and well-matured pseudo-bulb; next to this is the preservation of all the roots in a healthy state. To effect this it is absolutely necessary with many plants that they should be grown on blocks of wood, either charred or not, but without any moss applied to them; and for the information of amateurs and beginners, it may be as well to give a list of the plants here alluded to:—*Phalenopsis amabilis*; *Barkeria spectabilis*; *Epidendrum Skinneri*, and *E. furcatum*; *Oncidium pubes*, *O. triquetrum*, and *O. crispum*; *Sophonitis cernua*, and *S. grandiflora*; *Leptotes bicolor*, and *L. violacea*; *Maxillaria Steelii*. The following also thrive much better so treated than otherwise:—All the *Brassavolas*, all the *Lachias*, all the *Cattleyas*, most of the small-growing *Oncidiums*, nearly all the *Epidendrums* and *Maxillarias*, and all the *Schomburgkias*. In giving new blocks to such plants as require them, they should always be chosen proportionate to the specimens they are intended to bear, and the heel of the plants must be placed close to the end of the log, so as to give as much space as possible for the plants to grow upon, for by growing them without moss the blocks in most cases will be found to last twice as long as if moss were employed. The plants must be made fast to the blocks by means of copper wire, and if they are shifted at the proper time very little fastening is required. The proper time to shift these plants is just before they make their new roots, which, of course, is at very different seasons of their growth: for instance, most Orchids make their roots while they are growing, but it is not so with the *Cattleyas* and *Lachias*; they, for the most part, make their roots after they have completed their growth.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

SOWN Early Horn Carrots, Radishes, &c., on a slight hotbed, as alluded to last week. Gave plenty of air to Radishes and Lettuces coming on. The Cauliflowers injured by damp, alluded to last week, were not young plants, but those with heads fit for table. A few still remain, and Broccoli will succeed them. Sowed a lot of Tom Thumb Pea, and Sutton's Long-podded Tom Thumb, to grow in pots, and others to be transplanted under protection; also a few of Dillistone's Early Pea and Early Mazagan and Gem Broad Beans for transplanting out of doors. Dillistone's is a few days earlier than Sangster's No. 1; but of all early Peas that we have seen there is none with us that equals Sangster's in productiveness. The next best Pea for earliness and productiveness, though coming in fully a fortnight later, is Dickson's Favourite. Our other work

was much the same as detailed last week. The change of the weather has enabled us to proceed with digging and trenching what little spaces we have unfurnished in the kitchen garden. The Dalmeny Sprouts, though not equal to other Brussels Sprouts at this season, furnish a nice tender little Cabbage on the top of each stem, as tender when cooked as a nice Colewort, and seemingly much hardier, and there is every appearance that from this kind the sprouts will come firm and late after those of other kinds have begun to run. In answer to a lady who has sent a note on the subject, we would say, Use the common Brussels Sprouts for a winter supply, and these Cabbage-headed Sprouts for spring, at least that is the impression produced on us by what ours promise to be. Brought home a few leaves, and find that the high winds will leave us short of fermenting material this season. But for this would have had lots of Potatoes on beds before now. At present our forward stock is chiefly confined to pots: but before this appears we most likely will have started some beds under frames, with just a little heat beneath them, which is generally safer than having too much. A quantity in pots are, however, in excellent order.

FRUIT GARDEN.

Had some trouble with our stokeholes, protected merely by a flap door, as the heavy rains soaking through the ground found access to them. We fear also that the drains could not, or would not carry off the water sufficiently. We have made arrangements to carry off all the surface water from them, but still we did not escape altogether, and fear that the dumb well into which the drainage goes must itself have become full. We had one stokehole, about 6 feet deep, in the Melon ground, that used to annoy us very much, though to keep the place tolerably dry a dumb well had been sunk in the chalk below the clay to the depth of nearly 50 feet; but in heavy rains the well used to be filled, and when the water rose above the stokehole level, that too was filled, and if we wished the fire to burn we had to lower or empty the well. Now we take all the surface water past the well, collect it in shallow cesspools, and take it from thence by pipes into a pond made on purpose, and thus we obtain a fine supply of water and escape a flooded stokehole. A vast quantity of water may be thus collected from hard, gravelled, and, better still, asphalted paths in a Melon ground. Having known what it is to be without water, and to use for plants what they ought never to receive, we have regretted to be obliged to drain away so much water this season, that would have been invaluable in summer could we have kept it.

Went on with pruning out of doors, as we could attend to the trees, and trying almost every device to keep birds from the buds; but we were, nevertheless, often obliged to confess ourselves beaten. It is vexing after the trees are bristling with fine buds, to find all the most forward and best destroyed. On the top of a small Thorn tree, the head about 15 feet above the level of the Laurels, and perhaps 12 feet in diameter, we counted the other morning just as daylight was coming in, 250 little birds, and that was not all of them. Every Laurel bush is crowded at night. Poor things! whilst alive they must find food. With all our sympathy for small birds, it is possible to have too many of them.

Gave plenty of air to Peaches opening their blossoms, and treated other houses much the same as detailed in previous weeks. Were we in this respect to listen to all hints, for which, nevertheless, we are much obliged, we would in one case just state every week every little thing that had been done, though that would be mostly a repetition of what was said the week before, or we would never repeat at all, and only write when we had something new or fresh to say, which would be very seldom indeed.

ORNAMENTAL DEPARTMENT.

Looked over half-hardy plants in cold pits and frames. In the pit where *Calceolaria* cuttings were inserted in the end of October and the beginning of November, we find all are growing now—scarcely one has failed. Wednesday being a fine day, pulled out the few weeds that were among them, however small, a very few decayed leaves, and then pulled a pointed stick between the rows, so as to loosen the surface soil a little. This will help them under any circumstances, but it will help them most of all if we should be obliged to shut them up in a continuous frost. If we had the chance we would be inclined to change cuttings with some friends as respects many bedding plants. We believe that even in their case a change from different soils is beneficial. From the bloom being very freely

produced, and then from the heavy rains in autumn, we did not obtain so many cuttings of *Aurautia multiflora Calceolaria*, nor so good, as we liked, and we obtained a batch of cuttings from a friend in the neighbourhood; and even now in the cutting-bed we can see how far these cuttings extend, as they have a rich luxuriant green about them, which the others do not exhibit, though treated in every way alike. We have no fault to find with the others, but still these look better, and must soon be thinned, otherwise they will injure each other. As far as we recollect, these *Calceolaria* cuttings received very little shading, and no regular watering since they were watered when they were inserted. We have no doubt that many of our bedding *Geraniums* that do well would do better still could we manage to exchange cuttings with another place at a little distance. Even in the cutting-bed these *Calceolarias*, which seemed not the least different from our own, are quite conspicuous now; and we believe, taking the evidence of the past into account as something like a guarantee for the future, that they will be more vigorous in similar circumstances throughout the summer. The difficulty in effecting such exchanges arises merely from the fact that many gardeners could take what cuttings they liked by the middle of August, whilst in other cases where there was a resident family it would be difficult to make many cuttings of bedding plants until September or October.

Potted a lot of *Fuchsias*; pruned more, to prepare them for potting after breaking. Cuttings inserted now will make nice flowering plants for the autumn. A little bottom heat is a great advantage for fresh-potted plants where it can be given them. Brought in the most forward *Caladiums* that were potted in small pots; and after potting afresh in larger pots, plunged them in a mild bottom heat. The others will be potted as the first pots fill with roots. No plants are more benefited by a little bottom heat. To have them in perfection they should be grown in a platform or bed, where a bottom heat of about 10° more than the atmospheric heat can be given them. The leaves will then have a size and a richness which they seldom possess when standing on a shelf with the pot exposed, and no bottom heat. Proceeded also with potting fresh Mosses and Ferns, and those of the latter especially, which, after having the decaying fronds cut down, were beginning to break afresh. Many Ferns are especially beautiful when the fronds are young. Many small Mosses, as *Selaginella apoda*, can only be kept fresh and vigorous by frequent division and potting. When full grown and let alone, a drip will cause pieces to fade and decay. Either for small plants or cut flowers in vases such small Mosses become exceedingly useful. In covering pots in small vases, the short green moss found on trees and rocks is also very useful, as these hardy mosses stand the dry heated air of rooms much better than those brought either from the greenhouse or the hothouse. Were we a lady or a gentleman with any pretensions even to fitness in taste, we would not have a flowering plant in a pot in a room, unless the common pot were concealed in a vessel whose artistic merits were in unison with the surrounding furniture. We know that some ladies are very clever in dressing in various ways the outsides of common pots in handsomely-furnished rooms; but too often the makeshift is easily seen, and that spoils the effect. For window and room plants see last week.—R. F.

TO CORRESPONDENTS.

*** Many interesting communications are in type, but omitted for want of space. We purpose giving another Supplement next Tuesday, which will enable us to publish them.

ROSES TO BLOOM IN JANUARY (*William*).—Having no convenience for forcing, you can only have Roses in bloom at this time by cutting the plants in after they have done blooming in summer to four and not more than six leaves, and they will push and show for bloom in autumn. You must then prevent their flowering by keeping them on a north aspect until November, when they are to be removed to a light, airy, cool house from which frost only is excluded, and they will then give a few blooms late.

TAKING UP STRAWBERRIES FOR FORCING (*Idem*).—You may take up the plants, and, making sure of a ball, pot them now, plunging the pots to the rim in ashes in a warm sunny exposure, and early in March place them on the shell of your greenhouse. They will give you a good crop of fruit if they have good crowns.

BOOKS (*T. B. H.*).—Mills on the culture of the Melon. "The Kitchen Garden Manual" contains full directions about Cucumber culture. It can be had free by post from our office for five postage stamps.

LIQUID MANURE (*Thomas Barnes*).—All kinds of liquid manure should be applied only when plants are growing. Your pig-stye drainage may be applied undiluted to vacant ground where Cabbages are to be planted, but for watering plants one bucketful should be mixed with six bucketful of water.

PROPAGATING GERANIUMS (A Little Geranium).—Your Geraniums that have not been cut-in will now give a cutting from the point of every shoot, and you may form plants by taking off cuttings and potting them in small pots. Plunge these in a hotbed of 75 for three weeks, and the cuttings will be well rooted. Your propagating-pit will do admirably for them, and if you do not put in the cuttings until February, or early in March, they will root with more certainty. The cuttings will each give a cutting if you continue them in heat, and the old plants will afford a second lot of cuttings in number about the double of the first; you may facilitate their doing so by placing them in heat after taking off the first lot of cuttings, and keeping them there until the shoots be sufficiently long. If you take off the first lot in February, the old plants and the first cuttings will afford more cuttings early in April. They strike freely in gentle heat. When struck they should be removed to the greenhouse.

GERANIUMS IN BOXES AND PANS (Idem).—Do not pot them from the boxes and pans until the middle of next month, and not until the middle of March if you keep them in the greenhouses after potting. If potted in February they should have a temperature of from 50 to 55° at night, to induce them to root well and become quickly established in the pots.

PROPAGATING-PIT (Idem).—The only objection to be taken to your arrangements is that the flue being so closed in, the heat will be too much confined, and will warm that in contact with it, rather than the atmosphere by ascending through the drain tiles. Were you to have a chamber made over the flue, and the tiles communicating with it, then the heat would rise sufficiently through the drain tiles to maintain the atmosphere at a suitable temperature. The other arrangements are good. You will require a plant at every 2 feet 6 inches, the plants being trained to the roof, and from 9 inches to a foot from the glass. Over the dung-bed should be 1 foot of good rich turfy loam for the Cucumbers to grow in. Ferns would do well, the shade of the Cucumbers being sufficient for them.

RHODODENDRONS FOR FORCING (—).—Rhododendron catalwildeense, vars. Everestianum, Glenyannum, Jackmanni, Lindsayanum, Standishii, and delicatissimum: R. hirsutum, R. odoratum, R. myrtifolium, R. canescens album, R. Busselianum, R. atrosanguineum Victoria, R. atrosanguineum, R. Blendyanum, and R. gemmiferum. These are good, as are all the R. Nobleanum vars.

RICINUS COMMISUS FOR PLANTING OUT (N. D., Batham).—Sow the seed early in February in the smallest pots, one or two seeds in each, using a compost of light turfy loam two-thirds and one-third leaf mould, just covering the seeds with fine soil; plunge in a hot-bed of 75, and keep the soil moist. Let the pots continue plunged until May, potting the plants as frequently as they fill the pots with roots, and gradually hardening off so as to turn them out early in June.

CUSTARD APPLE (Idem).—It is not a native of Madeira but of Brazil. It is grown extensively in Madeira, also in the East and West Indies. We are not aware of its having been successfully grown for its fruit in this country; if it has, we should be obliged for particulars of its cultivation.

SOIL FOR CUCUMBERS (R. E.).—The best compost for Cucumbers is that formed of turves taken from yellow loam of good medium texture, cut 3 inches thick, and placed for twelve months in alternate layers with fresh horse-droppings. Turn the whole over twice, and mix with it at the last turning a bushel of soot to every cartload. This, chopped with a spade and made fine, will grow Cucumbers better than anything we know of.

GRAPES FOR MARKET (A. S.).—None are so marketable as the black varieties, and you had better have none other than Black Hamburgh and Lady Downe's Seedling.

FUNGUS (A Reader, Beckenham).—It is quite impossible to detect the Fungus from such a smashed fragment. It seems like young Mushrooms suddenly checked in their growth—certainly not Truffles.

LANDSCAPE GARDENING (W. Williams).—Loudon's edition of Repton's work on Landscape Gardening.

MEALY BUG ON ORANGE TREES.—In the Journal, issued January 16th, "H. T." is recommended a process for cleaning his Orange trees from mealy bug. Mr. Carson, of Melbourne, showed that Orange trees in Australia (where blight appears to be much more vigorous than in England), were restored to health by means of Gishurst compound. Perhaps "H. T." will operate on one of his trees as follows:—Rab a wetted painter's brush over the Gishurst in its box, then pry the thick lather well over all the infected parts of the Orange tree. The result will, I believe, be as successful as that from the treatment recommended in the Journal, while the Gishurst treatment has the advantage of being simpler and more quickly performed.—G. W.

BOG PEAT (T. B.).—If you require such as is used for fuel we do not know where you can purchase it in London. If you mean the bog earth, or heath mould used for potting, any nurseryman would supply you.

WALTONIAN CASE (A Medical Man).—We do not know where these cases can now be procured. If you can apply gas to it, a Bijon Plant Case, made by Mr. Stocks, Cabinet Maker, Archer Street, Bayswater, would do for striking cuttings.

FUCHSIAS FOR WALL (W. S.).—Souvenir de Chiswick is a good dark, and Rose of Castile a good light corolla'd free-growing Fuchsia. The only aspect suitable for them out of doors is a south one, and there they will require to be covered up in winter to protect them from frost, and the surface of the ground must also be covered with 6 inches of litter to protect the roots and crowns from frost.

MOSS ON GRAVEL WALK (Eques).—When the surface is frozen hard brush the green places heavily with a half-worn broom, and it will clear away the moss. The best remedy is to turn the gravel, and March is the best time of the year to do it. Salt strewn on the green places will kill the moss, making the surface quite white as if a snow shower had fallen. It also renders the walks damp.

PLANTING BOX EDGING (Idem).—It is necessary to take off the slips with a portion of root to them. Your Box being old, it will be necessary to plant it deeply. All the bare stem portion should be inserted in the soil; to make sure of growth the slips must have roots. Two inches of the growth of last year will not do well.

APPLE AND PEAR PIP SOWING (Landaff).—Your plan is good, and we are unable to improve upon it. They will do better without the frame than with it.

SEEDS FOR A 1½-ACRE GARDEN (Ignoramus).—It is very difficult to state what might be the cost of seeds for such a garden for one year, unless we knew the habits and wants of the family. We once knew a case where a gardener paid as much for small Salad seeds alone as his neighbour did for all the seeds he wanted, and both places were of about the same size, and economy and fair dealing were exercised in both. We may say, however, that allowing a fair price for all the seeds wanted, with a quantity of such articles as Garlic, shallots, and sweet herbs, altogether about £5 might be allowed. This opinion is of course given in the absence of all information as to the special wants of the family, and every family has wants especially its own. We cannot, however, hold out much prospect of many seeds being saved in a garden; the appearance of the plants, when in a seed-ripening condition, is rubbishy, and seeds are better saved on a large scale than in patches in a garden that may be visited any day, perhaps, by the family. Most gardeners, however, pride themselves in saving anything that is especially good in the way of Celery, red Beet, or late Broccoli; and now and then a good Lettuce, perhaps, and a batch of Dwarf Kidney Beans or Scarlet Runners that have not been all wanted, are allowed to ripen their seeds; but, with these exceptions, and any other vegetable that is especially good, gardeners may find more profitable employment than attending to small parcels of seeds. When we say that most market gardeners, whose living depends as much on their savings as on their gain, buy their seeds instead of growing them, we hope employers of gardeners will see the utility of enforcing this rule too far.

GAS TAR FOR DESTROYING RED SPIDER (D. H.).—Gas tar applied to hot-water pipes when hot will emit fumes that will kill red spider and the leaves of plants as well, unless the latter are mature, when they will not be injured; and this, we think, must have been the case in the instance alluded to by "NEMO"—viz., the leaves of the plants infested with red spider were so fully matured that nothing short of an absolutely destructive agent would injure them. If you apply gas tar to hot-water pipes when they are cold you will find that when they are heated fumes will be given off that will injure the inmates of the structure, and if it be applied when the pipes are hot, and they are maintained hot until dry, the fumes emitted will kill every immature leaf of nine-tenths of the plants in cultivation; but, after it has become dry, if the pipes are not heated more than they were when it was put on, no fumes will result. When the gas tar is applied to a flue as hot as it can be made, the fumes will be given off rapidly, and the tar on becoming dry will not emit fumes until the flue is made hotter than it was when coated with the tar. The fumes will kill the immature leaves and growths of all plants if sufficiently powerful, but if the leaves are mature—as for instance those of Vines, the fruit of which is commencing to colour, the foliage will not be injured to any great extent, unless the fumes are very strong. When the woodwork of a house is painted with gas tar, the fumes are not powerful after the tar has become dry, but every time the sun heats the boards more than they were heated when the tar was applied fumes will be given off, and this we have found to be the case for two summers after the application, and in the third there was often a bad smell when the boards were heated by the sun's rays. The fumes of gas tar are injurious to vegetable life, and are too uncertain and dangerous an agent to be used as a destroyer of the insect pests of a garden.

ALTERING PITS (A New Subscriber).—The height of the walls of the pit you propose altering must be in proportion to the plants you wish to forward in it. For a pit 10 feet in width, and 32 feet long, and for which you wish to have bottom heat and top heat from flues, the back wall may be 8 to 9 feet, and the front wall from 4 to 5 feet high. The simplest plan would be to sink the furnace at one end, take the flue beneath the proposed pathway, or in front of it, and take it out at the other end, or return it to the same place. This simplicity must be departed from if you resolve to make the pit into two distinct little houses, to be heated separately or together. By having the furnace at one end, you could heat the part next the furnace without heating the further part, but you cannot heat the further part without also heating the nearer part. To heat either at pleasure, and from one fire place, the furnace had better be placed at the middle of the back wall, and so low that the furnace bars shall be 18 inches at least below the level of the pathway at the back, and quite as much below the base of the flue. The furnace should be rather roomy, and from it, on the slant, take two flues, one for each house, taking both below the pathway, say for 3 feet in width, and then raising the flue wholly above the level of the floor. These flues should be neatly fitted with strong dampers near the furnace, so that the heat may pass into one or both as desirable. Suppose that you allow from 24 to 3 feet for a passage, the rest of the space may be shut off by a wall from 2 to 3 feet in height, forming a pit in front. If you wish the flues concealed, along this pit they must go, and, if much heat is wanted, return and pass beneath the pathway into the chimney. From the necessity of thus descending to reach the chimney you will have to raise that higher, say from 12 to 15 feet. The flues should be at least 1 foot in depth, and 9 inches wide, inside measure. If you make a chamber, the bottom of which will be 6 inches above the top of the flue, all will be easy, as you have only to leave openings into that chamber so as to obtain what top heat you want out of it at will. It would be well to have such flues for 9 feet nearest the furnace, brick on bed instead of brick on edge. Spaces for cleaning should be left at the ends. It has several times been stated how the spaces between such flues, and from them to the walls, might be filled loosely with clinkers, stones, bats, &c., and for 4 or 5 inches above them, and then finished with fine gravel, with drain pipes set upright back and front so as to let heat up at pleasure, and also pour water down among the rubble when necessary, without going on the flue, which must be avoided. Anything may thus be done with the old-fashioned flues, so long as they are sound. For Cucumbers and Melons use from 18 inches of soil, with a little rubble below it, which you can water without drenching the soil, for excess of dryness at the bottom must be avoided. The Cucumbers should be 15 inches from the glass. In changing the height of the walls the ventilators should be made in the walls, and then there will be no necessity for moving the glass. Where a high temperature is wanted large ventilators are not needed. A foot of air and of each light, back and front, would be ample. A few inches would often be enough, as when the sun was high you would need little fire heat.

PEACH TREE BUDS DROPPING (G. S.).—This is generally owing to extra ripeness of wood, dryness of the roots, and dryness of the air; but, if the dropping is only in moderation, it just does for the trees what had often better be done by the gardener. There is no doubt that washing the trees even with soap and water, let alone Gishurst compound, also un-

settles many of the buds, and whenever a stimulus is given to extension they drop. Those out of doors are free from some of these casualties, but how often does it happen that many buds, if they stand, are defective. Washing, and dryness at the roots are the chief causes, but, if the dryness is not excessive, there will generally be enough of buds left. We have often heard gardeners lamenting about their buds falling in March, and then in August lamenting that they had left so much fruit.

RUSTIC BASKET-MAKING (H. B., Lancashire).—It is a trade, and we know of no one who would furnish the information.

TWELVE SELECT VARIETIES OF AZALEA INDICA (Jack).—Holfordi, Standard of Perfection, Delecta, Glory of Sunninghill, Magnet, Gem, Stauleyana, Gledstaesi, Iveryana Improved, Flag of Truce, Criterion, and Etoile de Gand.

CYCLAMEN PERSICUM BLOOMING BADLY (Idem).—They have this year, more than usually, a peculiar twist of the petals. Whenever we see this we are sure the plants will be unusually prolific in seed. Give them weak manure water at every alternate watering, and it will help to make the petals broader.

SUPPLY OF EARLY VEGETABLES (T. Downes).—When there is plenty of glass and plenty of heating power, gardeners generally do manage to have many crops coming on at the same time, though it would require extra management to have Potatoes, Rhubarb, Sea-kale, and Cucumbers in the same place. Our remarks had reference chiefly to those with limited means, and would tend to show how such vegetables as Rhubarb and Sea-kale could be had in plenty where neither light nor heat could be given for Cucumbers. At this season of the year many farmers, and those keeping a horse, might have Sea-kale and Rhubarb, but could not give the supervision and care that would be necessary for Cucumbers. Whenever a heat of from 50° to 55° and 60° can be maintained, though the place be in darkness, these vegetables and Mushrooms may be obtained. We have had all these doing well in a small house, used for store plants in winter, and also for Cucumbers, but the house was constructed a little singularly in this way:—It was about 20 feet long and 11 feet wide, had a broad shelf and path all round, and a platform in the centre, under which was the tank that heated the house, formed of wood and covered with slate. The tank was supported on arches, and the openings to the arches were fitted with boarded doors, easily moved by a handle. Beneath the tank, in these shut-in arches, the temperature was much lower than in the general atmosphere of the house, and there Mushrooms, Sea-kale, and Rhubarb were first-rate, and with little more trouble than putting in the roots of the last two. There is little danger of Kidney Beans damping where they can have dry heat. Your plan is often adopted. We have tried your plan of planting the tops of Potatoes, but we have not previously heard of its being resorted to as a general practice.

PLANTS FOR NORTH AND SOUTH ASPECTS (J. R. N.).—For your north aspect nothing would answer so well as Ivy, of which Hedera Regneriana is fine, two plants of which would cover that desired better than anything we know. If these are objected to, Crataegus pyracantha and Cotoneaster Simmondsii. On your south aspect, 25 feet high, Magnolia grandiflora, and the Exmouth variety of the same. These are not climbers, nor, indeed, are the two preceding, but you confine us to evergreens, and there are not many of these suitable for covering high walls.

RENOVATING VINE BORDER (R. C. S. H.).—Your proposed plan of removing as much of the soil from the border as you can, and replacing it with rotten sods a year old, is good; but, instead of mixing large pieces of bone

with the soil, use boiled half-inch bones, and do not cover the roots more than 6 inches deep. A quantity of leaves and fresh litter laid on the border to the depth of 2 feet will do more to bring the roots to the surface than a deeper covering of soil. We think the bunches and berries would have been finer if a less number of the former had been allowed to remain.

DAPHNE INDICA CULTURE (Reginald).—Provide good drainage, for if that is not secured the plant soon loses its roots, assumes a sickly appearance, and eventually dies. In potting use a compost of turfy sandy peat and turfy yellow loam in equal parts, with one-sixth of sand intermixed. Care should be taken not to over-pot, for the plant seems to thrive best if rather under-potted; and it should not be over-watered, for, if the soil be kept too wet, it will perish; allowing the soil to become dry is equally injurious. Do not place the plant in a moist growing heat after blooming, but in front of the greenhouse where it can have plenty of air, which all the Daphnes require. We think your plants perish from placing them in a greenhouse fernery, which is no place for flowering plants, much less for those requiring, as this Daphne does, abundance of air and light. Placing the plants out of doors in a shady position to ripen the wood is all wrong, for plants in the shade can never have the wood ripened, and, the pots being exposed, the evaporation from their sides will dry up the roots and destroy the delicate fibres of these. If the pots are plunged the soil is apt to become too wet at times. For the plant to bloom well it requires a temperature of from 50° to 55°, and an abundance of air and light after the growths have been made, in order to ripen them thoroughly.

PLANTS FOR BACK WALL OF CONSERVATORY (A. K. N.).—Heliotropes used to be excellent up and around the pillars of the conservatory at the Grange—Lord Ashburton's. These might be varied with such plants as Jasmium gracile and revolutum, and odoratissimum; a Fuchsia or two, and Habrothamnus elegans. For rafters: Passiflora cœrulea, and var. Colvillei; Kennedy's Marryat's scarlet, monophylla purple; Rhodochiton volubile, Bignonia chirera, Plumbago capensis, Sollya heterophylla, Fuchsia microphylla, Passiflora alata-cœrulea purple, Bignonia jasmimoides, Sollya angustifolia, Brachysema latifolia. For large hanging baskets choose three or four different coloured Manrandyas; two or three varieties of Lophospermum; one plain-leaved and one variegated-leaved Cobœa, and four varieties of the Tropœolum, of the Lobbianum and elegans varieties. For smaller more lasting baskets choose such as Cactus Mallisoni and fraguliformis, Saxifraga sarmentosa, Hibbertia grossularifolia, Tradescantia zehriana, Arctotis argentea, Kennedy's prostrata and coccinea, Lœchias of the gracilis and begoniafolia varieties, and Verbenas of the trailing habit of pulchella. Achimenes do very well in summer.

NAMES OF FRUITS (Rev. J. P. L. Pine).—Augustus Pearmain. (M. S.).—Pears: 1, Beurte d'Areberg; 2 and 4, Passe Colmar; 3, Beurte de Rance; 5, Beurte Diel; 6, Napoléon; 8, Easter Beurte. No. 1 Apple, Braddick's Nonpareil. (J. E. Betley).—Apples: 1, Lewis's Incomparable; 3, Northern Greening; 4, Augustus Pearmain; 6, Golden Knob; 7, Gloria Mundi; 10 and 12, Tower of Glammis; 11, Federal Pearmain; 13, Braddick's Nonpareil.

NAMES OF PLANTS (Aricola).—1, Goldfussia isophylla; 2, Justicia speciosa. The Heath in flower is correctly named. (C. P.).—1, Pteris sp., too young for identification; 2, Adiantum capillus-Veneris; 3, Polystichum angulare, var. proliferum. The other plant is a Solanum, but the scrap sent is insufficient for determination. (A.).—Asplenium bulbiferum, var. It should be kept in a cold house. (Fern).—1, Adiantum capillus-Veneris; 2, Ceterach officinarum; 3, Cystopteris regia; 4, Scolopendrium vulgare.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending January 27th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 21	29.797	29.767	54	45	45	45	S.W.	.01	Densely clouded; cloudy; mild at night.
Mon. . . 22	29.787	29.707	52	37	45½	45	S.W.	.28	Beisterous with rain; fine.
Tues. . . 23	30.410	30.034	50	25	46	45	N.W.	.00	Cloudy; fine; very fine; slight frost at night.
Wed. . . 24	30.553	30.529	43	27	46	45	W.	.00	Slight frost; exceedingly fine; clear and sunny.
Thurs. . 25	30.575	30.548	43	27	44½	44½	S.W.	.00	Hazy; overcast; slight frost at night.
Fri. . . 26	30.543	30.457	46	35	44½	44½	N.W.	.00	Fine throughout; overcast, without frost at night
Sat. . . 27	30.350	30.141	48	36	44½	44½	S.W.	.00	Densely and uniformly overcast throughout.
Mean. .	30.288	30.169	48.00	33.14	45.21	44.78	....	0.29	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME BANTAMS.

"Of Game Bantams actually ninety-nine pens! Why is this? First, they are easy to breed. . . . I own I think shows are becoming overburdened with these easy-to-breed miniature Game fowls. . . . I am thoroughly jealous of the number in which Game Bantams muster." I extract the above from "WILTSHIRE RECTOR'S" "First Impressions of Bingley Hall," published in your Journal of the 16th inst. Let me ask if "WILTSHIRE RECTOR" has ever been a breeder of Game Bantams. I should say, Certainly not, or he would not have designated them "these easy-to-breed miniature Game fowls;" or, if he has, his birds must have been as he says, "one as good (or perhaps, more correctly speaking, as bad), as another." I have in my time bred hundreds of Black-breasted Red and Duckwing Game Bantams, as well as all the varieties of Ham-

burghs, Cochins, Brahmans, &c.; but my experience is, that so far from Game Bantams being so easy to breed, they are by far the most difficult variety I have yet attempted. He may consider himself indeed a lucky fellow who can obtain one good bird from a hatch. Without exception, every fancier of Game Bantams that I have come across (and I think I know the majority), agrees with me that they are a most difficult variety to breed really first-class birds from.

Again. Let me ask "WILTSHIRE RECTOR" if easily bred birds would fetch £25 per pen, and cocks and hens from £10 to £15 5s. each, as we often find Game Bantams do? Nor will I allow that they are unprofitable, for they are very small eaters. They muster so strongly at every show, that the committees are bound to give them good prizes; they are so light, that the expenses of carriage to exhibitions are trifling compared to other varieties; and lastly, a really first-class bird will any day command a first-class price. Why, then, should "WILTSHIRE RECTOR" desire to see these popular pets go out of fashion, and give place to inferior Blacks and worse Sobrights? That

they may long continue to hold the high position they have so justly gained is the sincere wish of—GALLUS.

[“GALLUS” properly enough might have asked if I had bred Game Bantams; yet he, not being of my acquaintance, had no right to answer his own question by a “certainly not.”

Well, I will reply quite openly. I have been a breeder of Game Bantams, and that of recent years, but gave them up for Blacks. I have also been watching the breeding of these birds for the last two years at a house not more than two hundred yards from my own rectory, also in a town near me on a still larger scale; and I inspected a yard of some fifty birds quite recently, these being Black-breasted Reds, and I marked also the result in another instance. Now for the conclusion I came to. Duckwings I found were apt to run out of colour; the hens came sometimes salmon instead of silver-grey, and the cocks too dark, and also mottled-breasted. But the Game Bantams which appear in by far the greatest numbers are the Black-breasted Reds. At Birmingham there were sixty-seven pens of these, and only twenty-five of Duckwings; and at other shows I have seen even a greater disproportion—at small shows many Black-breasted but no Duckwings at all, or but one pen. Manifestly, therefore, when I spoke of shows “becoming overburdened with these miniature Game fowls,” it was to Black Reds that I mainly referred.

Now I aver that these are easy to breed. In proof: A friend of mine purchased a pen last spring through an advertisement in this Journal. The price was not very large, but the advertiser was an honest man—not one of the “shabby,” equivocating, deceiving gentry, so his birds were good. Every egg laid was put under some hen or other, and a vast proportion were hatched and reared. In November last I saw them, and a great number they were, yet not one had run out of feather; every one was willow-legged, and among them were prizetakers at different shows. I also aver that a large number were of equal goodness, yet this gentleman was contemplating killing them wholesale, not knowing what to do with them. Again, high prices are no guide in anything that only depends on fancy. Did “GALLUS” never hear of tulip bulbs selling for a small fortune during the tulip mania? or of the sailor who ate one and thought it a bad onion, and the enraged owner would have cut the sailor open had he but swallowed the tulip whole? Committees must award prizes for whatever varieties of fowls muster in any great number, from whatever cause. In poultry, popularity rests upon two bases—usefulness and fancy: the former a permanent basis; the latter anything but permanent.

I do not desire to see any variety of fowls “go out:” hence, though there is little to recommend them, save former fancy, I hope even Malays will not entirely disappear from our shows; and I have endeavoured to speak a word for Polish, a sort too much neglected, for surely they are very beautiful. I am sorry, likewise, to see Schrights declining in number; yet, when good, as regards the beauty of feather no kind of fowls can be compared with them for a moment; they at once attract all eyes, especially those of the ladies, who generally understand beauty of feather and colour a great deal better than we do. I am sorry that other real Bantams are by no means numerous. I am not insensible to the beauty of miniature Game fowls, although I think their beauty inferior to real Game, because in them we see power as well as courage, the might of muscle as well as the courage of will. Bantams, the so-called Game, are not. The word Bantam is now an old English word, and implies a consequential strut, broad full breast, and a drooping wing; and these the Game of course must not have; but in all other Bantams these properties are seen to perfection. I have kept all kinds of Bantams, even Nankin and Partridge. The only sort I found profitable (I am setting aside fancy prices), were the Blacks; they never wander and get killed or lost; they lay well in winter, if pullets, and I wish I had not parted with them, for from my Cochins I had no eggs in October, November, and December, when fresh eggs in Bath were 2½d. a piece, whilst from Black Bantams I always had eggs during the months mentioned. If “GALLUS” has a large number of Game Bantams for sale, I fear they will hang on his hands, or sell for little. Fancy, their only supporter, is a changeable as well as imperious deity, and looks out constantly for something new, and, lacking that, turns back to old loves.—WILTSHIRE RECTOR.]

MILDNESS OF THE SEASON NEAR EXETER.—I observed this morning, 23rd of January, my bees busily gathering pollen, from, and humming joyfully about the flowers of the laurus.

tinus, of which beautiful evergreen I have a hedge now in full bloom.—W. L. L.

NEW BOOK.

The Poultry-keepers' Manual; containing descriptions of all kinds of Domestic Poultry, with Instructions for their Management, and their Treatment when Diseased. By CONTRIBUTORS to “THE JOURNAL OF HORTICULTURE AND POULTRY CHRONICLE.” With Twenty-two Coloured Engravings and Numerous Woodcuts. London: Journal of Horticulture Office. 7s. 6d.

“NUMEROUS inquiries for an easily consulted work on Poultry, having coloured portraits of the varieties, showed that such a publication was needed. This, combined with the abundance of communications in our possession from most of the best authorities on Poultry-keeping, induced us to prepare the present volume. Its contents, therefore, commend it to all who require such a book for reference.”

To the above copy of the title-page and extract from the preface, we will only add that the volume combines information from most of the best-known poultry-breeders, and is so arranged as to be most easily consulted on any subject connected with poultry.

QUEEN ENCASEMENTS.

I AM glad to notice that your excellent correspondent, “R. S.,” has taken up the subject of queen encasements. I hope he will continue to note the cases that may occur in his apiary, and give us the benefit of his experience and observations.

Since my last communications on this subject, I have had several additional cases in my own apiary, one or two of which I shall mention; but before doing so, I may here state, that in advancing the opinions which I then did, based though they were upon close study and diligent observation, I was not unaware of the difficulties of arriving at a true solution regarding some, at least, of the cases alluded to. These were put forward in a form somewhat hypothetical. Future observations on the part of others as well as myself may probably lead to resolving some of these within a narrower compass, and, it may be, upon a simpler basis; but in order to attain this end, the subject is one which requires the closest attention, and a complete acquaintance with the history and character of the queens so treated. I quite admit, therefore, the pertinency of the remarks of “R. S.,” in calling upon me to explain “by what means” I had ascertained the ages of some of the queens referred to.

In an experimental apiary like my own, where many of my queens have in my various manipulations to pass frequently under review during the season, it is not at all impossible to note peculiarities and distinctions, not more so, I imagine, than with a Pigeon fancier, or a rose amateur, who can by the turn of a feather, or the form of a petal, see points of difference in apparently the same objects. In my apiary at present stand some thirty hives, and I acknowledge myself to possess a pretty good acquaintance with each *materfamilias* throughout, and on all occasions know as certainly when any change of government takes place in a hive, or when a young princess ascends her apian-throne, or, which is much the same, when the celebration of her nuptials occurs, as if a royal salute were fired overhead from the cannon's mouth to announce the fact. Nor do I claim to myself any extra knowledge over other close observers, if in regard to not a few even of the black monarchs in my apiary I could say, In this hive reigns a queen moderate in size, and dark and sombre in colour; in that a smaller one, but darker still, and fleet and agile; there an aged sovereign with ruffled wing and tottering step; here a lilipt, scarce distinguished in size from her less honoured sisters, the uncounted remnant of an artificial batch; and there in yonder hive reigns a monarch worthy of the name, large, noble, magnificent, “born to command,” whose every step is grace, and every movement majesty; there, too, is a worthy rival, superior far in beauty and colour, whose saffron hue and golden tinge might well claim a closer kindred to the still more beautiful Italian. No, no, I cannot admit that there are no queen distinctions, and that it is impossible for us to note them. This, then, is my reply to “R. S.” in his remarks on this subject. Every scientific apiarian should have as intimate a knowledge of the history and character of the queens in his apiary as Miss Strickland has with the Queens of England.

Those cases of queen encasement which have occurred in my apiary during the past season, I could trace, with only one exception, to the entrance of stranger bees. Of this I have not the remotest doubt, and it will be remembered this was one of the conclusions at which I had formerly arrived.

The exceptional case first. I had brought to my apiary in July last, a magnificent hive of black bees presided over by one of the largest queens which I think I ever witnessed. Its inmates I drove, and lodged in an empty Huber, and I gave the hive, teeming with worker-brood, to a Ligurian swarm. Coming from an early locality every drone had been extirpated, and no drone brood even was in the cells. To aid comb-building, I fed with honey and sugar syrup, and brood-rearing proceeded at a rapid rate. Towards the end of August I noticed symptoms of the queen's encasement. I opened the hive, and found the magnificent queen imprisoned, and in fetters, for what reason, alas! it did not appear. I simply examined the prisoner, and left her in this instance to her fate, knowing how little good sometimes follows any interference. Two days afterwards, however, observing that she was still the object of persecution, I again opened the hive and released her on two several occasions, but introduce her where I might, her reception was of the same character. I ultimately closed the hive, and left matters to their natural course. Next day the queen disappeared, and I was under the impression that she must have taken flight in disgust, as no trace of her could be found. On examining the hive I found three royal cells well advanced. I then introduced a whole swarm of bees with their queen to see what would follow. A great number were killed, and the queen was rigidly imprisoned. Seeing this I immediately cut out all the royal cells, and on examining the interior next day, I found the queen was at liberty, but the bees very excitable and furious. As I know not this queen's antecedents, I merely state the case without comments.

Another case occurred in the straw hive into which I had introduced the Ligurians above referred to, after being brought back from the heath in the middle of September. It was placed on a site occupied by bees which were previously joined to another hive. The population being Ligurian, I had reason to feel satisfied that several of the former occupants of the site had found entrance. The queen was encased, and I drove the bees to try the releasing system once more. It temporarily succeeded, content seemed to prevail, but the next day witnessed a recurrence of the same state of things. Wishing to try the effects of isolating the queen for some time, I again succeeded in extricating her from a cluster at the bottom of the hive, and confined her twelve hours in a wire cage, which I placed under the hive. After releasing her I introduced her at the top orifice, and she descended among the combs pursued by the bees. During the night the queen had escaped, as I found her next morning lying benumbed and motionless in front of the hive. I first thought she had been extruded dead, but under careful nursing she gradually revived, though she seemed very languid, and unable to fly. I returned her to the hive by the top orifice, and she was immediately pounced upon, hundreds of bees crowding around either to destroy or defend her. Next morning I found her surrounded in a cluster at the bottom of the hive. I took the cluster away and put it down on the green grass to examine more minutely their proceedings. The surface bees were excited and furious, anxious and eager to displace those beneath them, and to penetrate to the object of their concern, while those in the centre were motionless and quiescent; but there was no yielding of those beneath to either force or fury. Well, what am I to do? Shall I replace the cluster in the hive again, or shall I take a look of her hapless majesty once more, if only to see how far she has recovered from her exposure the night before, or rather how much more injured she would be by another night's encasement? The sun shone warmly out from a cloudless sky, as I began to unravel the mysterious knot. Slowly and carefully I proceeded to clear away the surrounding bees, till I came to the last few around the queen. Now is the critical time thought I, a rescue or a ruin; but so, too, thought my supposed invalided queen, for by an effort as rapid as it was unlooked for, she freed herself of her remaining trammels, and bounded away like a shot through the blue serene, to my scarcely suppressed chagrin, and inconsolable grief. I looked around as bewildered, I dare say, as a schoolboy who sees some little winged favourite escape through his fingers, and soar away never to return.

In the other instances the evidence of encasement being caused by the entrance of stranger bees was of a still more con-

clusive character, I need not repeat details. In September I shifted some outlying hives, and drove others for a like purpose into my bee-house. The position of the shifted and driven hives was such as to cause little apprehension of many bees going astray. The exterior of the bee-house, however, was so unlike their former domiciles, that for two or three days afterwards the adjacent hives were a good deal disturbed by stray bees entering them. The result was the encasement of the queens of two hives.

Apiarians may accept it as a demonstrated fact, that not a few of the queen encasements which take place in an apiary where experiments and shiftings are constantly being carried on, are caused by the unwitting entrance of stranger bees. It is quite true, as Mr. Woodbury says, that there is an extraordinary commingling of bees in every apiary without any intermeddling with them whatever—thanks to the introduction of the Italian bee for this among some other discoveries—but it is not such stragglers as these that do mischief. Very young bees find their way, I have often noticed, into hives when returning from their first flight, and once entered there they continue to dwell. Hence a black hive in close proximity to a Ligurian, is sure to procure a considerable number of yellow-jackets to adorn its ranks. A young bee, it must be remembered, is rarely refused admittance; indeed, I have for a long time past been in the habit in early spring, when happening to have any weak hive in my apiary, of seizing some hundreds of young bees as they made their appearance for the first time on the stool of some strong stock, and transferring them to the weak colony before taking wing. These additions greatly benefit a weak stock. But besides these stray young bees being found located in other hives than their own, I also admit that adult bees sometimes fraternise with their neighbours in a similar way, but in neither case are these the bees that give rise to the turbulence and commotion of a queen encasement. It is only those that inadvertently by mistake, or forcibly from experiments, or shiftings, or some such cause, enter other hives, that become their pest and terror. Such stranger bees find themselves suddenly and unexpectedly in the midst of aliens, and are not prepared to offer, nor do they seek to receive, friendly overtures. They not only are disposed to dispute the occupancy of those they commingle with, but to look upon the queen which they meet as being as much an enemy as if they found her traversing their own hive, and hence the evil consequences which ensue.

There is a curious result which follows a queen encasement, which makes it doubly calamitous. I must repeat my conviction, now strengthened by further experience, that when a queen once passes through this ordeal of imprisonment, especially if long-continued, there is the utmost danger of her forfeiting all regard from her own subjects. A mutual jealousy seems to spring up, or rather suspicion on the part of the bees, and alarm on that of the queen. So much is this the case, that the bees appear to be carried away by a kind of wild delirium when they come into contact with her, and but for the invariable encasement which ensues, I believe so terrified does the queen become that she would escape from the hive altogether, if not thus prevented. And here I may be permitted to say that I prefer the term encasement as the best applicable to such phenomena, for I am unwilling to go the length of designating all the bees that thus imprison a queen as regicides, or would-be regicides. Additional light may yet be thrown upon this part of the subject, but in the meantime I am still of opinion that the encasement itself may be intended by Nature as the very means by which the commingling intruders and disturbers of the hive may be singled out and destroyed, the colour restored to peace, and the queen's own safety ultimately secured.

I am still more unwilling to believe, because opposed, I think, to the analogies of natural law and order, that bees are actuated by regicidal dispositions towards youthful queens which return from successful wedding flights. That they are encased under such circumstances is beyond a doubt. It is sufficiently attested by Mr. Woodbury, and also by Mr. T. B. Miner, of New York, who says that "young queens are generally found in a cluster like a hen's egg during the first few days of their inhabiting their new tenement, at the entrance of the hive, or near it;" but I can neither indorse the opinion of Mr. Woodbury, that this clustering around the queen can be characterised as a regicidal attack, nor that of his distinguished German correspondent, that the workers in such a case "treat her as a stranger." I would rather seek a solution, as I said before, upon principles more in accordance with the purposes and

objects of nature. Encasements of queens are assuredly not always regicidal. I observe that "A LANARKSHIRE BEE-KEEPER," in alluding to regicidal attacks, which he says, however, he never witnessed, adds, "But this I know, that I have seen queens imprisoned by their subjects when strange bees were admitted into their hives;" and I think a former correspondent, "INVESTIGATOR," held a somewhat similar opinion. I might here suggest the motive of the bees in clustering round youthful queens, which accords at least with my own experience in the matter. I think the object may be to prevent the queen from again leaving the hive, to prevent further risks to her now more precious life, and to induce her to settle down to the maternal duties which Nature requires of her. I have seen a young queen on attempting to go abroad in such a case, seized by a couple of bees, which held her fast by the hind feet, and thus she was forced to return from outside the entrance, nibbled and followed after by several others. This queen commenced the work of oviposition shortly thereafter.

I now avail myself of this my first opportunity of returning my thanks to your valuable correspondent, "A RENFREWSHIRE BEE-KEEPER," for the kind offer which he made me through this Journal, in reference to foul brood. Did I think that my acceptance of that offer would lead to the well-meant objects he had in view, I should not have hesitated to put him to the trouble; but as the hive itself seemed to be beyond cure, I could not see that any practical good could otherwise arise by my acceptance. To others who have kindly sent me specimens of foul brood, and who have detailed their experiences in these columns, I also owe my thanks; and I may be allowed to hope that an evil, in whichever way originated, that has produced such desolating ravages as they detail, will, if not already, be speedily banished from their apiaries.—J. LOWE.

PLANTS POISONOUS TO DOMESTIC ANIMALS.

On last Saturday evening a flock of sheep (about forty), trespassed on the lawn here and ate a quantity of evergreen shrubs. During Sunday about twenty of them died, the rest of the flock seeming in a very precarious state. They ate a quantity of *Andromeda (Leucothoe) floribunda*; also, some Ivy, Laurustinus, Portugal Laurel, and Rhododendron. The veterinary surgeon who examined them thinks that the *Andromeda* is the shrub that has poisoned the sheep, as some of the blooms were found in the stomach of all that were opened.

If you will say which of the above shrubs would be the most likely to cause death to cattle eating them, you will greatly oblige. I may mention that there was no Yew that the sheep could get at. The veterinary surgeon says that there is no antidote known for the Yew poison, as it is not known how it acts on the cattle that eat it. I think that it would be very useful to a great many of your readers, if a list of all the plants that are known to be poisonous when eaten by cattle were published in your Journal.—W. G. M.

[We have very little doubt that the *Andromeda*, or *Leucothoe floribunda*, as botanists now call it, was the cause of the sheeps' death. *Andromeda ovalifolia* is fatal to goats if they eat it, and *A. polifolia* is similarly known to be fatal to sheep. They act as acrid narcotics. We think it probable that an infusion of nutgalls would operate as an antidote, as well as for the poison of the Yew and Rhododendron. The poison of the latter is so permanent that we have a record of a dinner whereat the guests were poisoned by a hare which had fed on the leaves of *Rhododendron ferrugineum*. We shall be obliged by the communication of any facts pointing out the poisonous effects of plants upon animals.—EDS.]

POLLEN-GATHERING IN JANUARY. — The bees of the stock specially noticed in page 20 were seen to bring in pollen on the 5th, 14th, and 24th inst.—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

DISTINGUISHING COLOURED DORKINGS (L. T. F. B.).—Silver-Grey Dorkings are birds of feather, and any deviation from rule is fatal. It is much easier to have of them hens than cocks. We will, therefore, describe the cock. Light almost white hackle and saddle, perfectly black breast and tail, white and steel-barred wings. The slightest deviation is a disqualification.

SILVER-SPANGLED HAMBURGS (W. M. H., Jun.).—It is quite time your pullets, hatched in May, laid, and if the dry weather lasts, they will do so within a fortnight. Snow and constant wet have upset many calculations of the sort.

SIZE OF PENS (E. B.).—The larger your pens are the better. The best pens we had were those that were made and let by the late Mr. Cooke, of Colechester. You must be guided by the number of fowls to be shown, whether two or three. Turkeys and Geese require larger pens than fowls; Bantams require them of less size. Two adult fowls should have one 3 feet high, 24 feet in width in front, and 21 feet deep from front to back. It should be lower behind than in front. Smaller pens will do, but this size is desirable.

FECUNDATION OF EGGS (Idem).—It depends on the number of hens. If numerous you must wait some time, and even then be prepared for disappointment. If but three or four, you may set them after the hens have been with the cock three days. If you have many hens your best plan will be to run them with the cock for four or five days, three or four at a time, and to set only those eggs that have been laid by these birds.

FOWLS NOT WELL (G. T.).—Your fowls will do better now. The weather has not been favourable for poultry.

OATMEAL FOR FOWLS (W. L. L.).—This can be obtained of any corn-dealer. Bruised oats are merely crushed by the machine used for preparing them for horse provender.

WHITEHAVEN POULTRY SHOW.—The first prize for Game pullets was won by John Robinson, Vale House, Garstang; and got by J. R. Robinson, Snuderland.

JERBURGH SHOW.—The cup was given to John Thackray, Petergate York, instead of Hull, as stated in the official prize list.

FOWLS, PIGEONS, AND RABBITS (Look before you Leap).—You may keep them together in the space you have. Spanish fowls and Bunt Pigeons will be as good as any others.

DORRING COCK WHEEZING (Alpha).—Give him a dessert-spoonful of castor oil, and, if needful another after two days. Let him also have bread soaked in ale once daily, and keep him out of the cold for a few days.

SHELL-LESS EGGS (King Brod and Buff Cochin).—The soft eggs dropped by your Cochin-Chinas intimate that their egg-organs are over-excited. The food you give them is much too stimulating—Indian corn, barley, and ground oats. Omit the first-named entirely, and give the barley and oats on alternate days, and mashed potatoes instead of one feeding of corn daily. Give them a daily supply of lettuce leaves, and instead of crushed oyster-shells "now and then," have a heap of brick-jars' limy rubbish that they can visit whenever they please.

BOOK (J. Bennett).—The price is 5s.

LIGURIAN BEES (A. B. C.).—If the queens of your stocks are pure, they will remain so in the midst of any number of black bees. It is with young queens that deterioration commences, and in such a case as yours, we know of no better mode of proceeding than that recommended in reply to "M. S.," in page 455 of our last Volume.

BEE-STAND (A Subscriber).—No one that we know of manufactures bee-stands for sale. Any carpenter could make one. In "Bee-keeping for the Many," which you can have from our office free by post for five postage stamps, you will see drawings of the most simple and best stand.

ASPECT FOR HIVES—REMOVING HIVES (Squib).—We believe aspect to be of but secondary importance in bee-keeping, and if well sheltered from prevailing winds, should not object to hives facing the east. The best mode of removing bees a short distance is to subject them to an intermediate banishment of a few weeks to a distance of—say a mile and a half. If moved direct, it is best done towards the end of a long frost, as bees after a certain period of confinement seem in some measure to forget the original position of their home, and adopt a new situation with more facility than at other times. Another mode of overcoming this difficulty was described by "R. S.," in page 204, of our last Volume. A verandah or any similar erection against a wall, of sufficient width to admit of passing behind the hives, is the best kind of bee-house that we are acquainted with. We ourselves have no bee-house whatever, but protect both hives and saps with hive-roofs and outer cases as described and delineated in pages 17 and 18 of the fifth edition of "Bee-keeping for the Many."

BUTTER NOT YELLOW IN WINTER (W. S.).—We need hardly say that the only legitimate way to obtain sweet butter of a good yellow colour, is to let the cows have fresh green food, but as this cannot always be done in winter, artificial means are resorted to, and one of the most innocuous of those used is the juice of carrots, which after being grated are squeezed through muslin or something of the kind, and the juice added to the butter after the last washing. Very little will suffice. It is not by any means advisable to add too much of this colouring matter, as at the best it gives but a dead yellow colour; a little, however, improves the appearance, and we could never discover the least taste of carrot in the butter. A larger quantity of carrots is sometimes put into the cheese, the effect being the same, only the buttermilk is coloured also. We have known some chemical substance used instead, but would not recommend it; neither would we advise much of the carrots, except in cases where the eye has to be pleased instead of the palate. No management on the part of the dairymaid can make butter yellow in winter, when cows are fed on dry hay alone. The only means available is to strain the cream or the butter in some way, and some secrecy is often enough maintained about the adulteration. Of course, all cream is not alike, and the food of the cows gives certain properties to the milk and cream which no management on the part of the dairymaid can entirely alter. She may, it is true, spoil good cream, but feeding cows on cabbage, turnips, and the like imparts a flavour to butter not easily got rid of, or where it is, the result is by no means a good article.

POULTRY MARKET.—JANUARY 29.

We have but a moderate supply of everything, with an average demand and fair prices.

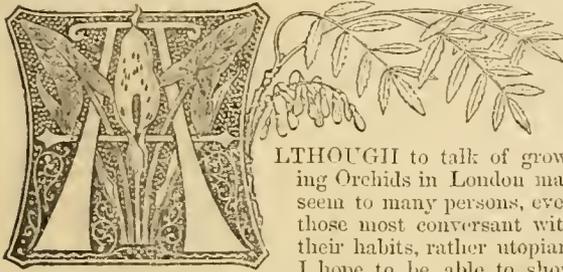
	s.	d.	s.	d.		s.	d.	s.	d.		
Large Fowls	3	0	to	3	6	Grouse	0	0	2	0	
Smaller do.	2	0	"	2	6	Partridges	1	6	"	1	9
Chickens	1	6	"	1	9	Hares	3	0	"	3	6
Geese	6	0	"	7	0	Rabbits	1	3	"	1	4
Ducks	0	0	"	0	0	Wild do.	0	8	"	0	9
Pheasants	2	0	"	2	3	Pigeons	0	9	"	0	10

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 6—12, 1866.	Average Temperature near London.			Rain in last 99 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
6	TU	Azalea indica Perryana.	46.1	32.5	39.3	19	33 af 7	56 af 4	mor. 0	10	21	14 22	37
7	W	Azalea indica Triumphans.	46.4	32.7	39.6	20	31 7	53 4	32 0	28 10	(	14 25	38
8	TH	Brachysema latifolia.	45.4	32.2	38.8	20	30 7	0 5	32 1	0 11	23	14 28	39
9	F	Brachysema undulata.	45.0	31.3	38.1	15	28 7	1 5	29 2	37 11	24	14 29	40
10	S	QUEEN VICTORIA MARRIED, 1840.	44.5	29.7	37.1	14	26 7	3 5	26 3	after.	25	14 30	41
11	SUN	SHROVE SUNDAY.	44.3	27.8	37.1	17	24 7	5 5	18 4	12 1	26	14 31	42
12	M	Boronia pinnata.	44.9	29.7	37.3	16	22 7	7 5	4 5	11 2	27	14 30	43

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 45.2°; and its night temperature 31.1°. The greatest heat was 65°, on the 16th, 1831; and the lowest cold 10°, on the 5th, 1830. The greatest fall of rain was 0.67 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

ORCHID GROWING IN LONDON.



ALTHOUGH to talk of growing Orchids in London may seem to many persons, even those most conversant with their habits, rather utopian, I hope to be able to show

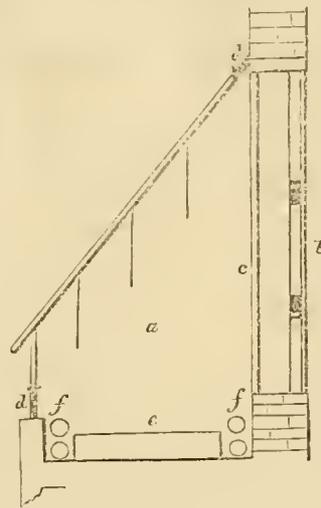
that it is not only possible to cultivate these lovely flowers in the heart of our great city, but that, with care, many of them may be flowered as well in London as elsewhere; and it is with the hope that others may take up this interesting subject that I am tempted to record my own experience in the matter, slight though it may be.

Some time ago circumstances compelled me to reside in London for the greater part of two years, and as it was impossible for me to live, even there, without flowers, I determined to try my hand at cultivating some of my favourites. Of course I was laughed at by my botanical friends. I was told that I should never succeed; it was impossible to do so: It was waste of time, with many like encouraging remarks, but I had made up my mind to try; I had seen Wardian cases with plants thriving in them, even in London, and I felt convinced that I should succeed.

But what sort of plants was I to grow? for I soon found that very few flowers long continue in health even in Wardian cases, and in the part of the town where I was residing nothing would thrive without some such protection. Here was a difficulty, but on mentioning it to a friend, he said, "Why do you not try your favourite Orchids?" I had two in a small case in my office in Great Tower Street, which lived and grew for a long time." The hint was not thrown away upon me, and I soon found the truth of what he said; for certainly, excepting Ferns, Orchids seemed to thrive better in a heated Wardian case which I had than anything else, and as I have always had a passionate love for these beautiful flowers, and had been very successful with them in the country, I resolved to devote my spare time to their culture, and see what could be done.

The first matter to be considered was, where to grow them. In Wardian cases, though they lived and grew a little, they did not thrive to my satisfaction; besides, I could not have a case large enough to hold many in my window, nor was there sufficient light and air in a room. I therefore determined to try some other plan, and after turning it over in my mind, I fixed upon the following:—Outside my sitting-room window was a flat space, covered with lead, which formed the top of the doorway, it was 6 feet by 3, surrounded by a low wall, 8 inches high, of brick and cement work on three sides, the house and window forming the fourth. This place I fixed upon as a

favourable one on which to erect a sort of large Wardian case, or small greenhouse, and my window being large, reaching nearly to the ground, I could pass through it when needful into the miniature house. When finished it resembled a small lean-to hothouse, 6 feet long, 3 feet wide, 6 feet high at the window, sloping to 2 feet in front. It was heated by hot water from a small boiler in the sitting-room fireplace, which worked uncommonly well. The following sketch will explain more fully my meaning.



a The case, 6 feet long by 3 feet wide.
 b Window of sitting-room.
 c A glass door, with 6 inches between it and the window, in order to prevent the damp finding its way into the room.
 d, d Ventilators.
 e Body of the case, 6 inches deep, filled with sand, the bottom being well drained.
 f, f Hot-water pipes.

Ventilation was effected by a narrow shutter in front at d, 18 inches long by 6 inches wide, which could, when required, be shut up perfectly air-tight, and a narrower one, of similar construction, in the roof at d. Inside each of these shutters was a frame, fitting over the space which was left exposed when the ventilators were open, containing six or eight folds of fine network made of wool, which could be changed as often as necessary. Through this material the air filtered its way, if I may use the expression, the network preventing all soot, blacks, &c., from entering, and performing the part of a respirator to the case.

Even with this precaution I found it did not do to give much air in the day-time, the air then, do what you pleased to it, being impregnated with deleterious matters which told in time on the Orchids, so that I always contrived to give air by night, when it is purer, particularly towards early morning before fires are begun to be lighted. I believe this to be a vital point in growing Orchids in London. Still, the great point after all is to grow only those plants which require the least air, and this I soon found by experience; some Orchids, such as the Cattleyas, Lælias, Odontoglossums, &c., never doing well in town; while others, such as the Aërides, Dendrobiums, Stanhopeas, Vandas, &c., with plenty of heat and moisture, thriving as well there as anywhere, and flowering profusely. Their treatment was much the same as that which they received in the country Orchid-houses, excepting that they were made to do with as little air as possible.

The temperature of the house was, in spring and summer, by day 85°; by night 70°; late in autumn and in winter, 65°

by day, and 60° by night. This was without sun heat; with the sun the temperature was allowed to rise several degrees, but then the house only received the morning and evening sunlight. During the spring and summer months the house was kept very moist, the sand, pipes, &c., being often watered, but I generally contrived to have the plants nearly, if not quite, dry once in twenty-four hours. If there was too much steam it was let out by the top ventilator, but this was rarely necessary. In winter, of course, the case was kept drier.

I purpose concluding this paper with the names and descriptions of a few sorts which I found by experience to thrive well under such circumstances, and which I have myself successfully grown in London. There are, beyond a doubt, very many others which will do equally well, but which have yet to be tried.

ÆRIDES CRISPUM and **VIRENS** are both excellent plants for a London Orchid-house, although most of the *Ærides* will thrive there. *A. crispum* and *A. virens*, however, grow and flower well without much air. The blossoms of the former are white, tipped with pink, and are abundantly produced in July and August. Those of the latter are of a lovely peach colour, and appear from April to June. They both succeed best grown in pots.

AGANISIA PULCHELLA.—A dwarf plant with pretty white and yellow flowers, produced at different times of the year. Succeeds best in a pot.

BRASSAVOLA ACALUIS.—A Rush-like plant with large white flowers. It generally blossoms in September or October. Requires to be grown on a block.

BROUGHTONIA SANGUINEA.—A lovely evergreen Orchid, with beautiful spikes of crimson flowers, produced freely during the summer. It requires to be grown on a block, with a little moss round the roots.

CALANTHE VESTITA *VERBO-OCULATA*.—Rather a large plant for a case, but one which grows well. It produces its delicate flowers on long spikes during the winter months; they are white, with a blotch of red on the lip. It is best grown in a pot.

CAMAROTIS PURPUREA.—A most lovely Orchid with rose-coloured flowers, freely produced from March till June. It thrives best grown in a basket, and requires plenty of heat and moisture.

CEOLOGYNE CRISTATA.—A splendid dwarf Orchid, with flowers 4 inches across. It thrives well in London, and blossoms in the early spring. Pot culture.

DENDROBIUMS.—Many of the *Dendrobium* tribe thrive well, although some are rather shy of flowering. *D. formosum*, *D. Lowii*, and *D. pulchellum* are very good ones for the purpose, but *D. Jenkinsii* is the best. It is a dwarf plant, with beautiful buff flowers, most freely produced one or two at a time. It requires a small block on which to grow it, without any moss, and the plant should be hung up close to the glass.

HENTLEYA MARGINATA.—A pretty evergreen Orchid, flowering constantly; the blossoms are pink, purple, and white. It should be grown in a pot.

LELIOPSIS DOMINGENSIS.—A really beautiful little plant, with rose-coloured blossoms produced at different times of the year. Thrives uncommonly well in a confined case. It should be grown on a bare block of cork wood.

PERISTERIA ALATA.—No Orchid thrives better in London than this noble plant; unfortunately, its size is against it. It flowered with me well, and its beautiful blossoms, bearing such a wonderful resemblance to a dove, were always greatly admired.

PHALENOPSIS AMABILIS and **GRANDIFLORA** are so well known that any description is unnecessary. They thrive and flower well, particularly *P. amabilis*. They should be grown on blocks of wood.

SACCOLABIUM CURVIFOLIUM and **MINIATUM**, both excellent plants for a London Orchid-house. The former is a small plant, with orange-coloured flowers freely produced in May and June; the latter is equally small, with spikes of red flowers produced in February, March, and April. Both should be grown on small blocks without moss.

SOBRALIA MACRANTHA.—A noble Orchid, with large crimson and purple flowers, nearly 7 inches in diameter. Blossoms during summer. Pot-culture suits it best.

SOPHRONITIS GRANDIFLORA.—One of the best, if not the very best, for a London Orchid-house. The blossoms are of a lovely scarlet colour, produced during the winter months, and lasting long in beauty. It should be grown on a block.

STANTONIAS.—Many of these curious and beautiful flowers thrive very well in a case, particularly *S. aurea*, *S. insignis*,

and *S. tigrina*. They should be grown in shallow baskets, as the blossoms generally push their way out through the bottom. They are very curious-looking, and make a good variety.

VANDA SUAVIS.—A noble plant, grows well and flowers profusely in a case. The blossoms are large, of a beautiful white, spotted with crimson. Either basket or pot-culture will suit it.—J. H.

MANGOSTEEN CULTURE.

HAVING been applied to for advice and further instructions, by several persons who happen to possess small plants of the Mangosteen, but who complain that they have no house of a sufficiently high temperature in which to grow them, I thought it might be as well to say a few words on the subject through the medium of your valuable Journal.

All who are fortunate enough to possess well-established plants should at once commence starting them into growth. For this purpose, if there is no stove where they can be kept very hot and close, a hotbed may be made up of good stable dung, and the plants put under a frame, keeping them close to the glass. It is important that the dung should have been thoroughly turned and mixed, and it should have lain in a heap for some time previous to being used. The bed should be made 5 feet high, first taking the precaution of having it well drained underneath, and, when it is a little settled, the frame may be put on, and the dung covered 6 inches deep with sand. As soon as the furious heat is over, the Mangosteen trees may be put in, taking care to ventilate freely at first; if the heat is too much the pots should not be plunged until all fear of burning is over. The top temperature may range from 80° to 90°, and the bottom heat from 5° to 10° higher. The trees must be kept moist and close, giving little air, and keeping up the heat by linings. They will soon begin to grow freely, and they must be kept growing *without a check* all the summer, for if once checked, though but for a few hours, the chances are ten to one against their restarting, and thus a season may be lost. Should flower-buds appear the first summer they must be carefully picked off; this will materially strengthen the trees, and cause them to throw out fine strong shoots.

The grand secret in growing the Mangosteen is to keep the trees growing vigorously, and, if this is done, sooner or later they will flower and fruit—it is only a question of time; whereas, if they are grown in an ordinary stove temperature, they will live, and even grow slowly, but never bloom. This I have repeatedly proved by experiment, and I am certain that all the failures one hears of arise from this one cause. I do not hesitate to say that the Mangosteen may be fruited as easily as any other tropical fruit, but then it must have every ray of light our skies afford. It must be grown rapidly under a high temperature, have plenty of water and weak liquid manure, and not too much air.

Unless the Mangosteen is in a very vigorous state of growth it will never show bloom.—J. H.

We think it due to our readers, as well as to "J. H.," to state that he cannot send plants to any one of the Mangosteen, which he has received from Java and Madras—they are very expensive. See advertisement.—EDS.]

POINSETTIA PULCHERRIMA CULTURE.

At page 460 of your last Volume I note some excellent remarks on the cultivation of the *Poinsettia* from your correspondent Mr. Edwards, and to which I wish to add a few observations derived from my own experience. This interesting and important winter-flowering plant is capable of a much greater degree of perfection than is generally known. My mode of treatment differs somewhat from that recommended by Mr. Edwards, and is as follows:—

After the plants have had six weeks' or two months' rest by withholding moisture, I cut them back to within half an inch of the old wood, keeping them in the stove until they have started into growth. About the beginning of May they are shaken out, potted into smaller pots, and placed in a cold frame as near the glass as possible, keeping them close for a few days, when air is gradually and cautiously admitted. After they have filled the pots with roots they are repotted into their flowering-pots, which are from 6 to 8 inches in diameter, and as the warm days advance the frame is slightly raised by a brick under each corner, keeping the lights off excepting when

the sun is very hot, and syringing overhead in the evenings of hot days, but avoiding saturating the ball, as they are impatient of too much wet, at the same time they should never be allowed to flag. In July they are stopped, and they are continued in the cold frame until October, when they are removed into a stove with a temperature of from 65° to 70°. About the middle of November they show flower, and, if duly attended to, they will continue to bloom in perfection until the middle of February. By the mode of treatment just described I have at the present time, January 24th, plants varying from 6 to 30 inches in height, with flower-heads measuring from 12 to 14 inches across.—JAMES LANE, *Manchester*.

THE GLADIOLUS.

I HAVE no hesitation in saying that both in Scotland and Ireland horticulturists are far in advance of us in England in the attention that they have given to this beautiful autumnal flower, and in the extent of its cultivation, as well as the encouragement afforded to it as an exhibition plant. As the present is a favourable season for obtaining bulbs, it may, perhaps, give an impetus to its cultivation, and be a help to some of your readers, if I give a few notes concerning it, which a tolerably long acquaintance with it somewhat entitles me to do.

That the cause of the non-cultivation of the Gladiolus in the south of England arises from the losses that growers have experienced I have no doubt. Some few years ago a disease of great virulence, and in some places of most destructive character, manifested itself amongst their collections; I knew one that cost nearly £100 that was almost destroyed, and others so materially diminished that the growers lost all heart and abandoned them; and that this disease still exists I have had proof again this year. Personally I have never suffered severely from it. Gaps have been always more or less found in my beds, but nothing to deter me. I am inclined to think that a good deal arises from the non-drying of the bulbs, although, as in the Potato disease, one can really say very little about it. On taking up my bulbs this year I found some of them marked with black spots, apparently indicative of disease. Now, these bulbs I shall put into a nursery, and on no account admit amongst my others. My own opinion is, that although they may push both stems and roots (and some of them seem inclined to do that already), yet that they will eventually rot. Some of them that were worse than others I have already noticed to gradually become more and more black, and they will have to be thrown away. High cultivation may have something to do with it; and although I think the idea with which some started—that the poorer the soil the better it was suited for the Gladiolus, was a mistake, yet I should be careful not to introduce fresh manure into the beds at the time of planting. Let the beds be well manured in the autumn; perhaps, indeed, if the time would allow of it, it would be better to lay the manure 6 inches below the surface, as is done by Ranunculus growers, and then not to put any manure into the bed itself. Besides this, I should be careful to lay each bulb in a bed of white sand when planted, and to cover it with it before again raking over the soil. This may seem an unnecessary trouble; but as the Gladiolus is a florists' flower, and as the new varieties "come out" at 8s. and 10s. a-piece it is surely worth the trouble.

The Gladiolus requires little management in the after-growth. Should the season be a very dry one it will be well to water the beds, but in ordinary seasons this will not be necessary. One difficulty has always been to keep the beds in good order when the flower-stems attain any length, as they are then so apt to fall about. To stake each is not possible, and would, besides, make the bed look very stiff. The plan adopted by my friend Mr. Lombard, of Dublin ("Autis"), is one which I followed last year—namely, to obtain narrow strips of the border of druggat as it is torn off before being made up, then to drive posts into the ground at each row, nail the druggat to these, and then weave it in and out amongst the stems. In a row containing forty bulbs I have four of these stakes, and sometimes when a stem is very tall I also affix a smaller stick to it. There are three rows of this druggat, and by this means all the stems are kept in their place, while the softness of the material prevents it from rubbing the stems. There must be, of course, two strips so as to enclose the stem in a sort of loop.

In putting up stands for exhibition there is a great variety

of methods adopted. I think myself that the holes should not be behind one another, but in quincunx fashion, as then one bloom would not hide the other; and that either no foliage should be permitted, or else only a leaf or two of the plant itself; but perhaps the former plan would be preferable. I would expressly prohibit their being shown in separate pots, in ginger-beer bottles, in Hyacinth-glasses, or anything of the kind, and neatness should certainly be the order of the day. The plan adopted by Messrs. Dickson, of Newtownards in Ireland, the best growers, or at any rate the best exhibitors, in that country, is to place wire at the back of each row and tie the stem to it. The wire, painted green, is hardly noticeable, and each is kept in its place.

So far as to cultivation, and now as to varieties. Their name is legion, but a great many are utterly unworthy of a place in a bed. Years ago they might have done very well; but the progress has been so great, that it would be as great folly to grow such flowers as Aglaë, Hélène, Daphne, and others, as it would be to grow the Fuchsias of a dozen years ago. There are two sources whence new varieties have been obtained—France and Ascot, the former mainly consisting of the flowers of M. Souchet, the latter of Mr. Standish exclusively. Other growers are now raising seedlings, and I dare say by-and-by we shall find many of them in our catalogues. My friend Mr. Lombard speaks very favourably of some of his, and my neighbour and friend, Mr. Sladden, of Ash, has also some excellent varieties. I shall give a list of such fresh ones as I know to be good, referring my readers to the catalogues, French and English, for the descriptions, marking at the same time with an asterisk the very best bright-coloured flowers, and with an obelisk the best of the lighter and more fancy varieties

*Achille	*Linné
Belle Gabrielle	Madame de S'-vigné
Berthe Rabourdin	+Madame Furtado
Canari	Madame E. Verdier
+Charles Dickens	Madame Péreire
Cherubim	Madame Rabourdin
*Comte de Morny	+Madame Vilmorin
Decandolle	Marie Dumortier
+Dr. Lindley	*Meyerbeer
*Due de Malakoff	*M. Lebrun d'Albane
+Eduvia	+Peter Lawson
El Dorado	+Pline
Endymion	*Prince of Wales
+Flora	*Princess of Wales
*Fulton	+Reine Victoria
+Impératrice Eugénie	Raphael
*James Carter	Rubens
*James Veitch	*Stephenson
James Watt	+Stuart Low
John Bull	+Walter Scott
+Le Ponsin	

I say nothing of the new varieties, against which we must write "not proven" as yet. Mr. Standish has raised a large number of fine seedlings; but instead of waiting till he has had a stock of each, he has let them out when he has had a few bulbs, consequently it is very difficult to obtain them. Save in his own catalogue I have only seen one, Messrs. Barr and Sugden's, in which any of them appear. Amongst the best are—

*Samuel Weymouth	Beauty of Bagshot
*Eleanor Norman	*Lord Clyde
*Dr. Hogg	*Joseph Meston
*Mrs. Dombrain	Viola
*Miss Howell	Mrs. E. Nott
Scottish Chief	*Sir James Clark
J. W. Lane	Lucy Neal
*Norma	Lucifer

I have marked with an asterisk those that I consider very good; but Mr. Standish's catalogue contains a large number, from which a good collection can very easily be selected. It is very much to be desired that the number of amateurs should increase. There ought to be a much larger display at the autumn Show of the Crystal Palace than there is. I can bear witness to the interest that they excite amongst the visitors.—D., *Deal*.

DEATH OF MR. MAJOR.—It is with regret that we have to record the death of Joshua Major, Esq., landscape gardener, of Knowsthorpe, near Leeds. The deceased gentleman held a prominent position in his profession, and was the author of several valuable works. In 1829 he published a work entitled, "A Treatise on Insects Most Prevalent on Fruit Trees;" in 1852, "The Theory and Practice of Landscape Gardening," an important work, which met with high and deserved encomiums from the public press; and in 1861, with the assistance of his son, who succeeds him, "The Ladies' Assistant in the

Formation of their Flower Gardens," a work designed expressly to meet the prevailing taste for the bedding-out or grouping style. He was also a frequent contributor to the "Gardener's Magazine," under the conductorship of that eminent man, Mr. J. C. Loudon, who highly appreciated his plans and papers on landscape gardening and other subjects. He delighted in works of philanthropy. He assisted in the formation of the first Sunday school in Leeds, of which he was superintendent for many years; and all religious and charitable institutions he took great interest in and actively promoted. His personal qualities were of a high order. He was of a cheerful disposition, simple in his tastes and habits, and impressed all who had the good fortune to know him as being a thoroughly kind-hearted and estimable man. He was highly appreciated by his workmen; and as an evidence of this, six of them served him fifty, forty-two, forty, thirty-two, twenty-nine, and twenty years respectively. After upwards of half a century devoted to his profession with an arduous and perseverance rarely equalled, he died on the 26th of January, at the advanced age of seventy-nine years.

ROSES.

I THANK Mr. Robson for his appreciation of my Rose articles. I agree with him that Roses on their own roots, in suitable soil, highly cultivated, and well watered, succeed well. Still, Roses are volatile flowers, and one cannot predicate a universal of them. Some that will not do well on any stock will succeed very well on their own roots, and *vice versa*. The character of the soil and of the summer affects some. Roses on their own roots, and also on the briar, require better soil than those on the Manetti; they also need more manure and more water. On their own roots, when well established with firm roots, they will withstand more severe weather than those on the briar or Manetti. They have this advantage also, that if the wood of the current year is injured by the wind beating off the foliage (the lungs), or by blights or fungoid diseases, you may in the year following cut them down close to the ground.

Mr. Robson says that Roses on their own roots are not so affected by aphides as the Manetti or briar Roses. Probably this arises from their slower and less succulent growth. Both fungi and aphides take hold of the young folicles, which, in Roses on their own roots, may be of a less succulent or less tempting character. I find here that Roses on the briar are not so fine as Roses grown on the Manetti. I have comparatively few on their own roots to draw a comparison by. I have fine plants of Souvenir de Malmaison on their own roots and also on Manetti. I see no difference between them. I have also a number of plants of Triomphe de Rennes—a most first-rate Rose, which is never out of bloom here, and never has a blind end—on its own roots, on the briar, and on Manetti. I cannot tell which is best.

I observe that Mr. Robson prunes in winter. I have for an experiment pruned this winter, beginning at Christmas, every Rose here. I have just finished. This may be too early; but I am satisfied that, in order to meet the shows, which are far too late for a well-managed rosery, we cut them back too late. Properly speaking, the time to cut them is when the eyes look full and fresh. It is true, the spring frosts may cut off the first shoot; but that matters not, as there are usually two other eyes more or less dormant. These will start later and synchronously, and one of them may be cut off. Usually from the 10th to the 15th of March is the time to cut back Perpetuals. Teas want but little cutting, and should be cut later. Hybrid Chinas and summer Roses may be cut back in February. Tea-scented Noisettes against south walls may be cut back earlier than any of them, if blooms are desired in May. I want not the Yellow Banksian. Solferino, Gloire de Dijon, Triomphe de Rennes, and Celine Forestier—four admirable yellow Roses—begin here in May, and never stop till winter is severe. They are hardier than Teas, and bear a greater profusion of bloom. I have put Gloire de Dijon and Triomphe de Rennes among the Tea-scented Noisettes, because they appear to belong to that class. M. E. Verdier puts the former among the Noisettes, and the latter among the Teas.

With regard to Manetti suckers, it is the fault of the planter. Briar suckers give great trouble here, but I hardly know what Manetti suckers are. They rarely come from the roots, and rarely from the stock after the first year. It is seldom that they spring from that here. The way to plant them is as

follows: Open your trenches, and put rotten dung along the line; put in a little earth on that, then put the plant on it, and cover with earth and dung alternately, treading it in hard, and close against the stock, till you have risen 2 or 3 inches above the point of union. By the exclusion of the air the eyes in the stock will die. By planting the Manetti stock above ground, or by admitting air, you will have a "furze brake" of Manetti instead of Rose wood. It is the easiest managed and least troublesome stock in the world. Before planting Manetti Roses look over the stock, and cut out such eyes as you see.

This leads me to Mr. Robson's particular request in the last paragraph of his article with regard to Tea Roses on their own roots. Mine is not Tea Rose land, nor is the place adapted for them. I know but little about them. Tea Roses out of doors are out of bounds. The finest grower here is Sombreuil on its own roots. I have no healthier or harder Rose at this place. It never blights, and carries its foliage in the most severe winters. I have it good also on the two other stocks. Elise Sauvage is good on the Manetti: a strong plant on its own roots has died. I have these good on Manetti—Adam, Rubens, and Elise Vardon. I have of Devonensis several plants, good on their own roots. La Boule d'Or is very good on the Manetti, and is one of the hardiest. It produced at one time in summer twenty-three blooms, which opened well. It also bloomed well in September. Usually it is a hard opener. I have only one other Tea Rose, the gift of Mr. Hollingworth—La Sylphide; it is on its own roots and does well. I have no doubt that if you take the whole body of Teas, and mean to keep them permanently out of doors, that it is best to have them on their own roots, taking great care of their roots for a winter or so. After that, unless in the case of such delicate Roses as Elise Sauvage, you need not fear the winter more for them than for any other Roses. If their wood is injured you can cut them to the stump, and they will be the better of it. Mr. Hollingworth, of Turkey Mills, Maidstone, would be better able than I am to speak on this matter.—W. F. RADCLIFFE, *Tarrant Rushton*.

THE MODERN PEACH-PRUNER.—No. 21.

VARIATIONS OF PEACHES AND NECTARINES FROM SEED.

(From the Fruit Record of Sawbridgeworth.)

THE great increase in the number of varieties of the Peach and Nectarine which are now cultivated is due to the introduction of orchard-houses. By these means a long succession of fruit is obtained. Very early and late sorts thus matured are of immense advantage. Of course, with the increased number of sorts the difficulty of proper selection keeps pace. It is, therefore, necessary to add a list of choice kinds. The Peach-fancier, however, can now raise varieties from seed for himself, and by judicious fertilising obtain new sorts, the fruiting of which will at least be a source of infinite pleasure. Having myself experienced this satisfaction, and successfully fruited some fine Georgian varieties (such as Exquisite, Golden Purple, Canary, Thomas's Late, Baldwin's Late, and Stump-the-World), besides holding a number of fine seedlings as yet unfruited here, it occurred to me to obtain further information on this interesting point; and the answer of Mr. Rivers is as follows:—

"The seedlings of 1865 were about two hundred in number. Their qualities and deviations from the parent stock have been accurately noted down. They are numbered for reference, and dates of ripening added.

"No. 1. August 10th. An orange Nectarine from Fairchild's Early. Liable to crack.

"No. 2. August 10th. A seedling from Early York, but having leaves with glands, and thus not liable to mildew. Flowers large, like the parent, and the only one out of twenty which deviated from the parent stock.

"No. 3. Oct. 1st. A seedling from a yellow clingstone. Small but rich, with large flowers.

"No. 4. Sept. 20th. A very large clingstone from Early York, in the third generation. This is a remarkable variation, with the large flowers of the race.

"No. 5. Sept. 4th. A Peach raised from the Balgowan Nectarine. Small, rich, with small flowers.

"No. 6. August 16th. A large Peach from Pêche D'oniaux. Of a delicate cream colour, slightly tinted with red under the skin; firm flesh, and delicious aroma. The parent I found in a small nursery in Brittany as a robust standard. This remarkable Peach has been since named Dr. Hogg, and is first-rate.

"No. 7. August 18th. A large and deep crimson seedling from Belle Bausse, differing from it in its flowers. Called the Crimson Mignonne.

"No. 8. August 20th. A very large pale Peach raised from a white Nectarine, itself from the New White Nectarine, so that this Peach is the third generation from a Nectarine. Flowers small.

"No. 9. August 10th. A large early seedling from Early Albert, which was raised from an early Belgian Peach called Montagne précoce. A very valuable early Peach, called by the Fruit Committee the Dagmar Peach. Flowers small.

"No. 10. Sept. 18th. A Peach raised from that large sort, Pavie de Pomponne, and small, with its rind of a pale straw colour, without the least red tinge. I mention this to show the great diversity of character often originating from the same stock, as will be seen presently. Exquisitely sweet. Flowers small.

"No. 11. A large pale yellow seedling from Royal George. Flesh remarkably juicy like its parent, and totally unlike the yellow American and south of Europe Peaches. It has none of the Apricot flavour. Called the Golden Royal George. Flowers small.

"No. 12. August 12th. A medium-sized melting Peach, seedling from Hunt's Tawny Nectarine. Named by the Committee the Early Alfred Peach.

"No. 13. Sept. 30th. A very large cream-coloured clingstone from American Heath-eling. I mention this clingstone, passing over many others, as being, unlike its parent stock, very juicy. Flowers small.

"No. 14. August 10th. The Early Silver Peach, the first generation from the New White Nectarine. One of the most beautiful Peaches. Skin pale silver, pink-tinted. It is the parent of many seedlings, all of high character.

"No. 15. Sept. 8th. A large late Nectarine from the Elruge, with the Stanwick flavour. It is most curious to note the influence of the Stanwick on the flavour of seedlings, as if the pollen of this peculiar sort had effected a radical change in their character, reminding one of the introduction of the Black Cap Raspberry from America, which has stained all our autumnal Raspberries. Flowers small.

"No. 16. August 28th. A large orange Nectarine originating from Hardwicke Seedling, which is of a totally different character, and itself also differing from its parent the Elruge. Flowers large.

"No. 17. August 26th. A large green Nectarine, a free-stone, raised from the Roman, which is a clingstone. The flavour is much influenced by the Stanwick cross.

"No. 18. A large seedling Peach from the Noblesse. Much like its parent in texture, but, unlike it, has glands, and thus not liable to mildew, which all the glandless Peaches are. To keep it in its class it is called the Alexandra Noblesse. Flowers large.

"No. 19. July 11th. A remarkably early seedling Peach, pale, red-tinted, medium size, melting, and juicy. Raised from a Nectarine a seedling from New White (the Early Silver Nectarine). This Peach is, therefore, the third generation from the New White Nectarine. This is a remarkable deviation in every way.

"No. 20. July 14th. A medium-sized Peach, marbled with bright red, juicy, and rich. Raised from Early Albert, and likely to be of great value as an early sort.

"No. 21. July 14th. A large pale Peach like the Noblesse, melting, and racy. Raised from Early Silver, and the third generation from New White Nectarine. Decidedly the finest large early Peach known, and with the two preceding, being ripe in July (three weeks before the Early York), likely to be of great value; and probably in Guernsey with skill might be ready by the end of June, when only forced Peaches are to be met with. Called the Early Rivers Peach. Flowers large.

"No. 22. Sept. 20th. A Peach, measuring 12 inches round, pale straw, rosy cheek, firm yet juicy flesh, and rich aroma. Raised from Princess of Wales, and so third generation from Pavie de Pomponne. One fruit was ripe, and submitted to the Fruit Committee at South Kensington, and it received a first-class certificate. Named Lord Palmerston. Flowers large.

"No. 23. Sept. 20th. A large melting Peach. Skin beautifully marbled; flesh pale yellow, juicy, and excellent. Raised from Pine Apple Nectarine, and the third generation from the Pitmaston Orange. A remarkable variation. Its parent and grand-parent produce the most beautiful, large, bright flowers of all. This has given us small flowers.

"No. 24. Sept. 6th. A medium-sized Peach, with a bright

red cheek. Raised from Hardwicke Seedling Nectarine. The parent has large flowers, but this one has them small.

"No. 25. Sept. 6th. A Nectarine of the largest size, juicy and rich. Raised from Prince of Wales Nectarine, itself a seedling from a Peach. Earlier and much larger. Flowers small.

"These extracts from my Fruit Record show the extraordinary changes wrought by cross-breeding, either by accidental fertilisation by insects, or, as it seems to me, by 'breeding in-and-in'—i. e., by selecting varieties generation after generation, and thus conveying the peculiar qualities appertaining to a race. Seedling No. 22 is an illustration of this. In making my collection of every kind of Peach known in Europe and America, I some years since received that largest of all Peaches, Pavie de Pomponne. Owing to its great size and to its beautiful Rose-like flowers I always felt much interest in it, but its fruit was seldom fit to eat. It was not till 1857 that I thought of raising seedlings from it, for I had slight hopes of raising a melting Peach from a clingstone. I planted, however, some stones; one tree grew, and produced melting Peaches, rather late, but of good quality. It was named the Princess of Wales. This variety has much of the robust habit of its parent, and gives the same grand flowers. The seedling raised from this departed widely from the parent stock, producing small flowers and melting fruit, but not large. In 1862 stones of the Princess of Wales Peach were planted, one of which produced fruit in 1865. This seedling gives fruit firm like its original ancestor, though a melting Peach. This is a case of adaption to race.

"In 1815 the late Mr. Williams, of Pitmaston, planted stones of the Elruge, which has a white flesh and small flowers, and one of these produced a tree which gave large beautiful flowers, and was called the Pitmaston Orange Nectarine. It was the first full-sized orange Nectarine known in England. I planted stones of this sort in 1856, which, in due time, bore fruit nearly all identical with the parent. One, however, large and ten days later, I named the Pine Apple Nectarine, owing to its flesh being transparent like the Pine. In 1862 I planted stones of this sort, but the young trees gave slight hopes of deviation. In 1865 several bore fruit, all like their grand-parent the Pitmaston Orange Nectarine, and were laid aside, till one day my attention was drawn to two very beautiful Peaches hanging on one of the trees. Here we have the fourth generation of the Elruge Nectarine, and it proves to be a large and late Peach.

"I may add that till I had bought my experience of the great variation in seedlings I could never believe in the origin of the Pitmaston Orange Nectarine. I was, perhaps, more inclined to think so from having received from the south of France, many years ago, a full-sized orange Nectarine under the name of Brignon Musqué. This gave large beautiful flowers, but was a clingstone.

"I may here mention that, as yet, Apricots have not given the remarkable variations shown by Peaches and Nectarines.—THOS. RIVERS."

It will be seen from the foregoing how short a time it requires to test any new variety. Parents having very distinctive qualities should be selected to experimental use with, and a short experience will be the best of all teachers. Other numbers might be added on the best shapes for orchard-houses and their general management, as also on the temperatures adapted to them, &c., but such topics, besides being beyond the limits fixed for the work, are also extraneous to the leading purpose, which was—the training and pruning of the Peach according to the latest experience.—T. C. BRÉHAUT.

LIME AND SULPHUR MIXTURE FOR THE DESTRUCTION OF RED SPIDER AND MILDEW.

I AM induced to send this, as amongst the numerous communications which have of late appeared in the Journal on the above subject this remedy has not been named that I am aware of. The mixture I make as follows:—1 lb. of quick lime and 1 lb. of flowers of sulphur well mixed together in one gallon of water, boiled about half an hour, and stirred at intervals whilst boiling. When it is quite cold the clear liquid is poured into bottles, and in this state kept for use.

About a quarter of a pint of the liquid to four gallons of water, and stirred until the whole becomes of a pale yellow, I have generally found sufficiently strong for use; but half as strong again will do no harm.

In the case of mildewed Vines I apply it early in the morning by drenching them well with the syringe; but for red spider I close the house rather early in the afternoon and then ply the syringe; of course it is better to keep clear of the bunches as much as possible, but it does not disfigure them. In a late house of Black Hamburgs, so treated last summer, no one could see any trace of it except by close scrutiny. With regard to Peach trees, I generally apply it in the evening. For mildew it may be necessary to use it a second or third time; but for red spider I find that twice in the season is quite sufficient. For Cucumbers, after well syringing the plants, I keep the frame or pit close for a few days, throwing a mat over the glass when the sun strikes it, instead of giving air.

This mixture must not be used for Melons, as it will certainly destroy the plants. I have no doubt that it will be found of great service amongst other plants when affected either with mildew or red spider; but as yet my experiments have gone no further than what I have stated above, and the loss of two crops of Melons has warned me to use it with caution on plants not hitherto tried with it. White paint is discoloured by it, but only for a time.

In conclusion, I assure your correspondents, Mr. Wills and "T. S. W.," that if, on the first appearance of red spider on the Vines, they will do as I have stated above they will not find it necessary in future to paint the stems of the Vines as a preventive of that arch-enemy.—J. M., *Exmouth*.

ICE-MACHINE.

AFTER the snow on the 10th of January, a frost of 15 occurred on the following night, and on the Friday we were lucky in being able to fill our ice-house, as Saturday brought a rapid thaw. I have thought for some years, that if ice could be ground or crushed fine before being placed in the ice-house, we should be able to secure a much larger quantity in the same house, and that a considerably greater body of air would be expelled from the house, making a difference of several months in the keeping. Could not some of the great machine manufacturers turn their attention to the matter?

I should very much like the opinions of some of your correspondents (perhaps Mr. Fish would be kind enough to enlighten us), whether ground ice would not keep better than ice in lumps of larger dimensions.—JOHN PERKINS.

[I have no doubt at all as to smashed or crushed ice keeping longer than that which is merely roughly broken, especially if the crushed ice is well pounded together with heavy beaters after it has been so pounded. I have had no experience in the use of a machine for smashing ice. The most serviceable, I think, would be a powerful crusher with a rotary motion worked by horse-power, the crusher placed over the crown of the ice-well, and the carts being emptied close beside it. Unless the machine were made to suit other grinding and crushing purposes besides ice, there would be considerable outlay, and the infrequency of the use would come to be looked at seriously in an economical point of view. By breaking the ice pretty well before it was thrown into the hopper of the crusher, the cartloads might be housed nearly as quickly or more quickly than now, and that would be a great matter, as it is often important to secure as much ice as possible in little time, the frost often lasting only a short period. I trust other readers will give their opinions on this subject. My own is, that the more the ice is crushed the better it will keep in small houses. In large houses, where a great quantity can be lodged and roughly broken, the grinding would be of less consequence. Economically considered, even those who have a small house might find it cheaper to make an extra ice heap or two instead of obtaining a machine. I have no doubt of the desirability of the latter where it could be obtained, and it would save many a strained wrist from the brisk use of wooden or iron mallets by those not accustomed to the work.]

So far as I know, Mr. Perkins is the first who has drawn attention to a machine for the purpose, and were there a demand for such a machine, there would be no lack of a supply. Meantime, I would mention from memory two very effectual modes of housing ice. The first had relation to a small ice-house formed on the north side of a very deep bank overhung with wood. Up this bank the ice had to be carried in baskets, after it was better pounded than ever I have seen ice since. It was then well pounded in the well, and clean wheat straw placed round the walls as the work proceeded. The position of the house prevented anything like moisture

remaining, and a drain two or three times trapped prevented all air entering from below. The labour in malleting the ice for this small ice-house, so difficult of access, was excessive; but the ice kept well, and was so much of a dense solid mass that a sharp pickaxe had to be used to take out a pailful or two, for two or three barrowloads at a time were not there thought about.

The other example was very different. The frost had been very severe. The water was fine and clear, without even a rush in it. The ice was from 3½ to 4 inches in thickness, and required much malleting to break it. As an experiment, a lot of ice was cut with sharp axes into blocks of 15 inches square. These blocks were taken and packed in a part of the house by themselves, and where they did not fit exactly a little water or the pounded ice was placed between to fill all vacancies, which instantly, owing to the frost, set like cement in a brick building. During the next summer, when the ice pounded in the usual way had sunk considerably, these columns of blocks stood alone in their glory. I attribute their greater endurance to the clearness of the ice, freedom from every weed, and the shutting out from them of all air, except what the water contained before it was frozen. Though this plan was interesting enough as an experiment, it never could be carried out largely except in very exceptional circumstances, whilst the crushing plan proposed by our correspondent could be carried out anywhere.—R. F.]

BREAKING OF THE VINE.

"T. S. W.," in No. 250, says—"That irregular breaking in Vines is more owing to the different parts being exposed to different temperatures than to natural causes," (I quote from memory and may not use the exact words), and the same experience prompts me to believe, that except in rare and exceptional cases, it is not necessary to bend, twist, or otherwise distort the canes in order to insure a good "break," but that proper attention to moisture and temperature is all that is required to bring this important part of Vine-culture to a successful issue. I say important, for the management after Vines have broken will be easy throughout; but if, on the contrary, they break badly, after-operations are rendered difficult and disappointing.

I have been employed in places where the bending of Vines is part of a system, and they have broken badly, yet the same Vines another season, bent in just the same way, have broken comparatively well. I have also seen Vines break alternately well and badly when trained straight up the rafters, in each case the health of the Vines being the same, and also the time of starting them—viz., January 1st, the best break being obtained in mild and dull weather when but little fire heat was required. Hence, it would appear that the evil is not constitutional, but atmospheric, and, therefore, more immediately capable of being remedied. I will briefly give the treatment as practised in two cases. First, then, let us start with a night temperature of 50°, and a rise by day of a few degrees, not being particular to a degree or two. Admit air a little slightly at the front as well as back of the house, syringe in the morning, and again in the afternoon—say at two or three o'clock, and close the house, which will not be opened again until nine or ten the next morning—no systematic moistening of the paths and floor of the house, except syringing the pipes on making up the fires at night. Who can be surprised at Vines breaking irregularly under such treatment? they being alternately subjected to an atmosphere as humid as that of a swamp, and as arid as that of a desert, in each case the evil being aggravated by the current of air from the front lights. Add to this, that the house being entirely close, the upper part would be for nineteen or twenty hours out of the twenty-four subjected to a temperature so much higher than the lower part as to cause the upper part of the Vines, be they bent or straight, to obtain the start, and as a natural consequence the general breaking is irregular. The least evil which follows, is that all the best bunches are at the top of the house.

In the second case, the same Vines shall be trained directly to the top of the house, be started at the same night temperature, keeping the paths, walls, &c., of the house constantly moist, but the atmosphere not stagnant, damping them ten or twenty times a-day if required. Let the day temperature be attained by nine o'clock in the morning, being a rise on the night temperature of 5° by fire heat, and of 15° by sun heat; in each case by unremitting and unlagging attention keep it uniform. Let there be a system of airing, and let that system be rigidly

adhered to, giving air gradually as the temperature rises, and reducing the amount as gradually as it falls, leaving a little on all night at top, by every light if possible, under all circumstances and in all weathers. A little will do, from a quarter of an inch to an inch will be generally sufficient, but the Vines must be the guide. If the top buds are becoming too prominent give a little more air, but never open the front lights on any consideration. It is soon enough to do that when the bunches are showing their blossom. The uniform moisture which is by this treatment presented to the Vine is the most natural and congenial, and the assistance of the syringe will not be required, except, perhaps, a slight dash very early in the afternoon of unusually sunny days. I have observed that Vines which are peeled, scraped, and polished up, do not, as a rule, break so kindly as those which have but little done to them in this respect; the rougher surface of the unscraped Vine retaining a more continuous and genial moisture around the spurs and buds, I believe, constituting the difference. Such is the treatment which was so successfully adopted by Mr. Young, late gardener to Viscount Barrington, and by which he for several years invariably secured good breaks, and with after-modifications fine uniform crops all the way up the rafters, excellent in character as regards size, colour, and flavour. For weeks together the Vines were not syringed, yet a red spider in the house was, indeed, a rarity, although close to the back wall ran a smoke-shaft, which was often so hot that the hand could not be kept on it. I remember one night taking the air off the top of the house for experiment, and in the morning finding that part 11° warmer than the lower part, and that proves that were it not for constant top air, the Vines must have broken irregularly. I have also proved, that in the case of a Vine trained vertically up a wall in the open air and a light placed against it, that part under the glass will break first.—J. WRIGHT.

respondent's attention to the experiment as detailed by Mr. Thomson. The Vine roots operated upon were roots that were chiefly bare of fibres, and that had been shortened and taken entirely out of the ground. When these are treated as stated, we have no doubt, from experiments of our own, that roots would be formed at the incisions, and most plentifully near the stem. Other successful experiments have been detailed in this Journal, in which fresh roots were abundantly protruded from the bottom of stems that had no connection with roots; but such experiments require first-rate management, and unremitting care. What we wish chiefly to add, however, is, that when we have made such incisions on the bare parts of large roots of Vines that were not separated from the fibres that existed at their extremities, then few of such incisions produced rootlets.]

ABSTRACT OF METEOROLOGICAL OBSERVATIONS FOR THE YEAR 1865.

TAKEN AT WARINGSTOWN, COUNTY DOWN, IRELAND. Latitude, 54° 25' 52" N. Longitude, 6° 17' 56" W. Height above sea level, 190 feet.

1865.	BARIOMETR.		THERMOMETERS.		HYGROMETER.		RAIN.
	Corrected and Reduced to 32° Fahr. and Sea Level.		Protected.		Exposed.		
	Max.	Min.	Highest of Month.	Lowest of Month.	Maximum in Sun.	Minimum on Grass.	
January	30.296	28.669	51	16	52	15	
February	30.605	28.852	52	21	58	18	
March	30.800	29.960	55	21	62	16	
April	30.481	29.859	72	32	68	18	
May	30.570	29.510	78	35	72	21	
June	30.480	29.700	81	38	75	25	
July	30.575	29.655	82	38	78	25	
August	30.575	29.610	82	38	78	24	
September	30.598	29.710	82	38	78	24	
October	30.250	29.980	70	28	78	24	
November	30.540	28.871	55	22	78	21	
December	30.588	28.949	53	22	78	21	
					61	28	
					43.11	46.30	
					34.96	36.59	
					38.27	40.38	
					38.88	43.96	
					43.48	45.12	
					48.82	54.46	
					52.51	56.42	
					56.81	58.79	
					63.24	63.24	
					67.87	67.87	
					69.63	69.63	
					66.61	66.61	
					59.65	59.65	
					50.27	50.27	
					48.81	48.81	
					35.66	35.66	
					38.65	38.65	
					39.05	39.05	
					41.71	41.71	
					50.20	50.20	
					55.69	55.69	
					63.10	63.10	
					66.26	66.26	
					68.89	68.89	
					61.72	61.72	
					54.53	54.53	
					46.35	46.35	
					45.80	45.80	
					18	18	
					15	15	
					17	17	
					13	13	
					6	6	
					21	21	
					6	6	
					21	21	
					6	6	
					14	14	
					1	1	
					1.28	1.28	
					3.16	3.16	
					0.98	0.98	
					4.91	4.91	
					5.65	5.65	
					2.96	2.96	
					1.65	1.65	
					2.75	2.75	
					2.25	2.25	
					0.69	0.69	
					3.80	3.80	
					0.54	0.54	
					1.28	1.28	
					3.16	3.16	
					0.98	0.98	
					4.91	4.91	
					5.65	5.65	
					2.96	2.96	

THE ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 3RD.

At the meeting held this day, Messrs. Cntbush & Son, of Highgate, made one of the most elegant exhibitions of forced flowers we have seen. So simple and graceful was the group, and so tastefully was it arranged, that it was the admiration of all who saw it, and fully justified the Judges in awarding it a first prize. It consisted of four pots of Convallaria polygonatum, or common Solomon's Seal forced (we are surprised this is not more frequently seen), as a centre; and surrounding these were nice plants of Rhododendron Cunninghami, a Dielytra spectabilis, an Azalea pontica Taylor's Red, a Vallota purpurea, two pans of Crocus versicolor, two pots of Vermilion Brilliant Tulips, one of Tournesol Tulips, and one of each of the Hyacinths La Tour d'Auvergne, Vainqueur, and Amy.

Mr. Bartlett, of Shaftesbury Road, Hammersmith, who exhibited so successfully last week, was again present with a nice collection of twenty-five Hyacinths well bloomed, and some Polyanthus Narcissus, for which he received a second prize.

Messrs. Lacking Brothers, of Bayswater, received a first-class certificate for a pretty exhibition of forced flowers.

INCISIONS IN VINE ROOT.

In Mr. Thomson's "Treatise on the Vine" (chapter on experiments), he speaks of having made incisions in the old root or arm of the Vine after taking it up, and that from the lips of each incision roots were produced. I have this day bared the old root of my Vine with scarcely a fibre upon it, and have nicked it with a knife in several places. My gardener says "it will bleed to death," and that no roots can possibly come of this. Mr. Thomson says he cut "incisions." Does he mean simply nicks with the knife, or does he cut out a piece from the back of the root? thus, ————A———A——— All round the root I have laid fine fresh turfy soil and bones. Will my Vine die, or will it be improved, do you suppose?—A CONSTANT READER.

[We are not quite sure what kind of incisions Mr. Thomson made, but we should presume they would be simple slits—say three-quarters of an inch long, and one-eighth of an inch deep. Just as in the case of the slit in a layered Rose, or a layered Carnation, a little bit of crock or wood might be stuck in the slit to keep the wounds open, or rather their lips a little separate. There is little danger of the wounds bleeding, if made early enough. We shall be glad if Mr. Thomson will explain this process, more especially as we may have mistaken his meaning. From our own experience, however, we would direct our cor-

DETECTING BARREN STRAWBERRY PLANTS.

WHILST engaged in filling our Strawberry-house with plants that have been prepared for forcing, I have been led to remember what was said last spring about barren Strawberry plants, one of our gardening friends being disappointed, after forcing his plants, to find that very few of them showed any blossoms. It is quite evident from what he said about his plants that they were barren. Now, barren Strawberry plants may easily be distinguished from fruitful plants now, or while they are being prepared in the autumn. I prepare for forcing nearly two thousand plants every year, and I have had a little trouble myself with barren ones; for, after forcing my plants, I very often make plantations of them in the kitchen garden, and I frequently find some that have become barren. When I come to look for early runners from these plantations I find that I can take them much sooner from barren than from fruitful plants, but all that they will give me for my trouble will be leaves and runners. In the spring they first produce a

leaf, and then a runner, and so on alternately, and my firm belief is, that when Strawberry plants once begin to do that no one can make them grow any other way. It matters not how many runners are taken, for I find that these will produce nothing but leaves and runners again. It is quite possible for Strawberry plants to be unfruitful one year and very fruitful the next, but such plants grow very differently from the above.

—H. MASSLEY.

BOILERS.

As Mr. Robson has stated his experience with boilers for hot-water heating, and solicits information, I beg to add my mite.

We have an upright cylindrical boiler, without setting or covering of any kind, heating between 400 and 500 feet of three-inch piping. The boiler is set in a room in the basement of the building to heat it, and it answers the purpose very well, thus confirming the opinion of Mr. Robson, that such boilers give off a very great deal of heat. The piping connected with this boiler is fitted with Truss's patent pipe-joints, the most simple, economical, and efficient joints I ever saw. Any man with ordinary ability may with these joints fit up a heating-apparatus for any purpose, and, if necessary, could take it down and erect it elsewhere without deterioration to any part of the apparatus. After the many useless things that have been foisted on the public by the aid of patents and otherwise, it is really refreshing to find something that really is what the patentee professes it to be.

We have one small upright cylindrical boiler set in brick-work, and I pity the man who has it to attend to, for the fuel often becomes fixed in the boiler, and not more than a third of it is consumed—not a very pleasant affair when a fire has been banked up to keep out frost. There are also two saddle boilers, one of them has water-bars for fire-bars, but I do not think that it is in any way the better of them. Taken for all in all, the old saddle-back is as good as any boiler I have yet seen. Coke is the only fuel used.—F. FLITTON.

MANY and excellent are the articles which have appeared in THE JOURNAL OF HORTICULTURE at various times upon the boilers now in use for heating horticultural buildings. The last discussion elicited very laudatory remarks from some of your correspondents upon the many excellencies of tubular boilers. At that time the most approved form of those boilers had been but just introduced, and the articles then appearing, I have no doubt, set forth the previous experience of the writers. A more extended experience has now, however, been gained, sufficient, at least in a measure, to test their qualities of endurance—one of the qualities which appear to have been overlooked or very little thought of at the time. I wish those who have one of the above-named boilers under their charge to give us the benefit of their experience. Long lists of testimonials were published at their introduction, bearing the signatures of gentlemen whose names are a sufficient guarantee of the truthfulness of their recommendations. Most of us, however, have learned from that best of all teachers, experience, that an article may be very satisfactory for a time, but may ultimately prove less advantageous than was expected. Now, if the gentlemen who gave testimonials in favour of tubular boilers could be induced to give an account of the subsequent performances of these, with the length of time erected, and an approximation to the amount of work done, it would be such a volume of evidence, either for or against, that a more sure test of their merits could scarcely be desired.

The writer whose articles in the last discussion bore most upon the boilers in question was Mr. Abbey, who threw out some suggestions for their improvement. His further observations would, therefore, be valuable. Mr. W. Gardener's and Mr. R. Carmyle's articles directed us to "Clarke's Water-jacket Boiler," which is still largely advertised; and the late Mr. F. Chitty gave a description of Messenger's boiler which he appeared to think highly of. Perhaps his successor would tell what that boiler has done since Mr. Chitty's time. It is, however, regarding the upright tubular boilers that information is wanting.

In few words I will state my own experience of them. They are, when first erected, powerful, though not in all cases economical, are easily cleaned on the sides of the tubes next the fire, but not on the sides farthest from it, where they become clogged with soot and other products of combustion very much resembling coal tar, and which greatly affect their efficiency.

In one of the qualities that I most desire in a boiler—endurance, they appear to be very deficient. Two of them coming under my own immediate observation, have given way in less than four years after being put in, and two or three others that I have heard of have done the same. In all these cases there appears a strange coincidence, they having all cracked in exactly the same manner and place—through the lower rim to which the upright tubes are joined, on a level with and opposite to the top furnace-door. This fragility appears to me to be a fatal defect in this kind of boiler.

Can this cracking arise from a defect in the casting? Is it caused by the expansion and contraction of that ring of metal to which the vertical tubes are joined, and which appears to hang over the hottest part of the fire? (This remark does not, from the published drawings, appear to apply to "Clarke's New Water-jacket Furnace Boiler.") Or is it caused by the enormous pressure exerted by so large a volume of water, standing in most instances 10 or 12 feet above the bottom of the boiler? My own opinion is, that all these causes combined tend to produce the cracking. Shall we, then, continue to erect upright tubular boilers? Shall we return to the good, old and long-tried saddle? Or will some one tell us of, or invent a new one that will burn any kind of fuel, and that shall supersede all the boilers at present in use?—G. COOPER, *Harristown.*

NEW BOOKS.

The Treasury of Botany: a Popular Dictionary of the Vegetable Kingdom. Edited by JOHN LINDLEY, Ph.D., F.R.S., F.L.S., and THOMAS MOORE, F.L.S., assisted by Numerous Contributors. London: Longmans, Green, & Co.

BOTANICAL works of reference are, as a rule, occupied with such dry details and such minute distinctions that, even if comprehensible by the general reader, they are thrown aside in disgust. On the other hand, the works specially intended for popular use are for the most part by far too general, too little precise, often too incorrect in the information which they supply, to serve as safe guides on many points which arise in everyday life, where everybody is expected to know a little of everything; and notwithstanding all that has been said about a little knowledge being a dangerous thing, that little knowledge, provided only it be correct so far as it goes, is not, and cannot, in a properly-constituted mind, be otherwise than beneficial. In every branch of science, whether botany, or chemistry, or geology, or astronomy, the end of all our knowledge has been to discover how little we really do know, to find step by step as we advance an ever-widening field before us, and to catch a dim idea of an undefined expanse in the future. Because, then, we cannot grasp all at once, not even a single one of the many branches of human knowledge, let us not turn away discouraged from the pursuit; but rather let us avail ourselves of the best helps to the attainment of the greatest possible amount in the least possible time. Such a help is the one before us, consisting of two closely and beautifully printed volumes of, in all, 1254 pages, and the contents of which are neither so scientific as to be unsuitable for the general reader, nor so popular as to be unfit for the purposes of the student. They have, in fact, fulfilled the object proposed—namely,

"To bring together, into the form of a dictionary, a concise account of all the plants concerning which a general reader was likely to seek for information; adding thereto, where practicable, longer notices of the more remarkable species, together with such popular matter as would give interest to the otherwise dry technical character of generic or specific descriptions.

"What the 'Treasury of Botany' really comprises, therefore, is a short history of those genera of plants which are known to possess especial interest on account of the medicinal qualities or the economical uses of their species, or by reason of their beauty or utility as garden plants; while to these two groups has been added a still larger one, comprising a selection of genera serving as representatives of the whole series of Natural Orders and their subdivisions. The space devoted to each separate genus is necessarily brief: and, except in the case of medicinal or economically valuable plants, of which a rather fuller account is given, the object has been to convey some notion of the characteristics of genera or families, rather than to attempt an enumeration, much less a description, of the species of which they consist. For that a massive cyclopædia would have been necessary."

The above extract from the Preface is a fair outline of the object and scope of the work, and the mode in which it has been carried out is worthy of all praise. The plan, we are informed, was perfected under the supervision of the late Dr. Lindley, a man who, to his great botanical knowledge, united a

thoroughly practical mind, and a great talent for arrangement; but his failing health did not permit him to continue his superintendence beyond the letter C; the responsibility, therefore, of conducting the subsequent portion of the work devolved on his brother editor, Mr. Moore, of the Chelsea Botanic Garden, and most ably has he performed his task—a task which, from the very large amount of letter-press, the variety of the subjects, and the number of the contributors, must have been far from a light one. The names of the writers are—Professor Balfour, Rev. M. J. Berkeley, Mr. A. A. Black, Mr. W. B. Booth, Professor Buckman, Mr. W. Caruthers, Mr. B. Clarke, Professor Dickie, Mr. W. B. Hemsley, Mr. R. Heward, Rev. C. A. Johns, Dr. Masters, Dr. Moore, Dr. Seemann, Mr. A. Smith, Mr. J. T. Syme, Mr. R. Thompson, and Mr. W. Thompson.

This list affords an excellent guarantee of the quality of the contents, and the articles are written in a clear and pleasant style, which, without sacrificing in the least the accuracy of the information conveyed, must add much to the popularity of the work. As an example, we will quote the article by Dr. Masters on *Argania* :—

“A genus of plants belonging to the family of *Sapotaceæ*. The calyx has ten sepals, in two rows; the throat of the corolla has five scales or abortive stamens, alternating with the five fertile stamens; anthers opening outwardly; style awl-shaped. *A. Sideroxylon* is the Argan tree of Morocco, in certain provinces of which it grows in woods. It is a spiny evergreen tree, with a trunk of considerable size, but of low stature. It gives off branches at a few feet from the ground, which incline downwards till they rest on the earth; at length at a considerable distance from the stem, they ascend. A tree mentioned in the ‘*Journal of Botany*’ for April 1854, measured 16 feet only in height, while the circumference was as much as 220 feet. The fruit is an egg-shaped or roundish drupe, dotted with white. These fruits are much relished by all ruminating animals, who, in chewing the end, eject the hard seeds, from which a valuable oil is extracted. The culture of the plant for the sake of its oil has been recommended in Australia and certain parts of Cape Colony subject to droughts. The wood is very hard, and so heavy as to sink in water.”

In addition to the other contents there is a copious glossary of botanical terms, besides which the English and French names of a large number of plants are given, and the whole is prefaced with descriptions by Dr. Seemann of vegetation in different parts of the world, in illustration of which there are twenty beautifully executed steel engravings. There are also numerous equally praiseworthy woodcuts, engraved by Branston from drawings by Mr. Fitch. It is scarcely necessary to add, after what has been already said, that we can heartily recommend the “*Treasury of Botany*” as a comprehensive and reliable work of reference.

Les Plantes à Feuilles Ornementales en Pleine Terre, par Comte LÉONCE DE LAMBERTYE. Paris: Auguste Goir, Rue des Ecoles, 82.

Under this title M. le Comte de Lambertye, the author of an excellent work on the Strawberry, has commenced the publication of one on those plants with ornamental foliage which are sufficiently hardy to succeed out of doors in summer in the climate of Paris. In the public gardens of Paris fine-leaved tropical plants are introduced on a scale which is nowhere else equalled, nor, indeed, even approached, except at Battersea Park, where Mr. Gibson has adopted this new style of gardening with the happiest results. The plants thus employed having been chiefly confined to botanical collections, and not being for the most part remarkable for the beauty of their flowers, their merits for decorative purposes were overlooked until the last few years—indeed, to most amateurs and gardeners they are even now far from well known. A work, then, such as that which M. de Lambertye has commenced, giving the descriptions of these plants, and their cultivation, must be regarded as supplying a want.

The work is dedicated to M. Barillet-Deschamps, head gardener to the city of Paris, by whom the idea of planting-out tropical plants in the public gardens of Paris was first carried into effect, and who thus introduced a new style of gardening, which in France is daily becoming more popular. In the less-favoured climate of England the system has been successfully adopted in the warmer parts of the country. M. de Lambertye's work is to consist of three parts, of which the first, treating on the principal species of *Solanum* with ornamental foliage, has already appeared; the second is to be confined to *Cannas*, and the third is to include plants of other genera.

The author states in his preface that only such plants are described as he has himself grown, and that in the manner

which he describes. He commenced his collection of *Solanums* in 1862 with a few species, and in 1864 the number had increased to seventy-six; but on examination several were found to be incorrectly named, and many others not worthy of cultivation. In the part before us thirty are described, a number which the author remarks is still too large, for not more than eighteen or twenty are of undoubted merit. Each species is taken in alphabetical order, and the stem, leaves, and flowers are minutely described; then the culture is given, followed by general remarks on the ornamental character of the plant.

The species noticed at length are *Solanum aculeatum*, growing about 2½ feet high, and more remarkable for the abundance of its prickles than for its beauty. *S. amazonium*, about the same height as the preceding at the end of its first summer's growth; very ornamental from its bronzy yellow young leaves, and numerous large blue flowers; withstands the winter at Hyères in the south of France. *S. atropurpureum*, very striking by its deep purplish red shoots, numerous spines, and the white veins of the leaves, which are sometimes 18 inches long by 16 broad. Growing upwards of 6 feet high, it is suitable for small groups on lawns. *S. auriculatum*, growing 5½ feet high in the first year, spinesless, leaves 18 or 19 inches long and a foot broad. Suitable for single specimens. *S. betaceum*, when well managed growing a yard high, with handsome leaves 15 or 16 inches long, and deep purple when young. *S. citrullifolium*, elegantly-cut leaves, and numerous flowers of a lilac shade throughout the summer. Grows about 3 feet high. *S. crinitum*—in peat soil at Monceaux this grows about 5 feet high, and the blade of the leaf is nearly 2 feet long and 21 inches across. Shoots and leafstalks covered with long white hairs. *S. eleagnifolium*, suitable for small groups and front lines; requires support. *S. enneodonton* (Hort.), attains a height of about 5 feet, of an elegant habit of growth, leaves very small. Suitable for massing along with other species and for small groups on lawns. *S. ferrugineum* stated to grow 6½ feet high at Hyères, where it goes by the name of *S. verbascifolium*. *S. Fontanesianum*, about 5 feet high, suitable for groups of from three to five, and for mixing with other species. *S. giganteum* attains a height of 6½ feet in the second year of its growth, and though not the most ornamental species is nevertheless deserving of a place. *S. glaucum*, remarkable for the glaucous hue of the whole plant. *S. glutinosum*, sometimes sold as *ferrugineum* and *verbascifolium*; one of the finest species in the genus. Attains the height of 4 feet in the first season, with leaves 15 inches long by 9 inches across. Excellent for groups, and suitable for massing by itself or along with other species. *S. hyporhodium*, also known as *S. bicolor*, *discolor*, *purpureum*, and *galeatum*. One of the best of the genus, but requires plenty of heat. In the public gardens of Paris it grows 5 feet high, and has leaves 2 feet 8 inches long and 20 inches across, with ivory-white veins, the under side of a fine violet purple. *S. Jacquini*, dwarf, about 9 inches high, elegant leaves, set with white spines; violet flowers, succeeded by numerous green and white berries. *S. Karstenii*, known also as *S. fraudulentum*. Very fine; tall; leaves very large. *S. laciniatum* grows 10 feet high at Hyères; very ornamental in its habit of growth, large leaves, and numerous large, bluish lilac flowers. *S. macranthum* grows 9½ feet high at Paris, and has leaves a yard long and 21 inches across. *S. marginatum*, one of the most ornamental; the leaves shining green, bordered with a white zone, which disappears as they become older, white on the under side, and on both sides when young. *S. maroniense* grows about 3 feet high; remarkable for the ferruginous hue of the young shoots and leaves, and the size of its violet-blue flowers. *S. pyracanthos*—its recommendations are its light and elegant character, and the fiery hue of its numerous spines. *S. quitense*; large velvety green leaves, with an amaranth tinge reflected from the veins and hairs. *S. reclinatum*, nearly allied to *S. laciniatum*. *S. robustum*; grows 4 feet high in the first year, and has leaves 30 inches long by 13 across. Of noble appearance, the stem, shoots, and the under side of the leaves covered with thick ferruginous down, the whole plant set with formidable spines. *S. Siegingii*, a noble species which should be in every garden. A plant 7 inches high, which M. de Lambertye planted out on the 16th of May, had by the 24th of October attained the height of 9 feet, and the leaves were a yard long, with a blade of about 26 inches by 20. *S. sisymbriifolium* and *S. tomentosum* neither of them so effective as some others. The former, however, grows rapidly, and has large white flowers, with bright yellow stamens, and ivory veins in the leaves; the latter, being dwarf, is useful for the edgings of beds. *S. violaceum*, of second-rate merit.

S. Warszewiczii, on the contrary, is highly ornamental. M. de Lambertye having only received this in 1863 from M. Weick, of Strasbourg, he has not been able fully to study and describe it. It grows 6 or 7 feet high in the first year, and has a noble appearance, especially when planted singly on lawns. The leaves are very large, the blade being nearly 30 inches long and more than 2 feet across.

This part of M. de Lambertye's work contains representations of *Solanum erinitum*, *robustum*, and *Warszewiczii*, but much cannot be said in favour of the style in which they are executed. It concludes with a comparative table of the thirty species described, which will be found useful as showing at a glance what are the particular merits of each in a decorative point of view.

Judging from the first part, and by the reputation which the author deservedly enjoys, this work will be found very useful by those desirous of information on sub-tropical gardening—a new field of which but little is yet known in this country; but, thanks to the excellent example at Battersea Park, a taste for it is rapidly growing up, and England, notwithstanding her disadvantages of climate, will not and must not be left behind in all that pertains to gardening progress.

WEATHER WISDOM.

(Continued from page 27.)

As on a former occasion I endeavoured to impress upon your readers the absolute importance of a chart to assist the observer in remembering the previous fluctuations of the barometer, so now I propose to show more fully why a gardener should have no difficulty in noting down on a chart at fixed periods the variations of atmospheric pressure, and in the next place to consider why it is of the greatest importance for him to do so.

Those persons whose various duties call them every day many miles away from the scene of their meteorological observations, are unable, unless they possess self-recording instruments, to note down the many changes in the barometer and thermometers, or the different phenomena which have occurred during their absence. They may, indeed, hear from others who have been on the spot, that there has been a violent thunderstorm, a great rainfall, or a heavy fall of snow, at such and such a time, but unless the informant is a close observer, his remarks are not of much use to the meteorologist. Gardeners, on the contrary, can always make their own observations, and can be always near their instruments, if these have been provided for their use by a thoughtful master. Some people apprehending danger from the ever-watchful eyes of a thief, may hesitate before they leave a barometer in a shed or an outhouse; but even if a barometer is not carefully secured, unless it is of very small size, or a man is acquainted with the process which renders it portable, or observations are taken by means of an aneroid, I do not think there is real ground for alarm.

But to return to my subject. The great advantage which a gardener has over other observers is as follows:—He is always in the daytime, and in some places at night, near his instrument, and he can therefore note down at other hours, in addition to 9 A.M., the changes which occur in the height of the barometer. Very often the column of mercury falls considerably during the day, and returns at night, or by the next morning, to somewhat near the height at which it stood when the original observation was made, thereby deceiving any one who has not visited the instrument in the interim. I could give your readers many instances, but I think the fact will be admitted by all observers to be true. Now, from such oscillations of the mercurial column the gardener knows that the weather is likely to be unsettled, and cannot be depended on; but the other observer, from want of opportunity, and knowing nothing of the fall and subsequent rise of the mercury, anticipates different weather to that which he would have expected had he known of the changes during his absence. It may be urged by some that it is bad policy to place a barometer in the hands of a gardener. "It will cause him," they say, "to neglect his work, and to be continually running away and gazing at the glass, and dotting down the result on the chart." But it must be remembered that these records of the weather are not intended for scientific purposes, or for comparison with other barometers, but simply as aids to determine the weather which may be expected for a few succeeding days. For such a purpose hasty glances are quite sufficient, and a gardener would not, I am sure, be drawn from his ordinary pursuits for any great length of time.

In showing your readers in the next place why a regular study of the barometer is of the greatest importance to a gardener, I ought to call to their recollection the great advantages and saving of life which have been of late years the result of the warnings which are now sent down to the seacoasts when gales and heavy weather are supposed to be impending. These warnings are the result of years of careful study of the barometer in connection with other instruments, and of the winds and other phenomena in the atmosphere in all parts of the United Kingdom, communicated to head quarters by the electric telegraph. A man who is forewarned is forearmed; and a gardener who studies the barometer, as well as the dry and wet bulb thermometer, and who observes the way of the wind, and the appearances in the sky, has it in his power to be forewarned as well as the sailor. Cannot the gardener, then, on different occasions say to himself, "From my knowledge of the movements of the barometer, and with the aid of thermometers, I come to the conclusion that there may be gales, or rain, or frost, or snow, and I will be prepared for such contingencies?"

In conclusion, when those furious gales which burst out sometimes in the night find some inlet through an open window into the interior of a greenhouse, let an observer of the weather rejoice that the appearance of the mercurial column gave him some indications of probable weather, and that, acting upon that probability, he wisely shut up and secured the greenhouse, which, but for that precaution, might have presented to his astonished gaze in the morning—a glass-house without a roof.—X., Surrey.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHERE a large amount of produce is required from a small garden it is highly necessary that some arrangement should be made and followed up, so as to keep a succession of crops in the ground. In all situations, and under all circumstances, it is advisable to keep a cropping table, and note the time of sowing, planting, and gathering, with remarks on each description of vegetable. This table would be of great value in pointing out the time of sowing in that particular locality, so as to have the crops coming in at the time required. *Beans*, a sowing of Early Hangdown Long-pod should now be made in the open ground, where the soil is sufficiently dry to work well. *Cauliflowers*, the plants in frames and under hand-glasses to be kept clear of decayed leaves and litter, and to have all the air possible in mild weather. *Celery*, sow Cole's Crystal White in boxes for the main early crop, it is an excellent early dwarf variety. *Cucumbers*, this is a good time to prepare for the principal crops; in making dung beds some brushwood or faggots should be laid at the bottom to drain off superfluous water; a narrow layer of the same material should also be built up with the bed under each rafter to reach from front to back, this will allow the heat from the linings to circulate freely, and at the same time will be a saving of dung. As soon as the seed leaves of the young plants are fully developed pot off in soil composed of two parts of leaf mould, one part loam, and one-fourth of white sand. *Lettuce*, remove decayed leaves from those in frames. Give plenty of air. *Mushrooms*, after the beds have been made a few days they should be examined every morning, so that it may be ascertained if the heat is increasing or decreasing. A thermometer may be thrust beneath the surface of the bed, and if, after two or three examinations, it does not exceed 80°, the bed may be spawed. *Radishes*, a sowing of Wood's Early Frame may be made on a warm sheltered border. Clear all the winter crops from decayed leaves as soon as the ground will admit of going upon it. *Sea-kale* and *Rhubarb*, let the roots for next year's forcing be planted immediately in rich ground, trenched; throw a hillock of old tan, ashes, or sand, round each crown to encourage it through the vicissitudes of the weather in February and March. *Tomatoes*, sow in heat immediately; also Sweet Basil, Sweet Marjoram, &c.

FRUIT GARDEN.

Let all planting be finished as soon as possible, and stake and mulch. Remember to drain thoroughly. Nowhere is this advice more necessary than in the orchard; although Apples and Pears are fond of adhesive soils, they will never prove profitable where water is allowed to accumulate. Examine all old or overborne trees; many trees of this character may be soon renovated by applying manure to the extremities of their

roots, as also by good top-dressings. Thin pruning is also of great use to Apples which are rather free setters; the same is also of great service to the Nonpareil class, to enable them to perfect both fruit and wood.

FLOWER GARDEN.

The plan for the coming season of gaiety should now be fully settled. All alterations should now be carried out without delay. In sowing the Californian annuals take care to consider when you most want them, they may be commenced with when wanted early. Finish top-dressing Auriculas, do not delay it while the weather is fine. Remove early blooms, and, if any plants look sickly, examine the roots: if from canker, apply the knife; and if from inefficient drainage, put more into the pots, if possible without breaking the ball of soil. Tulips are very rapidly coming forward, protect them carefully from frosts and cutting winds. Continue to watch for leaves that are cankered, and remove them as soon as perceived. Ranunculuses may be planted. After the beds have been evenly raked drills should be opened 2 inches deep and 3 inches from each other; into these the roots should be pressed down, covering them with fine and rich compost, slightly fastening the soil over them by giving it a gentle pressure. Dahlias may be put in bottom heat, and, as soon as the shoots are 2 inches long, strike them in brisk heat. Top-dress the beds of Pansies with decayed leaves, and manure from the Melon-pits reduced to a black unctuous compost. Peg down or remove all straggling shoots, and place bran under tiles as a decoy for snails, which will now, on mild nights, begin to be troublesome.

GREENHOUSE AND CONSERVATORY.

Still pursue steadily the directions with regard to temperature, &c., laid down in previous calendars. Slight advances in heat may be made on bright days, but if cloudy skies intervene revert immediately to decreased temperature, and let humidity proceed in the same ratio. Climbers may be looked over in the conservatory; and if an early display of their beauties is required, some of the irregular wood may be pruned away forthwith. Passion-Flowers and others may receive this treatment; but permanent plants, as Acacias, &c., will, of course, of themselves point out an exception. Those who are growers of the families of Epacris, Correa, Leschenaultia, Polygala, &c., will soon enjoy a rich treat. Frequent introductions and frequent removals are the order of the day here. Camellias require at this time abundance of water. Attend well to Ericas, Epacrises, &c., that are potbound, some of these will require liberal watering. The winter has been so favourable for plants in the greenhouse in requiring so little fuel, that those who have been duly impressed with the importance of avoiding strong fires in plant-houses will find their account in the superior health of their stock. Increase warmth on sunny afternoons for a couple of hours, but let the thermometer sink again at night to 40° or 45°. See that all insects are extirpated before the growing season commences, and clear or sponge away all fungus or dirt of any kind from the leaves of plants—thorough cleanliness holds equally good with plants as with animals. Keep all stock neatly tied up; dress climbers. Tropaeolums growing should be constantly attended to. Shift some forward Pelargoniums into their final pots, and stake them out, if intended for specimens of high cultivation. Remove weak or crowded shoots, and secure a thorough circulation of air, without draught, to this house at all favourable opportunities.

STOVE.

Let all increase of heat take place on bright days, chiefly early in the afternoon, and then accompanied with a somewhat moist atmosphere. Have a batch of Gloxinias repotted and placed in bottom heat, using heath soil, loam, charcoal, and sand for compost in a fibrous state. Stove climbers on trellises, and growing in pots or tubs, that require to be shifted soon should be cut-in to fine fresh buds, preparatory to disrooting or shifting. Attend to the shifting of the Amaryllis tribe when requisite; as soon as they show signs of growth let them be introduced into this structure, and give a trifling amount of water, increasing it gradually as the leaves unfold. Pot *Gloriosa superba* in light, free, rich soil, putting two strong tubers in each pot, and plunge in a brisk heat till the shoots appear. Start such plants as *Stephanotis*, *Dipladenias*, *Clerodendrons*, both young and old plants, and recollect that a nice bottom heat is what they delight in.

FORCING-PIT.

Continue to introduce Roses, Lilacs, Sweet Briars, &c., for succession, and maintain a temperature of from 65° to

75°, with plenty of moisture in clear weather. Fumigate whenever green fly appears, and syringe the plants whenever the weather is favourable. Some Gardenias must be started in the warmest corner of the pit. This pit will be rather too warm for the Geraniums, but a good stock of the forcing kinds should be started in some of the forcing-houses.

PITS AND FRAMES.

A calculation should be made as to how far the inmates of these structures will be able to supply the masses in the pleasure ground. No doubt damp has reduced the numbers of some kinds. Strong plants of Verbenas, Fuchsias, Petunias, Heliotropes, Salvias, Calceolarias, &c., or pots of store plants of these which had become established in the autumn, should be removed forthwith to some of the houses or pits at work to enjoy, if possible, a moderate bottom heat. These will quickly furnish abundance of cuttings, which should be slipped off and propagated. Water sparingly here at present.—W. KEANE.

DOINGS OF THE LAST WEEK.

Variations of Temperature—Ice-houses.—We expect to hear many and different accounts of the results of the severe though short snowstorm; but these can hardly be more diversified than the accounts we have received as to filling ice-houses, or the impossibility of doing so. Some of our friends and correspondents obtained some ice on the 11th ult., and plentifully on Friday the 12th; but the snow commenced falling with us when there was scarcely a crust of frost, and the softness and warmth of the ground no doubt caused it to melt all the sooner when the thaw came between midnight of the 12th and the morning of the 13th. On Friday we could not have done anything with ice. There was only a thin film on our ponds that would not stand the touch of the ice-hook; and that was protected by a covering of snow, which prevented the keen frosty air of the afternoon and evening having much effect upon it. From throwing water over the snow so as to melt it there was plenty of good ice on the morning of the 13th, but then the sleet and rain soon made the work wholly unsuitable for men and horses. What surprises us is, that so many collected so much ice on the 12th, when we had none worth going after. The snow and the thick atmosphere in our case must have prevented freezing, and we conclude that there must have been a clear atmosphere before the snow came, or between its ceasing and coming on again, so as to permit of freezing. The only regret in our case is, that, for making sure, we did not roll and cart a lot of snow on the Friday morning before the frost became severe in the afternoon, as then we might have made ourselves tolerably sure of a supply for another year, and snow does not wet and hurt men like heavy sleet. If another chance occur we must not wait for the ice to be so thick as we could wish it to be, as we are hardly safe for another season; and what is down in the well with us always decays faster than that high up near the dome or the doorway in these old-fashioned well-houses—a fact which first impressed us with the feasibility, and even desirability, of having ice-heaps, and even ice-houses, entirely above the ground level. The latter, built with double walls, and a space of confined air of from 6 to 9 inches in width between them, and with a wide overhanging roof, also double—the outer one of thick thatch or heath—ought to keep ice as well, if not better than any well sunk in the earth.

The ice-house chiefly used here is one of the old-fashioned wells, with a long passage and several doors. It had been built with double walls, but the inner one had been taken out before our time, for what reason we know not. The ice keeps well—has several times lasted within a few weeks of two years, but we like to fill the house if we can every season. Though we should leave the present passage for taking out the ice, we would take the first opportunity of so changing the road as to have the ice put in by a hole in the crown of the arch, and thus much labour would be saved, as it requires three men, generally, standing in the passage, to shovel the ice past them, between their legs, until it reach the well. Nor is this the worst of it, for the notes and the recollections of a good many years have convinced us, that of all the men employed on ice-days, taking it off the water, filling carts, breaking at the ice-well door, pounding and packing it inside, and shovelling it along the passage—those performing the latter work have been more liable than the others to suffer from colds and attacks of rheumatism afterwards, however well their boots were protected, and their legs secured, by non-conducting materials.

Though, as stated above, ice must often be procured in our uncertain climate under unfavourable circumstances, we may add for beginners that the most favourable circumstances for insuring ice keeping well are obtaining it from the clearest possible water, free of grit, weeds, straw, or chips; securing it if possible when the temperature is a long way below the freezing-point, and then smashing it at least sufficiently well for all the bits like road granite to be embedded in the finer snow-like smashed ice, so that all may be pounded down together with as little air left in the interstices as possible. If the air is keen and frosty a little water may be added in pounding to fill up all crevices. If, from the heat of the sun when carting, or the high temperature of the atmosphere, any water should come out of the cart along with the ice, then there will be plenty of water for consolidating the mass without adding more.

We may here add that though the ice-house is very often under the care of the gardener, he himself rarely derives any benefit from its retarding or cooling influences, at least, unless in rare cases. We have concluded that the vegetables and fruit that were retarded in an ice-well—even its passages—suffered much in flavour, and just in proportion to the time they were kept in the low temperature. We have also been informed by first-rate cooks that even haunches of venison, however carefully wrapped up, likewise lost in flavour when long kept in the ice-house. For the cellar, in securing iced water and iced wine, and for confectionary, for the larder, and for making ices in the usual way, ice is invaluable as a luxury in summer, and in many cases it is so valuable for medical purposes that all gentlemen who can afford it should have an ice-house. Where much ice is wanted it would be advisable to have the ice-house as a part of the offices instead of at a distance from them, and then a stone-floored and a marble-shelved sort of ante-room close to the ice-well could be made, where milk, butter, and meat could be kept cool, without being directly exposed to the damp that ever comes from an ice-well in summer.

Perhaps here, too, we may also repeat what we think we stated last season—that where ice has to be brought from a distance, strong-made tubs, lined with 2 inches of cork, and with double lids, the outer one also lined with cork, are very useful for keeping the ice from a week to ten days in the hottest weather. If any one choose to take out a patent on this subject we will make him the present of an idea, which, if reduced to practice, will make these tubs even better than they generally are, and that is simply by leaving a close space of 1 or 1½ inch between the wood and the cork. We do not see how a double tub, even of wood, each tub 1½ inch thick, with a 1½-inch space between them, closely fitted top and bottom so as to keep the space between air-tight, would not be quite as good as or better than the present tubs with their linings of cork. In such tubs it is very common to place a pitcher or an earthenware vessel full of water to become cooled, but when that is done the ice placed round it ought to be pure, for if taken from dirty water we should not like to drink the iced water if we know it. A better plan every way is to have an iron or tin vessel fixed in the middle of the tub, with a good lid, and a pipe with a tap attached passing from its bottom through the tub, so that water may be drawn off without lifting the lid and exposing the ice. This iron vessel should leave enough of room for bottles of wine to be placed among the ice round the sides of the tub. Some people consider a glass of water thus iced one of the greatest delicacies in the hot summer months. Judging from our own experience, such iced water should be partaken of with great reserve and care. Would some of our medical friends be so good as to give us their opinion?

KITCHEN GARDEN.

Made the most of the dry days we had in surface-stirring among all young crops, digging, and trenching; but Wednesday and Thursday brought us another succession of wet days, which greatly abridged all out-door operations. Gave plenty of air to everything under the protection of glass in mild or wet days, by tilting the sashes back and front. Where there is much of this sort of work to do, it is true economy not to depend on anything comestible, but to have pieces of wood prepared on purpose, and have these fastened by a string to the plate opposite the centre of each light, so that they may be used easily, and always be at hand when wanted. However small the quantity of air given, even to cold frames, in severe weather, it is always preferable to tilt up the sash instead of sliding it down. When slid down rains are apt to enter at the back, and the cold air strikes the plants at once. When the sash, without being slid, is tilted up at the back, the cold

air cannot at once reach the plants without passing through the warmer air issuing out. For very flat frames or pits good tilters-up may be formed of pieces of board 1 inch thick, 6 inches wide, and 8 inches long, cut diagonally with a saw, so as to form two triangles out of the parallelogram, each of these triangles making a nice tilter; and on raising the sash, by inserting the thin point of the triangle, it is easy to give air from half an inch to 6 inches. When the sashes of frames or pits are more steep, the tilters should be formed of squares 10 inches by 8 inches, cut in two diagonally as above, and then each triangular piece should be cut into three or more square notches like the sloping stage in a greenhouse, as these horizontal cuts in the tilter hold the sash more firmly, in the time of winds especially. The fastening these tilters with a string so as to be always ready, though a simple matter, is a great advantage. If loose, they are always out of the way, covered up, or lost.

The ground being so wet, sowed more Peas in tiles, boxes, and turves under protection, so as to put them out when the ground is nice and mellow. Planted out a lot of Dwarf Kidney Beans in a bed where fire heat can be given, turning them out of small pots when well rooted, and when the soil was nicely warmed for their reception. After this time they do very well in beds; but if we had not been scarce of nine and ten-inch pots, we most likely would have used them in the same place, as they could have been moved at any time—a matter of importance when room under glass is scarce. After this time a syringing in sunny days with clear soot water at a temperature of 90° will do much to keep them healthy and clear of insects. After this, the soil used in growing them may with advantage be more compact and loamy. During winter a lighter loam suits them better.

Placed some Sea-kale and Rhubarb in the Mushroom-house; and spawned in the beginning of the week, and earthed-up in the end of the week, another piece of Mushroom-bed. We have also turned over in the shed some manure for commencing another piece. Managed to catch some great adder-like snails at night; but not before they had scooped out all the gills from the insides of some large Mushrooms. We are never troubled with them on our first beds. No doubt they come in with the material of the later beds. It is of no use looking for them, unless at night. They like fresh brewers' grains rather better than Mushrooms. Woodlice have not yet troubled us, and seldom visit us much in the house until March. Potted-off Cucumbers, and will give some large plants large pots, to fruit in these in a pit where hot water will assist them. Put up a bed for a two-light box for the first out of doors, as we are very short of fermenting material. Turned over some old hotbeds, that after growing Melons had been used for many purposes during winter, as for bedding plants, slowly bringing on Strawberry plants, &c., placing all the very decayed materials in a heap, as we cannot well wheel anywhere owing to the damp and wet, and saving all capable of fermenting again, to mix with some hot tree leaves, so as to give a help to a lot of early Potatoes. A little heat at the bottom assists them very much; too much heat is more apt to encourage tops than numbers of nice tubers. The shooting season being over on Thursday, must try and collect a lot of tree leaves for all such purposes. Set a number of figure-4 traps to catch mice, which are more than usually troublesome this season. Sowed Celery, &c., in pots where a little heat could be given. The Incomparable is a beautiful dwarf White that stands well; but it does not grow so fast for an early taking up as Cole's White and some other kinds. The flavour of the Incomparable is excellent, and we have not for several years seen a run head until well on in the spring. To raise the young Onions out of doors, put a number of large Onions that were beginning to sprout into leaf mould, in a warmish place, to produce small Scallions for salads, instead of so many young Onions. Chives grown in heat come in well also for this purpose. A good stock of Mint, Fennel, Tarragon, and Sorrel, should also be put into heat or under protection, so as to have plenty as wanted. Trenched-out a lot of Horseradish. This always commands a good price in the market, and is best when strong and young.

FRUIT GARDEN.

Proceeded in favourable weather with pruning fruit trees so as to have work forward, and in wet days thoroughly washed the woodwork and glass in the orchard-houses. Vines and Peaches in houses with their roots out of doors should be protected from changes of the weather by litter-thatching and board-coverings. We have done less than usual in this way owing to being scarce of material. In early houses, *Grapes*

coming into bloom, should in this mild moist weather have rather a dryish atmosphere, and the bunches showing bloom should have a dry hand gently passed over them to disperse the pollen. For this purpose, so as to insure good and regular setting, we know no plan of shaking or brushing equal to the gentle touch of a dry hand—that is, doubling the hand, taking the bunch in it, and gently drawing the hand over it. By this means we have found that Muscats set freely, even when they are not in such a high temperature. Note that during the time of Vines being in bloom, it is only in the mild moist weather we have had, that we would recommend the dryish atmosphere at blooming and setting-time. In weather in general, it should not be too dry at such a time, as, if the atmosphere is very dry, the capsule clings so closely round the parts of fructification, that the anthers cannot have full play on the stigma. More moisture in the atmosphere gives more elasticity to the capsule ring, and the anthers have more free play; but in all early forcing of Vines, we would recommend a dry hand being drawn over every bunch when in bloom. This is soon done. The best time is a sunny day.

On the other hand, Peaches when in bloom should have rather a dry atmosphere until the fruit is set. On a sunny day it is well to use a board rapidly waved over the trees to disperse the pollen, or in some cases to use even a feather or a fine camel-hair brush. We have known Peach-houses that showed a fine lot of bloom carry little fruit, because the house was kept much too moist when the trees were in bloom. A drier temperature would have caused them to set more freely. If trees are in bloom now in such mild moist weather, the moisture in the borders will sufficiently counteract the little fire heat that will be necessary. If the weather turned cold and frosty, the paths and borders might be syringed and damped, and a few evaporating-pans might be placed on the heating medium; but whilst Peaches are in bloom anything like steaming hot-water pipes and fires should be avoided.

Figs beginning to move had better be thinned as to the shoots, when it is seen what can best be spared. The shoots left and showing fruit may have the terminal bud nipped through with a knife or between the thumb and finger, which tends to throw the organised sap back to support the young fruit. When the young fruit appears, care must be taken that the roots are not dry, or the fruit will drop to a certainty. If from any cause the soil has become dry, and the dryness is not removed before the fruit shows, then the dry soil must be moistened by degrees. Too much moisture at once will cause the fruit to drop by extra stimulus. After the fruit begins to swell, the plants must be strangers alike to dry roots and stagnant moisture. As we kept in bearing our Figs in-doors a little into November, they are just now beginning to move. From the 1st to the middle of October is late enough for Figs to bear, if an early crop is desired from them. We covered part of our trees out of doors with spruce branches, anticipating a little severe frost; but as the thaw came before we finished, we will let them alone until we see the signs of another frost. Some of these trees we mean to allow to hang a little from the wall in summer. We have proved that where the place is at all sheltered and warm, Figs even out of doors do better when thus treated than when they are pinned-in with nail and shred, or string, to a wall. The remarks at pages 90 and 91 may help to convince others of the same.

Strawberries in pots under a little protection received plenty of air; and those under glass, set on reversed turf, were watered in hot days, and with less care, as there could be no stagnant water. Plants set in saucers were watered with care; and at this season of the year, and in such mild moist weather, no water was allowed to stand in the saucer. In such weather care should be taken that the water is not poured over the crown or bud. Plants in bloom should have all the air possible, and in such dull weather be shaken with a small brush or feather. When the blossom and the farina of the anthers are dry, a large fine feather is as good as anything else for brushing along them, and even the hand passed smoothly along them will do good. In fine sunny days they will set well enough without any such care; but if they do not happen to set, and we have used no means to help them, then we are apt to accuse ourselves, and self-accusations are the worst of all to bear.

Potted off Melon plants, and sowed some more to be in readiness, though as yet we can see but little space we can appropriate to them. If we could, we would always raise young Melon plants in a sweet dung hotbed. The plants generally have thus a vigour and a sturdiness which they rarely have

when raised by another heat in the dry state, either from fires or hot water, though in either of such heats they will flourish very well after they have become stout plants. There are many crops that thrive better in an old-fashioned dung hotbed than by any other heat we can give them. We have grown Cucumbers most successfully from first to last with the help of the old flue, but we never had such nice young plants of Melons from fine heat as from a dung hotbed. There was more trouble at first with dung beds than with hot water, or even with fires; but many gardeners who now have enough of hot water are beginning to feel the want of the old hotbeds for keeping the kitchen garden all right. Some may well extol the efficacy of Cabbage stumps, Pea haulm, rotation of cropping, and rotation of trenching, for that is pretty well all the manure the kitchen garden can have. The old hotbeds were the grand foundation for plenty of luxuriant well-flavoured vegetables.

ORNAMENTAL DEPARTMENT.

Rolled the walks when dry, but not too heavily, so as to make them over-smooth now. Rolled also the lawns, as the worm heaps are becoming rather prominent in this mild, moist weather. Pruned the hardier Roses, Honeysuckles on arches, &c. Gave plenty of air to prevent damping in cold pits and frames. Will soon commence propagating what we are most scarce of for the flower garden; but as yet have little room or heat to spare. Pricked off some Calceolarias, Lobelias, &c., and sowed more Lobelias and Feathered Cockscombs. Potted lots of Geraniums, Fuchsias, &c. Pruned many more of the latter. Took Hyacinths to the house and conservatory, with other forced flowers and shrubs. Fresh regulated the conservatory, taking in a fresh lot of Cinerarias, and likewise fresh regulated the stove. Potting Mosses and Ferns. Brought Gloxinias beginning to show from a dark place to one where they could have more light to induce them to grow before potting them. Did the same as respects Achimenes, &c. Placed Gesnera zebrina where the tubers would ripen. Gave plenty of air and as little damp as possible to hardwooded plants, and in the worst weather proceeded with cleaning plants, washing pots, and preparing straw covers for protection. Made it a point to keep a look out for dry litter, rough hay, Laurel boughs, and Spruce branches, to be ready for temporary protection, for if a severe frost came suddenly, many things would suffer severely from being now so tender, unless, indeed, the frost should be preceded by a good fall of snow. Managed in a dry day to put some burnt earth and rubbish round Holly-hock stems, which will preserve them in the open ground to a great extent alike from wet and frost. Rare sorts may now be taken up with balls and placed in a mild heat for propagating, or suckers may now be removed. Cones of the dry burnt earth will be a good preservative for those left in the open ground.—R. F.

TRADE CATALOGUES RECEIVED.

E. G. Henderson & Son, Wellington Road, St. John's Wood.—*Catalogue of Flower, Vegetable, and Agricultural Seeds.*
 F. & A. Dickson & Sons, 106, Eastgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, &c.*
 Robert H. Poynter, Castle Green Nursery, Taunton, Somerset.—*Retail List of English and Foreign Seeds, &c.*
 John McHattie, 136, Northgate Street, Chester.—*Catalogue of Vegetable and Flower Seeds, Gladioli, Seed Potatoes, &c.*

COVENT GARDEN MARKET.—FEBRUARY 3.

A MARKED dullness has prevailed in our market this week, and all descriptions of out-door and forced vegetables are more than sufficient for the demand. The Potato trade is dull also, and prices are receding in consequence of large arrivals, both coastwise and by rail. We have received a consignment of Pines from St. Michael's of remarkably good growth and quality, varying from 4 to 5 lbs. in weight.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	2 6	to 4 0	Melons.....	each 3 0 5 0
Apricots.....	doz.	0 0	0 0	Mulberries....	punnet 0 0 0 0
Cherries.....	lb.	0 0	0 0	Nectarines....	doz. 0 0 0 0
Chestnuts.....	bush.	8 0	16 0	Oranges.....	100 4 0 10 0
Currants, Red	½ sieve	0 0	0 0	Peaches.....	doz. 0 0 0 0
Black.....	do.	0 0	0 0	Pears (kitchen)..	doz. 4 0 8 0
Figs.....	doz.	0 0	0 0	dessert.....	doz. 4 0 8 0
Filberts.....	lb.	0 0	0 0	Pine Apples....	lb. 6 0 10 0
Cobs.....	100 lbs.	0 0	160 0	Plums.....	½ sieve 0 0 0 0
Gooseberries..	½ sieve	0 0	0 0	Quinces.....	½ sieve 0 0 0 0
Grapes, Hambro	lb. }	10 0	15 0	Raspberries....	lb. 0 0 0 0
Muscats....	lb. }			Strawberries...	lb. 0 0 0 0
Lemons.....	100	6 0	10 0	Walnuts.....	bush 14 0 20 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	each	0	6	10	0
Asparagus.....	bundle	8	0	12	0
Beans Broad.....	bushel	0	0	0	0
Kidney.....	100	3	0	4	0
Beet, Red.....	doz.	2	0	3	0
Broccoli.....	bundle	1	0	2	0
Brus. Sprouts.....	1/2 sieve	2	0	3	0
Cabbage.....	doz.	0	0	1	6
100.....		0	0	0	0
Capsicums.....	doz.	0	4	0	8
Carrots.....	bunch	2	0	6	0
Cauliflower.....	doz.	2	0	6	0
Celery.....	bundle	1	0	2	0
Cucumbers.....	each	2	0	3	0
picking.....	doz.	0	0	0	0
Endive.....	score	1	0	2	0
Fennel.....	bunch	0	3	0	0
Garlic and Shallots, lb.	0	8	0	0	0
Herbs.....	bunch	0	3	0	0
Horseradish.....	bundle	2	6	4	0
Leeks.....	bunch	0	3	0	0
Lettuce.....	per score	1	0	2	0
Mushrooms.....	pottle	1	6	2	6
Must. & Cress, punnet	0	2	0	0	0
Onions.....	per bushel	3	0	5	0
picking.....	quart	0	0	0	6
Parsley.....	1/2 sieve	1	0	1	6
Parsnips.....	doz.	1	0	2	0
Peas.....	quart	0	0	0	0
Potatoes.....	bushel	2	6	4	0
Kidney.....	do.	3	0	4	0
Radishes.....	doz. bands	0	6	1	0
Rhubarb.....	bundle	0	3	1	1
Savoy.....	doz.	0	9	1	0
Sea-kale.....	basket	2	0	3	0
Spinach.....	bushel	3	0	4	0
Tomatoes.....	1/2 sieve	0	0	0	0
Turnips.....	bunch	0	4	0	6
Vegetable Marrows dz.	0	0	0	0	0

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Contry Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

VEGETABLE MARROW (Notice).—Any seedsman who has a large business would supply you if you merely asked for "Vegetable Marrow seed." The fruit ought to be of a whitish green colour, and oval in shape. The "Melon Vegetable Marrow" is for preserving, the jam made from it tasting like Apricots.

ESSEX RIVAL PEAS.—In reference to "NICKERBORR'S" inquiries about my Essex Rival Pea, I wish to say that I shall have much pleasure in giving an answer to his inquiries provided he give in his proper name and place of abode, that being my only reason for taking no notice in the first instance, and I wish to know by what the Pea synonymous to the Essex Rival is called in Leicestershire.—T. ELEY, *Sible Hedingham.*

ICE-PLANT CULTURE (M. S.).—Sow the seeds in light sandy soil in a pot or pan, and if you have the means of potting them off into small pots singly for a week or two it will be all the better. Plant them out on some dry sandy bank in the full sun about the same time as bedding plants are turned out, and they require no further attention. Avoid a windy or cold place, for otherwise the plant will not thrive; usually, however, it is of very easy culture, and looks all the better if well exposed to the sun.

PEAS OF GOOD QUALITY (T. H.).—The varieties most admired at table are the various kinds of Marrow, both Green and White, and they may be sown at intervals of ten days from early spring up to the middle of June, or even later if the situation is moist. The best-flavoured Peas at table are not, however, the best croppers, and many growers prefer some other varieties, of which Champion of England and Veitch's Perfection are good examples. For very early or very late supply recourse must be had to the White kinds, of which there is no lack, all more or less good.

BLOOD MANURE FOR VINE BORDER (Box 5).—We cannot confidently recommend you to use blood manure to an external border unless it is of very limited extent, and full of roots requiring strong feeding. Blood manure has a tendency to sour and sodden the ground to which it is applied, and unless that ground is very light and porous it is better not to apply such substances as blood; we would rather use liquid manure in a clear state, not thick and muddy, for when so it is apt to produce the same results as blood manure. The latter may, however, be mixed in some compost heap, and be made very useful in many ways.

BANKSIAN ROSES BEDED-OUT (S. A. N.).—It is but seldom that we have met with this Rose in the condition you describe—i.e., bedded-out and pegged down, and we fear it will only be in fine seasons that it will do well. It would, however, be well to cut out all rampant shoots early in the season. Some plants that we have against a wall require this to be done twice during the summer, leaving all short spurs, which we shorten in much the same way as in pruning fruit trees, and they bloom abundantly. Other Roses of the same kind against pillars are treated in a like manner. We believe that the same treatment will do for Cloth of Gold; but we have not seen it in any other position than against a wall, and there it is best to thin out some of the longest shoots, and leave some of the shortest at full length. The treatment of this Rose, however, is by no means so satisfactory as it ought to be, or rather its treatment as a bedded Rose has not ensured its success in any but the most favourable situations.

HOTBED FOR STRIKING CUTTINGS (Idem).—There is nothing better than horse-dung for this work, and if there be tree leaves to mix with it so much the better; if not, let the dung be thrown into a heap. As it will heat in a couple of days, let it be turned then, two days afterwards, and also on the fifth day, and if time will allow, let it remain for four days longer, after which time give it another turning; the hotbed may then be made about 3 feet high, and the frame placed upon it. A covering of sawdust forms a good medium for plunging or half-plunging the pots of cuttings or seeds in. Such a bed is invaluable.

LIQUID MANURE (Vector).—To vacant ground about to be dug for planting Cabbage-worts the house sewage may be applied, a bucket to a square rod, and undiluted. For plants in pots it should be mixed with six times its bulk of water. To trees and shrubs growing out of doors in the borders it should be diluted about half as much. Do not apply it to any plant, tree, or shrub, except whilst growth is active in the spring or summer. For four postage stamps you could have, free by post, from our office, "Manures," in which are much fuller directions for the use of house sewage and other liquid manures, &c.

POTATOES (Sheen).—You cannot have better varieties than the Ash-leaved Kidney and the Fluke. Plant very early—not later than beginning of March.

POTATOES (Various).—No Potato does so well after a crop of any Potato the previous year. Change of crop, rotation of cropping, is always desirable. The reference you seek for is No. 231 of this Journal.

VERBENA CUTTINGS (J. F.).—Where the weather was unusually dry Verbena was much infested with thrips last season; and if weakened by these insects, though they were cleaned as well as possible, more than the usual quantity of cuttings would be apt to go off; otherwise there was nothing peculiar in the season to injuriously affect Verbenas, and yet it is true, as you say, that they have not done so well as usual in many places. Will some of our friends state their views on the subject?

VINE PLANTING (W. Ross).—You had better adhere to the old plan. See the article by Mr. D. Thomson. The practice of another head gardener corroborates most of the experiments which he has made.

CHAMBER UNDER GLASS-STRUCTURE (W. F.).—There will no doubt be an advantage in having a chamber beneath the roots of your Vines, heating that chamber at pleasure, having cold air admitted to it at will, and heated fresh air also taken out of it into the house when desired. The clearer these openings are to the pipes placed inside and at the front of the house the better, as all your front air will thus be heated as it enters. With such an arrangement we would have preferred planting the Vines inside. Even without this ventilation from the chamber we do not see why there should be a necessary connection between the three pipes placed at the front of the house, and the drying-up so thoroughly the plants placed on the stage, or the impossibility of setting Muscat Grapes sufficiently thick, as the heat from the pipes may be rendered moist at will, and there is no necessity for giving much air by the front ventilators, except in the hottest weather; even then a great deal of front air often does more harm than good. If your drawing is correct, then we do not see any necessity for your proposed chamber being so deep.

VINES—EARLY POTATO (J. B. Boyd).—The Muscat will do well in the early-house; but it will ripen much later than the Muscadine and Ham-burgh. If the Muscat does so well planted against the back wall of the second house, why risk the moving it all to the front? Let it alone; bring it down the rafter, and cut out one of the Vines in front to allow it to have room. If you must remove one, we would remove one West's St. Peter's. The Muscat is not more subject to shanking than other Grapes if the roots are not too deep, or the Vine too heavily loaded. For Vines and Peaches in a state of rest you may use half a pound to the gallon. Clay and sulphur with enough of water to form a paint, answer very well. For an early crop, nothing beats the Ash-leaved Kidney Potato.

PLANT CASE (O. H., York).—We think your proposed case would answer very well if you could place it inside of a window of clear glass—say 6 feet by 4 feet. We would only deceive you by saying that you could keep bedding plants in it, or propagate them successfully if the case stood in the passage, and had only a very subdued light. In such a case, and in such a position, you might keep a number of the smaller Ferns and Mosses. In a better position for light the case would answer admirably. Instead of the tank being 5 inches deep, we would be better pleased with it if it were 3 inches or 3½ inches. At 5 inches in depth you will find the lower part of the tank comparatively cool.

IRESIANE HERBSTII AND VIOLA CORNUTA (J. G.).—Iresine Herbstii is a dwarf-growing plant, attaining about a foot in height as a bedding plant; and has reddish brown leaves. It is very desirable as a decorative plant; but in the flower garden as a bedding plant its foliage is frequently of a dull dirty brown, inferior to Beet in colour. Viola cornuta is a very free-flowering slate-coloured Violet, with fine deep green foliage, dwarf, and compact-growing, suitable for edgings to beds and front lines of ribbon borders. It does best on moist strong soils. On dry, hot, gravelly, or sandy soils it does not grow sufficiently, nor bloom continuously enough for bedding-purposes.

MANURING LAWN (F. J.).—Failing rich compost or thoroughly decomposed dung, you may sow Peruvian guano over the lawn during showery weather in April at the rate of 2 cwt. per acre, and give another dressing in the first wet weather in June, applying it immediately before rain, so that it may be washed in. The guano should be sifted through a sieve, with a quarter of an inch mesh to free it of lumps, which should be broken and again sifted. Any lumps that cannot be broken put in a tub, and water poured over them at the rate of a gallon to every 2 ozs. of guano, will, if stirred up previous to use, form an excellent liquid manure, either for watering the lawn or plants in a state of growth. Peruvian guano is the best.

SUPPORTS FOR HYACINTHS IN BED (Idem).—Your proposed supports will answer well; but we think you could buy them cheaper than make them. Common Hyacinth supports, which are entirely of wire, and sold by most seedsmen and all dealers in Dutch bulbs, would be nearer than those home-made, and such we recommend you to procure.

PLANTS IN NEWLY-PAINTED STOVE (One in Distress).—We think that the injury to the plants proceeds from the paint, especially as the plants recover when air is given after the house has been closed some time. It is easy to account for bedding plants succeeding well in it whilst stove plants will not do at all, for with the former little or no artificial heat will be required, and the fumes given off by the paint will be very faint, whilst in the case of stove plants the fumes will be stronger from the greater heat and diminished ventilation. Had the paint been put on properly, and each coat allowed to dry before another was given, the small and noxious vapours would have been gone in less than a fortnight after giving the last coat. Perhaps the wood was not dry when first painted. Your only remedy is to leave a little air on constantly.

MELON CULTURE (Heop).—For four postage stamps you can have free by post from our office No. 615 of our Journal. It contains an epitome of Melon culture by Mr. Bailey, late gardener at Nuneham.

LA JARDINIER FRUITIER (W. Terry).—This is published by Didot of Paris, and the price is 5s. monthly.

SCALE ON PEACH AND NECTARINE TREES (A Constant Reader).—Unnail the trees, and wash the trunks and every branch and shoot to its extremity with 8 ozs. of soft soap dissolved in a gallon of water, apply this wash with a half-worn painter's brush, brushing it well into every crevice, and being careful not to dislodge the buds on the last year's wood, as you will do if the brush be used too forcibly. This washing of the trees should be done now; but, if the buds have begun to swell, the wash should only be used at half the strength for the portion of the branches where the buds are, but for the old wood use the full strength. The brushing should be sufficiently hard to dislodge the insects. When the trees become dry paint every part of them with sulphur vivum 2 lbs., an equal bulk of soot, and fresh lime 1 lb., mixed with soft soap solution made by dissolving 8 ozs. of soft soap in a gallon of water if the buds have not swelled; but if they have swelled considerably, then 4 ozs. must be the quantity used. Add sufficient clay to bring the mixture to the consistency of thick paint. Leave no part of the branches untouched, and most of the insects remaining after the washing will thus be killed or stifled. The first wash should be heated to 160° for the main, and 140° for the last year's branches.

COLLECTING WATER FROM GREENHOUSE (An Old Subscriber).—The most economical plan is to have a large hoghead fixed so that the water from the roof can run into it. One such cask well painted will last for a number of years, and if you have two of them holding, say, seventy gallons each, and connected by a lead pipe, you will generally have sufficient rain water for watering the greenhouse. If you object to the hogheads as unsightly, then you may sink them in the ground, and have lids to them, one being covered with soil, and the water will not freeze in them in winter. If preferred you might have a tank of stone or slate, with the joints cemented, sunk in the ground and covered with slate, except an opening to admit a watering-pot, and that opening provided with a wooden lid. We have one of these 8 feet long, 5 feet wide, and 3 feet deep, and it holds sufficient water for a greenhouse in most seasons, but in the course of the last and previous year it was twice empty.

SOWING ACCUBA BERRIES (Idem).—When the berries are ripe, which will be known by their parting readily or falling from the plant, sow them in well-drained pans three-parts filled with turfy yellow loam two-thirds, and one-third leaf soil, and cover with a thickness of fine soil equal to the diameter of the berries. A gentle watering should then be given, and the pan placed in a cold frame. The soil being kept moist the seeds will vegetate, if good, in due season.

PINKS (C. D. H.).—They are evergreen herbaceous plants. The stems die annually, which is a characteristic of the herbaceous, but the leaves are evergreen.

CROQUET GROUND.—An Old Subscriber would be obliged by being informed what are the proper dimensions of a croquet ground.

CUCUMBER (A. P. W.).—The Long Prickly for market, and either Improved Manchester Prize or Hamilton's Surprise for exhibition. We do not know where the Potato, a cross between the Ash-leaved and Lapstone, can be purchased.

LEAVES OF FORCED KIDNEY BEANS SPOTTED (A. E.).—You have thrips on your Beans. On examining the under side of the leaves carefully you will notice a very small narrow-bodied insect that is very quick and jumping in its movements. The best remedy is smoking several times, and a good lashing with clear soot water at about 90°, but thrips are difficult to destroy, as though every one may be dead to-day, you will have a fresh brood ere long. As the Beans are about fit to gather we would advise removing the worst leaves, syringing the plants well with warm water, and taking all the pods you could; then clear all out, burn the plants, and smoke the place with sulphur, if there is nothing else alive in the house. We would then wash stage, walls, and floor, with water as near the boiling point as may be, and, when cleaned, introduce a fresh lot of plants.

APPLICATION TO THE BROKEN PARTS OF TREES (E. P.).—We confess we have not much faith in the practice of using paints or plasters as a preventive to further decay. A limb that is cut off horizontally may have a piece of thin sheet lead bent over the place after the wound has been made smooth to exclude wet; but the effort to resist decay must be made by the tree. It is best to cut off all splinters, leaving as small a wound as possible, and cover that wound with some plastic compound of cow-dung, soot, and clay. Resinous trees will bleed when cut or broken in spite of all application, and so will some kinds of deciduous trees when cut at a season when the sap is rising and the leaves undeveloped.

INSECTS (M. D.).—The little green flies found in the window belong to the genus *Pteromalus*, and are quite harmless in the perfect state. In the larva state they are parasitic in the bodies of other larvae, most probably in those of some wood-boring insect. Has "M. D." any worm-eaten furniture in his house? We fear some other domestic insect has stung, or perhaps bitten, his inmates.—W.

ASSURANCE COMPANY (G. Jackson).—We know nothing of the office. Such a question is not on a subject within our province; but we will add that he who trusts to any of the many recent insurance companies has not the organ of discretion largely developed.

NAMES OF FRUITS (J. E. P.).—Apples: 1, Elenheim Pippin; 2, Holland-bury.

NAMES OF PLANTS (G., Glasgow).—1, *Garrya elliptica*; 2, *Pinus lasiocarpa*; 3, *Cupressus thujaoides*; 4, *Juniperus sinensis*. (T. D.).—2, *Eriostemon myoporoides*; 3, *Cytisus racemosus*; 4, *Acacia armata*; 6, *Veronica Andersoii*; 7, *Arbutus unedo*. (W. P.).—1, *Cyrtanthera lutea*; 2, *Colunnaea*; 3, probably *Lomaria alpina*; 4, *Iris pseud-acorus* var. *variegata*. (J. B.).—*Picea Nordmanniana*. (E. C. E.).—We believe that they are both *Usneae*. No. 1 *U. barbata*, but we are not certain about the other.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 3rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 28	29.976	29.362	50	39	45½	44½	W.	.06	Densely overcast; clear; overcast; rain.
Mon. . . 29	30.018	29.266	45	29	46	44½	S.W.	.00	Clear; fine; cloudy at night.
Tues. . . 30	30.008	29.897	50	39	45	44	S.	.01	Fine; slightly and uniformly overcast; densely overcast at night.
Wed. . . 31	29.951	29.431	54	43	46	45	S.	.38	Fine; deusely clouded; slight showers; mild.
Thurs. . . 1	29.361	29.305	55	45	45½	44	S.W.	.37	Rain; boisterous; but warm at night with S.W. wind.
Fri. . . . 2	29.743	29.251	50	32	49	45	W.	.06	Heavy rain; heavy clouds; fine at night.
Sat. . . . 3	29.897	29.533	49	32	47	46	S.W.	.25	Clear; boisterous, with heavy showers; fine; rain.
Mean. .	29.850	29.435	50.43	36.71	46.28	44.71	....	1.13	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RAILWAY CHARGES—A GOOD EXAMPLE.

As exhibitors of poultry are striving to obtain from railway companies the advantage of having their birds sent back free of charge, which, surely, every reasonable man would consider ought to be the case, I would hold up the South-Western Railway Company as a good example. I have exhibited at various places, and have always been allowed back carriage for my birds by the South-Western Railway Company, and last week the same privilege was again granted to me by this Company, when my birds returned from Walsall. May other companies be induced to see this as a just principle, and follow "a good example."—J. De L. S.

I THINK if secretaries of shows would take the trouble to write to those railway companies over whose lines they expect fowls to travel to and from their shows, and ask that the birds may be allowed to come and go for a single fare, the boon would not often be denied. I had the pleasure of acting as secretary for a show held in the eastern counties last summer, and I took an early opportunity of writing to the Great Eastern Company, asking them to allow the fowls to travel free both ways. I did not succeed in this; but the Company at once

stated, that though they could not accede to my request *in toto*, they would allow all unsold birds to return free. Now, if the Great Eastern, a Company never thought very liberal, had no difficulty in granting the concession I asked for (in part at least), I do not think many of the other companies would refuse to do as much if they were only asked in time, and the case were fairly and temperately laid before them. Of course, they will charge both ways if nothing is said about it, and they are not even asked to concede anything.

It would be better still if poultry exhibitors could induce the principal companies to establish some fixed rule, or rate, for the carriage to and fro of exhibition poultry. A memorial signed by the Poultry Club to each company, would, no doubt, lead to the consideration of the subject, even if we did not at once obtain what we asked for.—P.

I AM glad to see that this matter is likely to be well ventilated, and if your correspondent, "Y. B. A. Z.," or the Poultry Club, will take it in hand, I will be my share towards the expenses incurred, whether arising from the printing of a petition and sending one to the heads of each railway company, or from the appointment of a deputation of, say, six gentlemen, to be nominated by the persons contributing to the fund, to wait on the Directors or Boards of the various companies. The latter course will be much preferable to sending petitions, for I think petitions, as a rule, are hurriedly passed over and do not

receive the attention they demand. Besides, if a deputation wait on the Directors, it can set forth the various grievances much better in a few minutes than can be explained in pages of print, and it might at the same time make the suggestions most likely to remedy the evils complained of. That poultry shows benefit railway companies no one can doubt; therefore, I think the Directors cannot object to meet us on more equitable grounds than at present.

Why cannot a uniform rate be adopted by each company for, say, distances above and under fifty miles on each line, up to an average weight for each hamper—I myself adopt a hamper of about 8 or 9 lbs., and if all exhibitors do the same, the average weight will not exceed 30 lbs.—the charges to be the same either by passenger or van train.

That railway charges are a great drawback to many exhibitors is well known. Take, for instance, the following variety of charges I have had to contend with during the last three months, and could the most enthusiastic poultry fancier patronise the company making such glaring mistakes? I sent to the Darlington Show two hampers, a distance of less than two hundred miles, *via* the Great Western and Midland Railways, for which I had to pay 10s. 9d. by van train; the same fowls and hampers came back for 6s. 7d. by passenger train. I also sent two hampers to the late Chelmsford Show, having to go on two companies' lines, the distance being under 110 miles, and the carriage to and fro was 15s. 3d., besides the birds arriving at the Show some five hours and a half too late for competition, though I took the precaution to ascertain from the railway officials at the starting point whether they would be delivered in time. In consequence of this I paid both fare and entrance fees for nothing, and am then informed by the Secretary of the company on whose line the delay occurred, that they are not responsible, though they detained the fowls some fourteen hours.

I think that a uniform rate will be much better understood than the present mode of charging, and the company sending the fowls back for nothing. If both advantages can be secured so much the better. Why cannot the "frank" system be adopted, just as in the case of the newspapers carried by most railway companies? In my opinion its adoption would be a great boon, for exhibitors would then be able to ascertain at a glance the amount they would have to pay for carriage, which, at present is an impossibility, more especially when the birds have to go over two lines.

I think the Poultry Club being a body, will be the most likely to take the matter in hand; and the sooner something is done to bring about a remedy the better, for the grievance is very great at present.

I also think that every praise is due to "Y. B. A. Z." for his able article, and liberal offer to assist as far as lies in his power in bringing about reform. Do not let either names or funds prevent the affair being gone into in a thoroughly systematic way; and if all the principal exhibitors will attach their names to a petition, and express their willingness to contribute their share of the expenses incurred, the amount for each to pay will not be very great. As the charges stand at present we are great losers.—CAXTUS.

NANTWICH EXHIBITION OF POULTRY AND PIGEONS.

The promoters of this Exhibition have now for the period of seven years seen their Show annually improving, and certainly the meeting of last week presented to public view one of the best collections of both poultry and Pigeons at any local Show that we have seen for some time. Being ever willing to take advantage of the experience of former meetings, this Committee always seem to look forward only to the improvement of their annual Exhibition; no petty jealousies ever intrude upon the harmony of their actions, and hence in no small degree may be traced the almost unalloyed success that has attended it from its first institution. The Town Hall at Nantwich is exceedingly well calculated to afford a perfect light to every pen, and the show pens of the Society are very superior in their arrangement, whether considered merely as to the easy public inspection of the competing stock, or as offering perfect protection from outbreaks of temper between neighbouring competitors. The patronesses and patrons of the Society embrace almost every family of distinction in the neighbourhood, and consequently, under such favourable auspices the continued success of the Nantwich Poultry Show is fully secured.

Spanish fowls headed the list, and, as truthful journalists, we must say not only was this breed not so good as at some of the previous meetings of the Society, but also that there was an extreme amount of

trimming of the faces in some of the pens. The Aylesbury Ducks were excellent, nor were the Honens less deserving of our especial notice. *Geese*, as is always the case at Nantwich, were of extreme merit, Mr. Burgess, of Burleydam, exhibiting both Embdens and Toulouse that would be hard to beat at the largest of poultry meetings; nor can we speak otherwise than with equal praise of the two splendid pens of Cambridge Turkeys exhibited by the same gentleman. Of White Dorkings only one pen was entered, but they proved very good. The Grey Dorkings were extraordinarily fine well shown birds, Mr. Burgess again being a most successful exhibitor, with specimens of great merit and of exceedingly good plumage. The Hon. Mrs. Sugden exhibited some extraordinarily good Buff Cochins, as did Mr. Tudman, of Ash Grove, Whitechurch, Partridge-feathered ones. It is very rarely that so nice a collection of White Cochins is to be met with, though very limited in number, being only three pens. In the Selling Class were shown some perfect Silver Polands and some very fine Dark Brahmals, all of which speedily changed hands. The Committee's silver cup, open to all England, for the best pen of Game fowls, regardless of breed or colour, caused much sensation and a hard competition. Mr. J. Fletcher, of Stoneclough, near Manchester, was the successful competitor, with a marvellously well-shown pair of Brown Reds. It is a very rare occurrence to witness so great a perfection of feather, combined with such faultless condition, as existed in this pen; but it must not be for a moment supposed that the competition was an easy one, Messrs. Burgess, Galley, Green, and Dyas, showing pens that it would be difficult to beat when shown in the good condition that they were. The other Game classes were confined as to the competition to within a circle of thirteen miles of the place of exhibition, as in fact was the whole show, except the one class for Game before referred to. All these general Game classes were very good, and we were glad to observe, so far as trimming of feathers was concerned, that not a single attempt at deception was discovered. There were, however, we are sorry to say, three or four cases in which spurs had been most extensively tampered with in old cocks, in the hope to make them do good duty as cockerels. They were necessarily disqualified, but we are bound to say that we never before saw any attempt of like kind so artistically carried out. The Game hens were very good indeed, for the game amateurs around Nantwich are evidently breeders quite as much for the pit as for the exhibition pen. For exhibition, a greater amount of care in matching the colour of the legs would be most desirable. For the Nantwich Victuallers' Cup the excellent Brown Red cockerel that proved the winner was soon claimed from Mr. Edwards, of Nantwich, at the price put upon it—viz., five guineas. The Spangled Hamburgs were all good, but the Golden varieties were undoubtedly the best of them. The Pencilled Hamburgs were not so well shown as they might have been. The Silver Polands were perfection. The Game Bantams were not so good as we expected to find them.

Although the Rochdale Show, held simultaneously, no doubt took away a portion of the visitors, the attendance was perhaps greater than at any previous Nantwich meeting. Mr. Rhodes, the indefatigable Secretary, was unremitting in his exertions to please every one, and the success of the meeting may be attributed to a considerable extent to that gentleman's exertions.

SPANISH.—First, J. Siddorn, Over Lane. Second, G. F. Ward, Wrenbury. *Chickens*.—First, J. Dean, Wharton. Second, J. Siddorn. Commended, J. Heath, Nantwich.

DUCKS (Aylesbury).—Prize, Mrs. Hornby, Darnhall. Highly Commended, Mrs. Hornby.

DUCKS (Ronen).—First, H. Prince, Nantwich. Second, T. Burgess, Burleydam. Highly Commended, T. Burgess.

DUCKS (Any other variety).—Prize, T. Whittingham (Muscovy).

GEESE.—First and Second, T. Burgess. Commended, W. Furnival, South.

TURKEYS.—First and Second, T. Burgess. Highly Commended, E. Bowers, Broad Lane.

DORKINGS (White).—Prize, Mrs. Tollemache, Dorfold.

DORKINGS (Grey).—First, and Silver Cup for the best pen of fowls in the Exhibition, T. Burgess. Second, J. G. Pearson, Market Drayton. *Chickens*.—First and Second, T. Burgess.

COCHIN-CHINA (Cinnamon, Buff, or Partridge).—First, Hon. Mrs. Sugden, Stapely House. Second, E. Tudman, Ash Grove. *Chickens*.—Prize, E. Tudman. Highly Commended, J. Withinslaw, jun., Nantwich.

COCHIN-CHINA (White).—Prize, G. Williamson, Nantwich. *Chickens*.—Prize, J. Dodd, Minsbull Vernon. Highly Commended, J. Dodd.

COCHIN-CHINA Cock (Sweepstake).—Prize, Hon. Mrs. Sugden.

SELLING CLASS.—First, G. Williamson (Polands). Second, J. Heath, Nantwich (Brahmas).

GAME.—Cup, First, and Third, J. Fletcher, Stoneclough. Second, T. Burgess. Fourth, A. B. Dyas, Madley, Salop. Highly Commended, W. Galley, Nantwich; — Green, Thornton-le-Moors.

GAME (Black Reds).—First, R. Ashley, Nantwich. Second, J. Thrusfield, Lightwood Green. *Chickens*.—First, T. Moore, Canal Wharf. Second, G. Warren, Market Drayton. Third, J. Whalley, Larden Green.

GAME.—(Brown Reds).—Prize, T. Burgess. Highly Commended, T. Burgess. *Chickens*.—First, T. Whittingham. Second, T. Burgess. Third, R. Ashley.

GAME (Any other than Black or Brown Reds).—First, R. Ashley (Duckwing Grey). Second, Miss Sadler, Whitechurch (Duckwing Grey). Third, R. Crewe, Burland (Grey). Highly Commended, J. Heath (Duckwing Grey). *Chickens*.—First, R. Ashley (Duckwing). Second, Miss Sadler (Duckwing). Third, R. Ashley (Pile). Commended, A. Robinson, Wrenbury (Duckwing); T. Burgess (Pile).

GAME COCK (Sweepstake).—Prize, J. Withinslaw, jun. (Black Red). Highly Commended, H. Oakes, Nantwich (Brown Red). Hon.—First, R. Ashley. Second, W. Galley, Nantwich (Brown Red). Third, T. Burgess (Brown Red). Highly Commended, G. Basford, Nantwich.

HAMBURGHS (Spangled).—First, T. Burgess. Second, J. Gleave, Church Lawton. Highly Commended, S. Armstrong, Radnor Green. Commended, J. Hitchenson, Davenham.

HAMBURGHS (Pencilled).—First and Second, J. Gleave.

POLANDS.—Prize, J. Heath. Highly Commended, J. Heath. *Chickens.*—Prize, J. Heath. Highly Commended, J. Heath.

POLAND COCKS (Sweepstake).—Prize, J. Heath.

ANY OTHER VARIETY.—First, J. Heath (Brahmas). Second, W. B. Etches (Brahmas). Highly Commended, Hon. Mrs. Sugden.

GAME COCKEREL (Any colour).—First and Cup, S. Edwards, Nantwich (Brown Red). Second, T. Burgess. Third, E. Bowers (Brown Red). Fourth, D. Basford (Brown Red). Highly Commended, T. Burgess; E. Bowers (Brown Red). Commended, R. Roberts, Ravensmoor (Brown Red); J. Pedley, Nantwich (Brown Red); Messrs. Church & Holding, Nantwich (Brown Red).

GAME COCKS (Any colour).—First, J. Walley (Black Red). Second and Fourth, T. Burgess. Third, T. Latham, Nantwich. Commended, T. Burgess; E. Bowers (Brown Red).

GAME BANTAM COCKS (Sweepstake).—First, J. G. Pearson, Drayton. Second, T. Burgess. Third, E. B. Sugden. Commended, T. Stanyer. Crown Id.

GAME BANTAMS (Any colour).—First, T. Burgess. Second, W. Griffiths, Nantwich. Third, R. Ashley.

BANTAMS (Any other than Game).—Prize, G. Williamson (Gold-laced). Commended, T. Butler, Middlewich (White).

RABBITS (Long-eared).—First, T. Gaman, Nantwich. Second, W. J. Sheen, Tilston.

RABBITS (Heavy).—First, W. J. Sheen. Second, T. Gaman.

PIGEONS.

In *Pigeons* the Show was a very strong one. Carriers, Powters, Barbs, and Tumblers, being very good. Again, Fantails, Jacobins, Trumpeters, Owls, and Turbits, were well shown. Among the class for varieties we noticed some excellent Spots, and some very inferior Porcelains shown as Icelanders. In the Dove class were some extraordinarily good White ones.

CARRIERS.—First, S. Clift, Nantwich. Second, J. Withinshaw, jun.

DRAGONS.—First, J. Withinshaw, jun. Second, S. Clift.

POWTERS.—First, J. Withinshaw, jun. Second, E. Rutterworth, Nantwich. Commended, J. Peak, Ravensmoor; J. Dutton, Dunbury.

BARBS.—First, J. Withinshaw, jun. Second, J. Hockenhill, Nantwich. Highly Commended, J. Hockenhill; C. Grocott, Nantwich.

NUNS.—First, J. Dutton. Second, J. Withinshaw, jun.

TUMBLERS (Any variety).—First and Second, T. Crawley, Tarporley. Extra First, J. Dutton (Red Beards). Highly Commended, C. Grocott (Short-faced); J. Dutton (Silver).

FANTAILS.—First, J. Withinshaw, jun. Second, J. Chesters, Nantwich. Highly Commended, J. Dutton. Commended, E. Butterworth; J. Dutton.

JACOBINS.—First, J. Hockenhill. Second, J. Withinshaw, jun. Highly Commended, J. Dutton.

TRUMPETERS.—Extra, First, and Second, J. Dutton. Highly Commended, J. Withinshaw, jun. Commended, J. Withinshaw, jun.

OWLS.—First, S. Worsley, Nantwich. Second, J. Dutton. Highly Commended, R. Betley, Nantwich; J. H. Nixon, Nantwich.

TURBITS.—First, J. Dutton. Second, J. Withinshaw, jun. Highly Commended, J. Withinshaw, jun.

ANY OTHER VARIETY.—First, J. Dutton (Spots). Second, J. Hockenhill (Icelanders). Highly Commended, J. Withinshaw, jun. (Magpies). Commended, J. Dutton (Archangels).

DOVES.—First, J. Cooper, Nantwich. Second, J. Hockenhill. Highly Commended, W. Venables, Whitechurch; F. Peak, Hough Road.

SINGING BIRDS.

CANARIES (Yellow).—Extra, First, and Second, S. Williamson, Nantwich. Highly Commended, S. Williamson. Commended, A. Tomlinson, Nantwich.

CANARIES (Buff).—First, R. Green, Nantwich. Second, S. Williamson. Highly Commended, A. Tomlinson. Commended, S. Williamson.

CANARIES (Various).—First, S. Williamson. Second, R. Green. Highly Commended, H. Prince. Commended, S. Williamson.

SELLING CLASSES.

LINNETS (Brown).—Prize, S. Williamson. Highly Commended, C. Emery, Nantwich. Commended, T. Williamson, jun. Nantwich.

LINNETS (Red).—First, S. Williamson. Second, T. Williamson, jun. Highly Commended, R. Williamson, Nantwich. Commended, R. Williamson.

SKYLARKS.—First, J. Willett, Nantwich. Second, D. Robinson, Nantwich. Highly Commended, J. Willett. Commended, T. Williamson, sen., Nantwich.

BULLFINCHES.—First, S. Williamson. Second, R. Williamson. Highly Commended, R. Williamson. Commended, W. Williamson, Newtown.

The Judges for Poultry were Edward Hewitt, Esq., of Sparkbrook, Birmingham, and Richard Teebay, Esq., of Fullwood, Preston; and the prizes for Pigeons were awarded by Charles Cotten, Esq., of Crewe, and Charles Bowles, Esq., of Chester.

NATIONAL POULTRY EXHIBITION AT ROCHDALE.

THE first Exhibition of the above Club was held at Rochdale on Friday, Saturday, and Monday last in a newly erected mill, the property of Mr. J. L. Stott, kindly lent for the occasion. We can congratulate the Club on succeeding in bringing together such a collection of birds as has never been shown previously in Lancashire. The entries numbered 956 pens, and, considering that the prize money offered did not exceed £200, we think that with the limited time the Poultry Club had at their command the result must be highly satisfactory to all concerned. A local Committee, forming a very effi-

cient staff, carried out the arrangements of the Show in the most able manner; and with the aid of Mr. Zurhorst, the Hon. Sec. of the Poultry Club, who is a host in himself, the Show was an immense success.

To commence with a few remarks on the various classes. Buff *Cochins* headed the list, and, although the entries were very numerous, the class was not particularly strong. Mr. Jennison won the cup with a pen leaving little to be desired. The other prize birds were also good. In *Cochins*, Brown or Partridge, Mr. Stretch's cup birds were very good; the competition, however, was unusually severe, Messrs. Tudman and Wood's representatives being of great merit. In White or Black *Cochins* Mr. Chase secured the cup with a fine pen in marvellous condition. *Dorkings* were a large class, numbering forty-five pens, and Lady Holmesdale added another trophy to many others by winning Captain Heaton's cup with her well-known rose-combed birds. White *Dorkings* were a small class, but the prize birds were excellent. *Spanish* formed one of the best classes in the Show; Mr. Jones's first-prize pen being particularly conspicuous, the hen being one of the best we ever saw. Many of the competing pens showed unmistakable effects of over-exhibition. Dark *Brahmas* were both numerous and good. Mr. Pickles had the cup with a very fine pen, after an extraordinarily close competition with Messrs. Munn and Boyle. Light *Brahmas* were also good; Mr. Pares's prize pen, however, had an easy victory. *Criee Coues* were a curious class; the cup was given to unquestionably the best birds, belonging to Mr. Zurhorst. *Hamburghs*, as might be expected from the locality, mustered very strongly, and were of remarkable quality, the most noticeable being Sir St. George Gore's Silver-pencilled. In the class allotted to them both the cup and second prize went to the same yard. The prizes in the other *Hamburgh* classes were well merited. In *Polands* capital White-crested Blacks were shown, as well as very fine Golden and Silver specimens. *Game* were a strong competition, Sir St. George Gore taking the cup for Black Reds with a capital pen. Brown Reds were not so well represented; Mr. Fletcher had the first and second prizes, but the birds winning the latter were deficient in quality. In *Duckwings* and *Game*. Any other variety, Mr. Fletcher had both first prizes, the first *Duckwings* were coarse and loose in feather, and much inferior to the third-prize pen; the second-prize pen contained a very inferior hen, accompanied by a squirrel-tailed cock. A very good pen received high commendation. *Game Bantams* were largely exhibited, three classes being set apart for them—namely, Black Reds, Brown Reds, and *Duckwings*; the former were very fine, but the cup was awarded to *Duckwings*. The first Brown Reds were particularly good in feather, but rather too lengthy and drooping in wing. Laced, White, and Black were all well represented.

Ducks were a fine collection, but we were surprised to find the first-prize *Aylesbrys* contained a drake with an unmistakably yellow bill. *Rouens* were large, but the colour of the Duck in the prize pen was objectionable.

The Single Cock classes were well filled. The prize *Dorkings* of Lady Holmesdale and Mr. Harvey were both of very great excellence, and a most severe contest for the principal positions resulted in decisions in the order named. The single *Hamburgh* prize cocks were also very fine, the prizes being judiciously awarded. In the like classes for Single Black Red Game Cocks there was a good competition. The cup for the best single bird in each variety of Reds was awarded to Mr. Fletcher for a Brown Red cockerel, short in head, but well shown. Mr. Brierley was second with a remarkably good bird.

COCHIN-CHINA (Cinnamon or Buff).—Cup, C. Jennison, Belle Vue, Manchester. Second, C. W. Brierley, Middleton. Third and Fourth, T. Stretch, Ormskirk. Very Highly Commended, Hon. Mrs. Arbutnot, Inchmartine, Inchture, N. B.; H. Tomlinson, Birmingham; J. Cattell, Birmingham. Highly Commended, J. Braddock, York; A. Fenton, Rochdale; C. Jennison. Commended, R. White, Sheffield; E. Yeardley, Wisewood; W. Wood, Sheffield; C. Jennison; R. W. Boyle; G. Fell, Warrington.

COCHIN-CHINA (Brown or Partridge).—Cup, T. Stretch. Second, E. Tudman, Whitechurch. Third, J. Wood, Chorley. Very Highly Commended, J. Bell, Thirsk; T. Stretch. Highly Commended, E. Tudman; T. Bott, Bury, Lancashire; J. Stephens, Walsall. Commended, J. K. Fowler, Aylesbury; J. Horrocks, Middleton; J. Stephens; T. Stretch.

COCHIN-CHINA (White or Black).—Cup, R. Chase, Birmingham. Second, F. W. Zurhorst, Dundrum, Dublin. Third, Rev. F. Taylor, Keastwick. Highly Commended, Rev. F. Taylor; W. Dawson, Hopton, Mirfield; W. A. Taylor, Manchester; Messrs. W. and J. Copple, Eccleston; R. Chase; Hon. Mrs. Arbutnot. Commended, F. W. Zurhorst; R. Smalley, Lancaster.

DORKINGS (Coloured or Silver-Grey).—Cup, Viscountess Holmesdale, Linton Park. Second, A. Fenton. Third, Sir St. G. Gore, Bart., Works-worth, Derbyshire. Fourth, Mrs. Hurt, Derby. Highly Commended, T. Rogers, Manchester; J. F. Newton, Kirby-in-Cleveland; A. Fenton; Messrs. W. and J. Copple; Hon. Mrs. Arbutnot. Commended, R. P. Williams, Dublin.

DORKINGS (White).—First, H. Lingwood, Needham Market, Suffolk. Second and Commended, J. Robinson, Garstang.

SPANISH.—First and Fourth, E. Jones, Clifton, Bristol. Second, Viscountess Holmesdale. Third, H. Lane, Ashley Road, Bristol. Highly Commended, Miss D. Pennant, Bangor, North Wales; J. Newton, Silsden, near Leeds; W. Rone, Park Street, Bristol; J. Marchant, Hanson Lane, Halifax; A. Fenton; E. Jones; F. Crook, Forest Hill, Kent; W. Harvey, Bank Street, Sheffield; A. Heath, Calne, Wilts. Commended, A. Fenton; R. B. Postans, Brentwood.

BRAMA POOTRA (Dark).—Cup, J. H. Pickles, Bridgeroyd, near Todmorden. Second, J. Munn, Shawclough, near Manchester. Third, R. W. Boyle. Extra Third, H. Lacy. Highly Commended, T. Pomfret, Preston; H. Lacy; F. Powell, Knaresborough; W. Hargreaves, Bacup; J. Wright,

Woodbridge, Suffolk; G. H. Roberts, Penwortham, near Preston. Commended, T. Poutret; R. W. Boyle; F. Powell; G. H. Roberts; J. K. Fowler; Hon. Mrs. Arbuthnot.

BRADIA POUTRA (Light).—First, J. Pares, Childown Hall, Chertsey. Second, H. Lucy. Highly Commended, E. Pigeon, Lymington; J. Boothby, Market Place, Stockport; J. Stevens, Macclesfield; Hon. Mrs. Arbuthnot. Commended, J. Pares; E. Sheerman, Chelmsford.

CREVE CUCURS.—First, F. W. Zurhorst. Second, Hon. Mrs. Arbuthnot. Third, National Poultry Club (Limited), Bromley, Kent. Highly Commended, Mrs. Hart. Commended, Mrs. Hart.

HAMBURGH (Golden-pencilled).—First, J. E. Powers, Biggleswade, Beds. Second, Sir St. G. Gore, Bart. Third, W. Pearce, Hartford, Northwich. Very Highly Commended, A. K. Wood, Burnside, Kendal. Highly Commended, C. Tattersall, Waterfoot, near Manchester; Miss A. Wrigley, Tonge Lane, Middleton; T. B. Williams, Rochdale. Commended, F. Pitts, jun., Newport House, Isle of Wight; S. Smith, Northowram, Halifax; J. P. Rigg.

HAMBURGH (Silver-pencilled).—Cup and Second, Sir St. G. Gore, Bart. Third, B. Fitton, jun., Turf Lane, Royton. Highly Commended, S. Taylor, Hibbotsholme, Windermere; Viscountess Holmesdale; J. Preston, Allerton, near Bradford. Commended, A. K. Wood.

HAMBURGH (Golden-spangled).—First, J. Roe, Hadfield, near Manchester. Second, T. Waring, Preston. Third, A. K. Wood. Highly Commended, Sir St. G. Gore, Bart.; N. Marlor, Denton, near Manchester; R. Hurst, Rochdale. Commended, H. E. Emberlin, Leicester; J. Ogden, Hollinwood; Commended, E. Tate, Leeds.

HAMBURGH (Silver-spangled).—First, A. K. Wood. Second, Sir St. G. Gore, Bart.; Third, J. Fielding. Highly Commended, J. Fielding; J. Robinson, Vale House, near Garstang; Miss E. Beldon, Bingley, Yorkshire. Commended, J. Stephenson, Whitfield, Crompton; Rev. W. Serjeantson, Shrewsbury.

HAMBURGH (Black).—First, Sir St. G. Gore, Bart. Second, R. Battersby, Heywood. Third, J. Clegg, jun., High Crompton, near Rochdale. Highly Commended, Miss E. Beldon; G. Lingard, jun., Selly Oak, near Birmingham; J. Fielding. Commended, W. Harrison, Gorse Hill, Heywood; C. Sidwick, Keighley; R. F. Goodwin, Middleton.

POLANDS (Black, with White Crests).—First, J. Smith, West Lane, Keighley. Second, P. Unsworth, Lowton, near Warrington. Third, S. Farrington, Astly, near Manchester. Commended, P. Unsworth; J. Smith.

POLANDS (Any other variety).—First, Sir St. G. Gore, Bart. Second, Miss E. Beldon (Silver). Third, W. D. Seed, West Bank, Rochdale (Silver-spangled). Highly Commended, Miss E. Beldon (Golden); W. Sylvester, Hamnden Kiew, near Sheffield; J. Hinton, Hinton, near Bath (Silver); Commended, W. Sylvester (Golden); Mrs. Procter, Hull (Silver).

GAME (Black-breasted Red).—Cup, Sir St. G. Gore, Bart. Second, W. Webster, Whitwell, Chesterfield. Third, A. B. Dyas, Madeley, Salop. Fourth, W. M. Stobart, Darlington. Highly Commended, E. C. Gilbert, Penkridge; S. Mathew, Stowmarket.

GAME (Brown-breasted Red).—First and Second, J. Fletcher, Stoneclough, near Manchester. Third, J. Anderson, Ruthven House, Meigle, N. B. Fourth, S. Mathew. Highly Commended, Sir St. G. Gore, Bart.; J. Smith, Breder Hills, Grantham; A. Fenton.

GAME (Duckings and other Greys and Blues).—First, J. Fletcher. Second, J. Knowles, Old Trafford, Manchester. Third, Sir St. G. Gore, Bart. Highly Commended, Messrs. J. and A. Briggs, Snickbeck Farm, Rawdon. Commended, J. Goodwin, Bakewell, Derbyshire.

GAME (Any other variety).—First, J. Fletcher (Piles). Second, T. West, Eccleston, Lancashire (Piles). Third, J. D. Newsome, Batley, Yorkshire (Black). Highly Commended, T. Whitaker, Melton Mowbray (Piles). Commended, Messrs. Bullock and Rapson, Leamington (White); H. C. Mason, Leeds.

GAME BANTAMS (Black Red).—First, Sir St. G. Gore, Bart. Second, C. W. Brierley. Third, J. W. Morris, Rochdale. Highly Commended, A. Fenton; G. Maples, jun., Wavertree, Liverpool; R. E. Postans.

GAME BANTAMS (Brown Red).—First, Miss E. A. Crawford, Farnfield, Notts. Second and Third, D. Parsons, Cherdon, near Preston.

GAME BANTAMS (Any other variety).—Cup, R. Swift, Southwell, Notts (Duckings). Second, R. B. Postans (Duckings). Third, J. Crossland, jun., Wakefield (Duckings).

BANTAMS (Gold or Silver Sleight).—First and Second, M. Leno, Dunstable (Gold-laced and Silver-laced). Highly Commended, J. and A. Briggs (Gold); T. Davies, Newport (Silver); C. Spary, Markyate Street, Dunstable (Gold). Commended, S. Farrington; R. Adams, Handsworth (Silver).

BANTAMS (White, Clean-legged).—First, Sir St. G. Gore, Bart. Second, Rev. F. Tearle, Leicester. Highly Commended, C. W. Brierley; H. Draycott, Humberstone, near Leicester. Commended, Rev. F. Tearle; W. J. Cope, Barysley, Yorkshire; H. Draycott.

BANTAMS (Black).—First, E. Hutton, Pudsey, Leeds. Second, T. Davies. Highly Commended, H. Draycott; Sir St. G. Gore, Bart.; Rev. F. Tearle.

ANY OTHER VARIETY.—First and Fourth, National Poultry Company (Limited) (Houdan and La Fleche). Second, F. W. Zurhorst (Sultans). Third, W. Wood (Malays). Fifth, J. D. Newsome (Cochin-China). Highly Commended, P. W. story, Davenby; F. W. Zurhorst (La Fleche); Mrs. Wollerstan, Tamworth (La Fleche); J. Hinton (Malays); G. W. Brierley; National Poultry Company (Limited) (Houdan); R. Hurst (Sultans); G. Huxler, Stillingfleet, York (Malay). Commended, E. Pigeon (La Fleche); H. Savile (Silky Japanese).

DUCKS (Rouen).—Cup, Sir St. G. Gore, Bart. Second, T. Wakefield, Newton-le-Willows, Third, A. Fenton. Highly Commended, J. K. Fowler, Commended, J. Nelson, Heaton Mersey.

DUCKS (Aylesbury).—First, A. Potts, Hoole Hall, Chester. Second and Third, Miss G. Leech, Greave, near Rochdale. Highly Commended, H. Jones, Denton, Aylesbury; J. Skinner, Maunde.

DUCKS (Any other variety).—First, E. Hutton. Second and Highly Commended, J. Jennison (Carolinans, Pintail, and Teal).

GESE (Any variety).—First, O. A. Young, Driffield, Yorkshire (White). Second, J. K. Fowler (Toulouse). Third, Hon. Mrs. Arbuthnot (Mottled).

TURKEYS.—First, J. Smith. Second, Hon. Mrs. Arbuthnot (Cambridge, Wild American). Third, J. Wood.

SINGLE COCKS.

COCHIN-CHINA (Cinnamon or Buff).—First, G. Fell. Second, T. Wrigley, jun. Third, T. Wrigley, sen. Highly Commended, F. W. Zurhorst; J. Horrocks; H. Tomlinson. Commended, W. Dawson.

COCHIN-CHINA (Any other variety).—First and Third, E. Tudman.

Second, J. Wood (Partridge). Highly Commended, F. Crossley, Eland; E. Smith, Middleton, near Manchester. Commended, T. Stretch (Partridge).

DORKING (Any colour).—First, Viscountess Holmesdale. Second, W. Harvey. Third, J. Robinson, Vale House, Garstang. Highly Commended, R. P. Williams; J. White, Warlaby, North Allerton. Commended, Sir St. G. Gore, Bart.

SPANISH.—First, E. Brown, Sheffield. Second, Messrs. Burch & Boulter. Third, J. Hartley, Rochdale.

HAMBURGH (Golden-pencilled).—First, Miss E. Beldon. Second, J. E. Powers. Highly Commended, J. Robinson, Vale House, Garstang; Messrs. Burch & Boulter. Commended, Sir St. G. Gore, Bart.

HAMBURGH (Silver-pencilled).—First, Miss E. Beldon. Second, Sir St. G. Gore, Bart. Highly Commended, J. Rhodes, Acerrington; J. Preston. Commended, J. Robinson, Vale House, Garstang; Messrs. Hindle and Furness, Acerrington; E. E. M. Roys, Rochdale.

HAMBURGH (Golden-spangled).—First, Mrs. J. Wright, Melton Mowbray. Second, Sir St. G. Gore, Bart. Highly Commended, Miss E. Beldon. Commended, J. Roe; A. K. Wood.

HAMBURGH (Silver-spangled).—First, S. Smith. Second, Sir St. G. Gore, Bart. Highly Commended, G. E. Hardman, Rawtenstall; J. Fielding; Miss E. Beldon. Commended, J. Robinson, Vale House, Garstang.

GAME (Black Red).—First, E. C. Monk, Fleetwood. Second, W. Phillips, Worcester. Third, Sir St. G. Gore, Bart. Highly Commended, J. Fletcher; C. W. Brierley; Sir St. G. Gore, Bart.; A. B. Dyas.

GAME (Brown Red).—Cup, J. Fletcher. Second, C. W. Brierley. Third, Sir St. G. Gore, Bart. Highly Commended, Hon. H. W. Fitzwilliam, Wentworth Woodhouse, Rothorham; Sir St. G. Gore, Bart.

PIGEONS.

The show of Pigeons was scarcely equal in quality to that of the poultry, although many good birds competed. In Single Pouter cocks Mr. Fulton was first with a White, indifferent in shape, and rather thinly covered in limb, a good Blue being second; but Mr. Harvey's highly commended White was much the best in the class, being fine in shape, with nicely-covered limbs, and much longer in feather. Blue Pouter hens were first and second; the former was very handsome, and the latter extremely inferior, being bare-shinned, with the legs placed on the body like stilts, and without any pretension to rose pinion, or half-moon, in addition to a dingy colour. A very fine highly commended Black hen should have had first position. Carriers formed two good classes; very stout Black cocks and two extremely promising hens had the prizes. Tumblers had four classes, and the most noticeable were Mr. Oates's Blue Beards and Mr. Fulton's Almonds and Black Mottles, all of which deserved their positions in the prize list. Barbs were good, Mr. Robinson's wonderful Blacks having first place. In Owls the first-prize pen (Whites) contained a hen much out of condition, being minus the feathers at the back of the head, the second prize went to good Blues. In Fantails and Turbits some of the best birds were unfit for competition. In Any other variety, Swiss Pigeons were first, Siberian Ice Pigeons second and extra second, the best pair taking the latter position, Jacobins third, and Isabels extra third.

The cup for the most successful exhibitor fell to Mr. J. Fielding, jun., of Rochdale.

It is with great regret we have the unpleasant duty of recording a villainous tampering with Pigeons, happily previously unknown at our Pigeon Shows. Prior to the judging several pairs of birds, including the best Turbits and Fantails, had been deliberately plucked, the entire frills of the former and the greater portion of the tail feathers of the latter having been removed, and on search being made the removed feathers were discovered concealed near the end of the pens. At a meeting of the Club the utmost indignation was expressed at this dastardly trick, and it was unanimously resolved to take immediate steps for the discovery of the offender, and with that view a reward of £10 was offered for such information as would lead to the detection of the guilty party. The birds belonged to Mr. Thackeray, Mr. Robinson, and Mr. Yardley.

POWTERS.—Cock.—First, R. Fulton, Duke Street, Deptford. Second, J. R. Robinson, Nile Street, Sunderland. Highly Commended, W. Harvey. Hens.—First and Second, W. A. Borth. Highly Commended, H. E. Emberlin, Leicester; J. R. Robinson, Nile Street, Sunderland. Commended, J. Thackeray, Petergate, York; J. Fielding, jun.

CARRIERS.—Cock.—First and second, T. Colley, Sheffield. Highly Commended, J. Thackeray; F. Else, Bayswater, London. Commended, G. Ure, Dundee. Hens.—First, F. Else. Second, W. Massey, Fulford, York. Highly Commended, J. Fielding, jun.; G. H. Roberts. Commended, T. Colley.

DALDS.—First, E. E. M. Roys. Second, J. Thackeray. Highly Commended, J. Fielding, jun.

BEARDS.—First and Second, W. H. C. Oates, Besthorpe, Newark.

TUMBLERS (Almond).—First and second, R. Fulton. Highly Commended, J. Ford.

TUMBLERS (Any other variety).—First, R. Fulton (Black Mottled). Second, J. Fielding, jun. Highly Commended, J. J. H. Stockall, Liverpool (Red); G. Ure (Black Mottled).

FANTAILS.—First, F. Else. Second, E. E. M. Roys. Highly Commended, F. Else.

BARBS.—First, J. R. Robinson, Nile Street, Sunderland. Second, M. Hadley.

TURBITS.—First, H. Mapplebeck, Moseley, near Birmingham. Second, W. Pepper.

OWLS.—First, E. E. M. Roys. Second, J. Fielding, jun. Highly Commended, J. J. H. Stockall; J. Fielding.

NYNS.—First, Rev. A. G. Brook, Ruyton XI. Towns, Salop. Second, C. Bulpin, Bridgewater.

TRUMPETERS.—First, J. Fielding, jun. Second, E. C. Gilbert, Penkridge, Staffordshire.

RUNTS.—First and Second, J. Fielding, jun.

ANY OTHER VARIETY.—First, E. Pigeon (Swiss). Second, F. Broemel

Lewisham, Kent (Siberian Ice). Extra Second, J. J. H. Stockall (Siberian Ice). Third, E. E. M. Roys (Jacobins). Extra Third, J. Fielding, jun. (Isabells). Highly Commended, C. Cowburn, Calls, near Leeds (Archangels); J. Thackray (Black Magpies); H. Yardley, Birmingham.

JUDGES.—*Industry*.—T. Challenger, Esq., Chesterfield; J. Douglas, Esq., Worksop; J. Dixon, Esq., Bradford; R. Teabey, Esq., Fullwood. *Pigeons*.—F. A. Esquilant, Esq., Brixton; T. B. Tegetmeier, Esq., Muswell Hill.

KELSO POULTRY AND BIRD EXHIBITION.

THE fifth annual Exhibition of this Society was held in the Corn Exchange, Kelso, on Wednesday, the 31st ult.

SPANISH.—First, A. Redpath, Edinburgh. Second, J. Hardie, Sorbie, Langholm. Third, Mrs. Noble, Kelso. Commended, Bowman and Fearon, Whitehaven. *Chickens*.—First, J. Anderson, Melrose. Second, J. Hardie. Third, A. Redpath. Very Highly Commended, W. Patterson, Langholm. Highly Commended, J. Hardie. Commended, E. Brown, Sheffield; T. Musgrove, Longtown.

DORKING (Coloured).—First and Third, Lord Binning, Mellerstain. Second, J. Elsworth, Glasgow. Very Highly Commended, W. Cheyne, Selkirk; Lord Binning; Mrs. Burns, Ednam. *Chickens*.—First and Cup, Lord Binning. Second, J. Elsworth. Third, J. Hardie. Very Highly Commended, D. King, Aberdeen. Highly Commended, M. Horniston, Mainhouse; T. Y. Craig, Kirkcaldy. Commended, F. Parlett, Chelmsford.

BRAHMA POOTRA (Any variety).—First, Mrs. Waugh, Lochmaben. Second, C. Pease, Darlington (various). Third, —Rathie, San Poin. Very Highly Commended, E. Sherman, Chelmsford (Dark). Highly Commended, Miss H. Scott, Ancrum House; J. Steel, Kelso (Grey); Lady Marjoriebanks, Lees. (Very good class.)

COCHIN-CHINA (Any variety).—First, W. R. Park, Melrose (Buff). Second, Mrs. Dickinson, Cornhill House. Third, J. Walker, Knaresborough. Very Highly Commended, J. Green, Belford Hall; Bowman & Fearon (Partridge). Highly Commended, F. L. Roy, jun., Nenthorn (Partridge). Commended, T. Y. Craig (Buff).

GAME (Any variety).—First, J. Hardie (Black Red). Second, Messrs. Easton & Mabon, Jedburgh (Brown Red). Third, W. Hodgson, Darlington. Highly Commended, J. Brough, Carlisle; F. L. Roy, jun. (Duckwing). Commended, Lord Binning (Black Red); D. Broomfield, Kelso. *Chickens*.—First and Cup, W. Boyes, Beverley (Red). Second, J. Hardie (Black Red). Third, J. H. Macnab, Barhead (Brown Red). Highly Commended, Mrs. J. Turnbull, Jedburgh. Commended, H. Goodall, Kirkcaldy (Black Red). *Cock*.—First, J. Hardie (Black Red). Second, Messrs. Easton & Mabon (Duckwing). Third, W. Boyes (Red). Highly Commended, J. Brough. Commended, J. A. S. E. Fair, Gilliestongues (Black Red); F. L. Roy (Duckwing).

HAMBURGS (Gold-spangled).—First, A. Heatlie, Selkirk. Second, R. Dickson, Selkirk. Third, W. Dickson, Selkirk. Very Highly Commended, T. Musgrove. Highly Commended, J. Walker.

HAMBURGS (Silver-spangled).—First and Cup, J. Stewart, South Arthur, Barhead. Second, J. U. Sommer, Jedburgh. Third, W. France, Crieff. Very Highly Commended, J. Walker. Highly Commended, R. Tate, Green Roads, Leeds; F. L. Roy, jun. Commended, W. Cheyne. (Very good class.)

HAMBURGS (Gold or Silver-pencilled).—First, R. Burrow, Longtown (Golden-pencilled). Second, J. Walker (Silver-pencilled). Third, W. Rowe, Carlisle (Golden-pencilled). Very Highly Commended, W. R. Park, Melrose (Golden-pencilled); G. Walker, Selkirk. Highly Commended, T. J. Saltmarsh, Chelmsford (Silver-pencilled).

BANTAMS (Game).—First and Cup, F. L. Roy, jun. (Black Red). Second, W. Morris, Rochdale. Third, J. F. Lunn, Jedburgh (Black Red). Very Highly Commended, W. Cook, Highgate Hill, Kelso (Duckwings); A. Robertson, Burntisland, Fife (Duckwings); J. Walker; D. Broomfield; F. Parlett, Chelmsford (Game); G. Turnbull (Game); G. Manning, Springfield (Game). Highly Commended, W. Hodgson, Darlington; Messrs. Easton & Mabon. Commended, Mrs. Sherman, Springfield, Chelmsford; M. Ballantyne, Spronston (Duckwings). (Very superior class.)

BANTAMS (Any other variety).—First, W. Morris, Rochdale (Silver-laced). Second, J. Ness, Kirkcaldy (Gold-laced Sobright). Third, J. R. Jessop, Hull (Black).

DUCKS (White Aylesbury).—First, A. O. Swan, Bush, Jedburgh. Second, J. Fair, Third, Lord Binning. Highly Commended, Miss H. Scott, Ancrum House. Commended, W. Hood, Edgerston Bigg.

DUCKS (Any other variety).—First, J. U. Sommer (Rouen). Second, W. Hodgson, Darlington (Rouen). Third, Miss H. Scott (Rouen). Very Highly Commended, J. Jennison, Manchester. Highly Commended, J. Jennison; H. Grogen, Floors Castle (Rouen). Commended, J. Patterson, Floors Castle, Kelso (Rouen); T. C. Harrison, Hull (Brown Call); G. Hall, Bowness Forest (Rouen); F. Sommer (White Call).

TURKEYS.—First, J. Anderson, Melrose (Black Norfolk). Second, J. Hardie, Cambridge. Third, Lord Binning (Cambridge).

DOZEN HEN'S EGGS.—Prize, T. L. Jackson, Bush of Ewes, Langholm.

COTTAGERS' PRIZES.—First, A. Henderson, Dunip, Jedburgh (Dorking). Second, J. McMillan, Jedburgh (Minorcas). Third, J. Fleming, Kelso (Game). Highly Commended, A. Purves, Mayfield, Kelso (Dorking); G. Mercer, Honndslow (Hamburghs); J. Jeffrey, Kelso (Duckwings). Commended, J. C. Turnbull, Bellingham (Game); T. Noble, Kelso (Spanish).

SELLING CLASS.

ANY VARIETY.—First, Rev. M. H. Graham, Maxton (Dorking). Second and Third, J. A. S. E. Fair, Gilliestongues (White Dorkings). Very Highly Commended, J. Murray, Kelso (Spanish); J. Walker (Silver-spangled); Lord Binning (Scott Grey); R. Dickson (Gold-spangled); Easton & Mabon (Game); J. Towns, Longtown (Gold-pencilled Hamburghs). Highly Commended, J. Hardie (Silver Dorkings); T. J. Saltmarsh (Golden Sobrights); F. L. Roy (Silver-spangled Hamburghs); T. Patterson (Rouen Ducks); W. Mattingly, Chelmsford (Buff Cochins).

SWEETSTAKES FOR SINGLE COCKS.

DORKING (Any variety).—First, J. Hardie (Silver). Second, J. Harvey, Jedburgh.

BANTAM (Any variety).—First, D. Broomfield (Game). Second, A. Skin-

ner, Falkirk. Very Highly Commended, F. L. Roy (Black Red); Miss J. Steel, Kelso (Game); G. Turnbull (Game). Highly Commended, C. Pease; F. L. Roy (Black Red and Black). Commended, W. Murray, Kelso (Duckwing); T. Royd, Kelso (Black); J. Young (Black Red); J. Harvey (Black Red). (Extraordinarily good class.)

PIGEONS.

CARRIERS.—First, E. Brown, Sheffield. Second, J. R. Robinson, Sunderland. Very Highly Commended, H. Allsop, Birmingham. Highly Commended, H. Yardley, Birmingham. (Very fine class.)

TUMBLERS (Any variety).—First, J. R. Robinson. Second, E. Brown (Almonds). Very Highly Commended, R. Irving, Langholm; H. Yardley. Highly Commended, H. Yardley. Commended, R. Irving. (Very good class.)

BANTAMS.—First, J. Grant, Edinburgh. Second, W. R. Park, Melrose. Very Highly Commended, W. R. Park; J. Campbell, Langholm. Highly Commended, J. R. Jessop. Commended, H. Yardley.

POWTERS.—First, J. R. Robinson. Second, J. Grant. Very Highly Commended, J. Grant. Commended, J. E. Spence, Musselburgh.

JACOBS.—First, R. Thomson, Kendal. Second, G. Yule, Mellowlee (White). Very Highly Commended, P. A. Renwick, Kelso. Highly Commended, A. Orniston, Kelso. Commended, J. G. A. Spence (Yellow).

TURBIS.—First, R. Thomson. Second, R. Davidson, Jedburgh. Very Highly Commended, J. R. Robinson; H. Yardley.

TURBIS.—First, G. Yule (Red). Second, W. R. Park (Blue). Very Highly Commended, F. Keir, Edinburgh (Yellow); R. Thomson. Highly Commended, R. Thomson. Commended, G. Yule (Blue). (A splendid class.)

ANY OTHER VARIETY.—First, H. Yardley. Second, G. Yule (Nuns). Very Highly Commended, J. Campbell (Magpies); E. Brown (Swiss). Highly Commended, H. Spence, Edinburgh (Black Magpies). Commended, F. Sommer, Jedburgh. (A good class.)

BEST PAIR (Any variety).—First, P. A. Renwick (Tumblers). Second, G. Gibb, Kelso (Turbits). Very Highly Commended, P. A. Renwick (Turbits). Highly Commended, W. Steel, Kelso (Blue Dragon).

CANARIES.

DONS (Yellow).—*Hen*.—First, W. Tinline, Galashiels. Second, J. Kemp Galashiels.

DONS (Buff).—*Cock*.—First, J. Walker, Kelso. Second, J. Bannister, Galashiels. Highly Commended, J. R. Thomson, Hawick. Commended, J. Kemp. *Hen*.—First, R. Paterson, Melrose. Second, W. Hardie. Highly Commended, J. Blackie, Jedburgh. Commended, Miss Clay, Kerchersters.

BEST COCK ON HEN.—Prize, W. Tinline (Yellow Don Hen).

BELGIANS (Yellow).—*Cock*.—First, J. Aitken, Kelso. Second, A. Rutherford, Kelso. Very Highly Commended, J. Jeffrey, Kelso. Highly Commended, J. Kemp. Commended, G. Trotter, Kelso. *Hen*.—First, J. Dryden, Kelso. Second, P. Cockburn, Gordon. Highly Commended, G. Laidlaw, Galashiels.

BELGIANS (Buff).—First, G. Laidlaw. Second, J. Kemp. Very Highly Commended, J. Aitken. Commended, J. Blake, Kelso. *Hen*.—First and Second, J. Marshall, Galashiels. Highly Commended, A. Wood, Galashiels. Commended, W. Tinline.

BEST COCK OR HEN.—Prize, G. Laidlaw (Buff Belgian Cock.)

FLECKED CANARIES.

BELGIAN (Yellow).—First and Second, P. Cockburn, Gordon. Highly Commended, A. Cockburn, Gordon. Commended, J. Archibald, Melrose; J. Dryden, Kelso.

BELGIAN (Buff).—First, W. M. Mein, Newstead. Second, A. Rutherford. *Don (Yellow)*.—First, G. Craig, Kelso. Second, G. Park, Galashiels. Commended, R. Rutherford, Jedburgh; A. Brown, Kelso; J. Burnett, Kelso; G. Craig.

Don (Buff).—First, J. Dickson, Edinburgh. Second, Miss Clay. Commended, J. Archibald; J. R. Thomson, Hawick.

SWEETSTAKES.

CAGE OF NOT LESS THAN FOUR BIRDS.—First, J. Dryden. Second, J. Aitken. Highly Commended, G. Laidlaw.

PAIR OF CANARIES (Any variety).—First, J. Jeffrey (Belgians). Second, A. Ferguson. Very Highly Commended, J. Walker; G. Craig. Highly Commended, A. Bulman, jun. (Dons); T. Reid (Belgians). (Very good class.)

BEST PERCHING BIRD.—Prize, G. Rutherford. Very Highly Commended, J. Walker (Goldfinch).

HALIFAX POULTRY SHOW.

THE first annual winter show of Poultry, Pigeons, Rabbits, and Canaries was held in the Temperance Hall, Halifax, on the 3rd inst. In number of entries the Show was more successful than was anticipated, seeing that the show of the Poultry Club was held at the same time. The classes for *Game Fowl* contained some excellent birds, the first prizes in each case being given to Brown Reds and the second to Black Reds. The Spangled *Hamburghs* were poor, but the Pencilled were good. It was a great mistake of the Committee to class Gold and Silver together, as otherwise a large entry would have rewarded their endeavours. The winning pens in *Spanish* were very good, but the rest were not worth notice. In *Game Bantams* the winners were Duckwings and Reds respectively; and in other varieties of Bantams, Blacks and Golden-laced. Good *Brahmas*, *Dorkings*, and *Black Hamburghs* graced the Variety class. *Pigeons* had but one class, which was well supported with good specimens of Carriers, Powters, Dragons, Tumblers, &c.; while *Rabbits* had four classes and but few entries; but some excellent Himalayas were exhibited.

The room was not well suited to the purposes of a poultry show, and in some parts the birds could scarcely be seen.

SINGLE GAME COCK.—First, J. Gelheld, Kendal. Second, R. Hemingway, Shelf near Halifax. Highly Commended, J. Dyson, Queen's Road, Halifax; J. Wilson, Ovenden, near Halifax; J. Settle, Bradford; H. Wood, Bradford.

GAME.—First, H. C. Mason, Drighlington. Second, G. Noble, Staincliffe, Dewsbury. Highly Commended, A. Hodgson, Ilkingsworth, near Halifax.

HAMBURGH (Gold or Silver-spangled).—First, S. & R. Ashton, Mottram.

Second, J. Preston, Allerton, Bradford. Highly Commended, S. C. Noble, Strickland Gate, Kendal.

HAMBURG (Gold or Silver-pencilled).—First, Mrs. Holmes, Manor Heath Lodge, Second, J. Preston. Highly Commended, Mrs. Holmes; R. Hemingway.

SPANISH (Black).—First, J. Thresh, Bradford. Second, J. Marchant, Hanson Lane, Halifax. Highly Commended, J. Marchant.

COCHIN-CHINA.—First, J. Wade, Copley Mills. Second, H. Crossley, Broadfield. Highly Commended, H. Crossley.

BANTAM (Game).—First, J. W. Thomas, Queen Road, Halifax. Second, G. Noble. Highly Commended, C. Ashworth, Thomas Street, Halifax.

BANTAMS (Any other variety).—First, E. Hutton, Pudsey near Leeds. Second, J. Walker, Pellon Lane, Halifax. Highly Commended, J. W. Thomas, Queen's Road, Halifax; W. Walshaw; S. & R. Ashton.

SINGLE GAME BANTAM COCK.—First, J. Walker. Second, C. Ashworth, Thomas Street, Halifax. Highly Commended, J. Walker; T. C. Harrison, Beverley Road, Hull.

SINGLE GAME HEN.—First, J. Dyson. Second, J. Hodgson, Bowling Old Lane, Bradford. Highly Commended, J. Pickles, Mytholmroyd.

ANY VARIETY NOT PREVIOUSLY MENTIONED.—First, J. H. Pickles, Bridgeroyd near Todmorden. Second, L. J. Crossley, Willow Hall, Halifax. Highly Commended, M. M. S. Denton, Stainland near Halifax; F. Clayton, Bradford; W. H. Wheeler, Nottingham.

PIGEONS (Any variety).—First, C. Cowburn, Calls, Leeds (Carriers). Second, W. Hughes, Leeds (Almond Tumblers). Highly Commended, T. Marchant (Tumblers); S. Wade, Ovenden, near Halifax (Turbit and Jacobins); W. Hughes (Pouters); C. Cole, Bowling, near Bradford.

RABBITS (*Longest Eared*).—First, J. Fleming King's Cross Road, Halifax. Second, A. Crossley. *Spotted*.—First, A. Crossley. Second, W. Walker. *Any colour*.—First, J. Warden, Fleece Inn, Halifax. Second, J. Fleming. *Foreign*.—First, W. Walker, Rothery Street, Halifax. Second, M. Hunsworth, Church Street, Halifax.

CANARIES.

BELGIAN (Cock).—First, W. Bottomley, Green Lane, Halifax. Second, T. Firth, Ovenden near Halifax.

YELLOW MARKED.—Cock.—First, W. Wilkinson, Bank Bottom, Southwram. Second, T. Walker.

BUFF-MARKED.—Cock.—First, T. Firth. Second, W. Wilkinson.

LIZARD.—Cock.—First, W. Bottomley. Second, J. Wilson, Silver Street, Halifax.

COCK (Any other variety).—First, W. Bottomley. Second, T. Firth.

HEN (Any variety).—First, J. Wilson. Second, W. Bottomley.

The Judges were J. W. Thompson, Esq., Southwram; and Mr. R. Tate, Leeds.

DERBY EXHIBITION OF BIRDS, &c.

We were again gratified with a visit to the Bird Show, held this year in the Temperance Hall, Curzon Street, which was kept open from the 25th to the 27th ult. The Exhibition on the whole was a great success. The following were the awards:—

CANARIES AND MULES.

NORWICH (Clear Yellow).—First, G. F. Welch, Derby. Second, R. Mackley, Norwich. Third, J. Bexson, Derby. Highly Commended, S. Bunting, Derby; G. Moore, Northampton. Commended, G. Collinson, Norwich.

NORWICH (Clear Buff).—First, G. F. Welch. Second, W. Walter, Winchester. Third, E. Coke, Derby. Highly Commended, W. Walter. Commended, R. Mackley.

NORWICH (Variegated or Marked).—First, R. Mackley. Second, A. G. Barnesby, Derby. Highly Commended, G. Collinson. Commended, E. Orme, Derby.

BELGIAN (Clear Yellow).—First, J. Pool, Sutton. Second, J. Hayes, Setton. Third, S. Bunting. Highly Commended, J. Hayes. Commended, J. Pool.

BELGIAN (Clear Buff).—First, W. Vie, Derby. Second, G. Corbett, Birmingham. Third, J. Hayes. Highly Commended, W. Phillips, Basford. Commended, J. Pool.

BELGIAN (Variegated Yellow).—First and Second, J. Pool. Highly Commended, G. Corbett. Commended, J. Martin, Belper.

BELGIAN (Variegated Buff).—First, W. Phillips. Second and Highly Commended, G. Corbett. Commended, J. Hayes.

BELGIAN (Crested).—First, H. Ashton, Manchester. Second, A. G. Barnesby.

BELGIAN (Ticked or Marked).—First, J. Pool. Second, G. Corbett. Highly Commended, J. Bexson. Commended, J. Hayes.

LIZARD (Golden-spangled).—First and Third, J. Hayes. Second, H. Ashton. Highly Commended, G. Harrison, Canterbury. Commended, W. L. Chapman, Northampton.

LIZARD (Silver-spangled).—First, J. Hayes. Second, G. Cummings, Gloucester. Third, H. Ashton. Highly Commended, H. Ashton. Commended, A. Yton, Derby.

GOLDFINCH MULE (Jonque).—First, H. Ashton. Second, W. Walter. Third, J. Hayes. Highly Commended, R. Mackley. Commended, W. Walter.

GOLDFINCH MULE (Mealy).—First, H. Ashton. Second, W. L. Chapman. Third, W. Walter. Highly Commended, R. Mackley. Commended, W. Walter.

ANY OTHER VARIETY.—First, H. Ashton (Linet Mule). Second, R. J. Troake, Bristol (Greenfinch and Goldfinch Mule). Highly Commended, G. Moore (Siskin Mule). Commended, W. Gamble (Green Linnet Mule).

NORWICH (Jonque, cage of six).—Prize, R. Mackley. Highly Commended, J. Wynn. Commended, W. Walter.

BELGIANS (Yellow, cage of six).—W. Phillips. No competition, and prize withheld.

BRITISH BIRDS.

BULLFINCH.—Prize, G. Crewe, Bread-all. Highly Commended, A. W. Booker, Liverpool. Commended, H. G. George, Littleover Hill.

GOLDFINCH.—Prize, Capt. C. H. Fisher, Stroud, Gloucestershire. Highly Commended, H. Ashton. Commended, A. W. Booker.

LINET (Brown).—Prize, S. Reynolds, Derby. Highly Commended, S. Steton, Derby. Commended, G. Cummings.

SKYLARK.—Prize, W. Walter. Commended, G. Cummings.

BLACKBIRD.—Prize, H. Nicklinson, Derby. Highly Commended, A. G. Barnesby.

THRUSH.—Prize, T. Morton, Derby. Highly Commended, J. Bexson. Commended, T. Keys, Derby.

STARLING.—Prize, W. Morris, Hilton. Highly Commended, R. Mackley. Commended, G. Hoome, Derby.

ANY OTHER VARIETY.—Prize, G. S. Crewe (Green Linnet).

FOREIGN BIRDS.

COCKATOO.—Prize, R. H. Cox, Derby.

GREY PARROT.—First, T. Biddulph, Derby. Second, T. Eyre, Derby. Highly Commended, Miss C. Crewe, Bread-all.

PARROT (Green).—First, A. W. Booker. Second, R. H. Cox.

PAROQUETS (GRASS).—First, H. Ashton. Second, Capt. C. H. Fisher. Highly Commended, W. Walter.

EXTRA.—First, F. Thompson, Derby. Second, H. Ashton. Highly Commended, W. Walter.

BANTAMS.—Prize, W. Fry, Derby. Highly Commended, W. Madeley, Derby. Commended, N. Barber, Derby; B. Wright, Aldercar Hall, Nottingham.

RABBITS.—Prize, W. Holmes, Derby. Highly Commended, W. Holmes. Commended, W. Holmes.

JUDGES.—T. Worthington, Esq., Derby; Mr. Carnally, Nottingham; and Mr. Lord, Oldham.—Geo. J. BARNESBY, *Derby*.

EXPENSES AND RETURNS OF POULTRY KEEPING.

I SEND you a statement of the expenses of keeping a stock of poultry in the past year. I should be very much obliged to you if you will give me your opinion on the subject, as I want to know whether they are kept extravagantly, or, as I hope, at a tolerably reasonable expense. The aviary birds consist of Pheasants, and different varieties of fancy Pigeons; and the fowls are Hamburgs, Game, and Nankin Bantams. The Cochins and Ducks are entered separately. I counted up the chickens as chickens till they were really, as I considered, as expensive in their food as large fowls. I added up, as you will see, the numbers fed every week, so as to make out my monthly number. If you can suggest any alterations I should be very grateful to you.

NUMBER OF FOWLS FED IN 1865.

	<i>Cochins.</i>	<i>Fowls.</i>	<i>Ducks.</i>	<i>Aviary Birds.</i>
January	33	210	41	73
February	39	246	45	91
March	29	180	28	76
April	28	168 126 "	28	81
May	28	144 254 "	28	80
June	35	177 300 "	35	100
July	48	226 191 "	112	88
August	42	193 188 "	94	82
September	72	165 159 "	67	80
October	88	265 chicks now	50	78
November	30	233 counted as	20	69
December	33	219 as adults.	28	84
Totals..	507	2426 1284	576	982

TOTAL NUMBER FED IN THE YEAR.

Fowls and Aviary Birds, 5875; = per week, 113.

FOOD EXPENSES.

	£	s.	d.	Per week	£	s.	d.
Per year	20	2	4	0	7	5	4
TOTAL EXPENSES.	£	s. <td>d. <td>PROFITS.</td> <td>£</td> <td>s. <td>d. </td></td></td>	d. <td>PROFITS.</td> <td>£</td> <td>s. <td>d. </td></td>	PROFITS.	£	s. <td>d. </td>	d.
Food	20	2	4	Poultry and eggs	14	10	10
Stock bought	8	7	6	Poultry and eggs sold	16	11	9
Extra expenses	6	2	0*	Present value of stock	9	7	6
	£34	12	8		£40	10	1

You will perceive in this statement, that beyond occasional presents, no charge is made for labour. The fowls being cared for by the cowman and myself, I hardly knew at what rate of wages to put him down, the fowls by no means taking up his whole time.

If you will kindly give me an answer as to whether you think my expenses for food are more or less than they should be, I shall be very glad. The extra expenses and stock-buying, of course, vary from year to year. I should add, that in valuing my stock at the close of the year, I put them at far under cost price, knowing that if I sold them I probably should not receive what I gave for them.—C. E.

[We are very much obliged for the statement you have sent us. It interests us much. We cannot point out any possible reduction. The only change we should like to see would be a separation of the expenses incurred for small birds and poultry. At present from blending the two, the price per head seems lower than we have ever been able to accomplish in our experience. We think you may put the labour at 1s. per day. We should also like to know whether the birds have

* Includes wickerwork, pans, travelling expenses, presents to poultry man.

any barn-door or accidental food. We shall be glad of any further details as it has long been our opinion that poultry-keeping may be almost reduced to a system as to its expenditure, and that fowls may have the proper allowance served out weekly as easily as it is done for horses, and with the same result of health and high condition. The want of reliable statistics misleads some, and discourages others.]

VULTURE HOCKS—TRIMMING.

THE remarks of "CLERICUS" have somewhat forestalled what I myself had been intending to say on this subject. I am utterly astonished at the reply of "one of our most able Judges," that the vulture hock is a recent introduction. You have hit the date more correctly, I imagine, at 1850, and I can myself hear you out, as I had some of Sturgeon's birds soon after that date, and I should say that vulture hock dates from the introduction of Cochins fowls. Before that time all our known breeds of poultry were naked-hocked birds; Dorkings, Spanish, Game, Malay, Polish, had this in common, whilst the vulture hock was found only in some of the booted Bantams, very seldom seen, and certainly not the source that could have given it to the Cochins. Whence, then, did it come, if not with the birds themselves? If we look at the original plates of "The Poultry Book" we find the hock feathers decidedly projecting; and in the description given of the cock I find:—"Thighs wide apart, &c., feathered quite down to the hock or knee, and the feathers even projecting beyond it, as in the Falcon;" and yet this is of recent origin!! Cochins and Brahmas have certainly this in common, that the thighs are fluffy, and the feathers very numerous as compared with other breeds. This abundance of feathers in all good specimens of these breeds should hide the hock joint from view, except on the inside. This has always been the case in good specimens. Soon it was found that the actual falcon hocks—the feathers reaching some inches behind the joint—were accompanied by profusely-feathered legs; and as heaviness of feathering is an essential in both these breeds, the actual falcon-hocked birds were probably used for breeding, and I apprehend there is no good breeder of either Cochins or Brahmas that wishes for naked-hocked birds, and none, I fancy, who would object to the soft feathers projecting half an inch or more behind and around the joint; for myself, I should not object to an inch, provided the feathers were soft and curving inwards. The rage against the moderate vulture hock is recent, if you like, and like all extremes will do, nay, is doing harm. I have quite recently had a Brahma cockerel sent me on approval. Well, the first-rate breeder to whom he belonged evidently had the fear of the hock before his eyes, and the hock joint was not hidden from view when looked at posteriorly; as a consequence of this paucity of feathers at the hock, the upper part of the leg was comparatively poorly feathered.

There are certain characteristics of breeds, and most assuredly the covered hock joint is the property of Cochins and Brahmas, as opposed to Malays, Dorkings, Game, Spanish, &c. In the other breeds the hock is bare, the joint fully exposed, and it coincides with the general close-feathering of these breeds. As it appears to me, to disqualify birds because vulture-hocked is extremely unjust, and I quite agree with you that the vulture hock is necessary in moderation. But if this defect when stiff can, by a dishonest exhibitor, be remedied by pulling, and in this condition be "very difficult of detection," surely it is an additional reason for not being so strict on the point. It would be very interesting to myself, and I doubt not to many other breeders of feathered-legged poultry, if the able Judge before alluded to would kindly describe what the leg ought to be. I myself should prefer hock feathers, projecting from half an inch to an inch over the joint, provided the feathers were soft. The stiff-feathered hock I do not like, but commend me to the feathering of leg that always attends it. The remarks of "CLERICUS" are much to the point, and I hope will assist in saving the best birds from being ruined.

The trimming alluded to by the Judge cannot be detected except on very close and careful examination of each specimen, and when the duties of a Judge under such circumstance would be completed in a close competition, it would be hard to say.

There are certainly some eccentricities in poultry-judging. A spriggy comb is a disqualification in Spanish or Cochins, but you may trim and remove it. I have bred many a first-rate Poland but for the spriggy combs. No good Poland wants a comb, although he has more hair, or rather feathers, on his

head than other breed, and might be supposed to want it more. Well, may I remove these? If it is allowable to remove sprigs from the other combs where they are not wanted, surely it is allowable to remove it in Polands. You may trim a Game face, but woe betide you if your pincers should try to improve a Spaniard's visage. The sooner the regulation against trimming is removed by committees the better, for at present it is used in an arbitrary manner.

Since writing the above I have read with great pleasure the remarks of "JUSTITIA," and I heartily thank him or her for them. The exact point is touched in these words: "If what is sanctioned one year may be reprobated the next, what ground of security have we to stand upon?" And if we are to leave our pets to the fancies and vagaries of every person who is styled a judge, we shall never know what to aim at! Nay, we are not certain that in a year or two the very opposite may not be considered requisite, and the shifting of the points to be sought after is fatal to success. I trust your own remarks and those of other exhibitors will show the judges that we do not intend to have our birds injured to suit their fancies. I can recollect in the early Brahma days a judge, who shall be nameless, disqualifying one of my Brahma cocks because he was pea-combed. Well, suppose exhibitors had set to work to breed single-combed birds, would not one of the great beauties of the breed have been lost? Save us from our friends if these are all the kindnesses they can show us!—Y. B. A. Z.

DRAGOON PIGEONS.

My attention was called the other day to a letter which appeared in your valuable paper of December 19th, from Mr. John Percivall, of Birmingham, relative to the judging of some of the Pigeon classes at the late Birmingham Exhibition. I regret that so much time has passed since the insertion of that letter; as many of your readers have, doubtless, taken for granted that the whole of Mr. Percivall's unanswered letter was correct. Mr. Percivall's opinion as a breeder of this very beautiful variety of Pigeon should certainly be taken notice of, and, henceforward, we must at least thank him for telling us what a good Dragoon should not be. I am, however, sorry to say that I think his letter has unjustly influenced many fanciers who once possessed good birds of this type, but who have since discarded them on account of what Mr. Percivall considers a blemish, and to use his own language, sufficient to exclude them from taking a prize—viz., the lower part of the back being white, or their being, as it is termed, "white-rumped." I must here admit, that since the publication of Mr. Percivall's views, I have become possessed of some very handsome birds having the white patch he protests against strongly marked, which, but for that gentleman's opinion, I should have been unable to obtain. I feel convinced that the remarks he has made upon this subject, if left unanswered, would be detrimental to the fancy, and calculated to make a rare and useful variety of Pigeon still more scarce, by weeding from its numbers the most beautiful of their kind; and it is for this reason that I feel prompted to say a few words upon the subject.

Had Mr. Percivall argued in favour of drawing a line of distinction between the Dragons and their very near relatives the Carriers, instead of bringing them nearer together (as he undoubtedly does, by admitting only birds of a uniform colour), he might, perhaps, have supplied a want long felt by the fancy.

Dragoons, or Dragons, were unmistakably inferior Carriers; and the Blues, Yellows, and Whites, being unable to compete with the Blacks and Duns, have, most properly, had another name assigned them, and by careful and judicious breeding are now more dissimilar than they were years ago. They possess all the beauty and symmetry of form of the Carriers, without that preponderance of wattles which so frequently makes them appear ugly, though it is the chief characteristic of the latter. Having thus adopted another name for these birds, and worked for different points to render them more unlike—to detach them, as it were, from the Blacks and Duns, and make them worthy their new name, is, I think, what the Dragoon breeder has striven for: and, therefore, to follow Mr. Percivall and his fancy would be to certainly retrograde, instead of progress nearer to perfection.

I contend that the white-rumped Blue Dragons are a purer blue, the bars a deeper black, the neck of a better metallic lustre, the eye a brighter orange, and free from the dark circle round the iris, and altogether forming a better contrast than those of a darker or more sombre colour. I am not praising

the white-rumped birds because I have none other. I have nearly equal numbers of each, though I believe there is a majority of those with the white badge, because, as a rule, I find them the best for the reasons I have mentioned.

I would ask Mr. Percivall, through your pages, whether he would in a like manner discard the white-rumped Blue Owls, Runts, Antwerps, Powters, &c. ? If so, I think this wholesale expulsion of beautiful birds from our shows will make sad havoc amongst their respective varieties. Even the Blue Rock Dove would almost be extinct, if the same slaughter could be made amongst them as he would make in the cultivated varieties.

Mr. Percivall says that he exhibited a pair of Blue Dragons at the late Birmingham Show. I believe the pair he alludes to claimed my special admiration, and were, in my opinion (as expressed at the time) the best pair in the Show, though not solely on account of their being minus the white rump. They possessed other properties or points, which, to my mind, set them above those they competed with. These, Mr. Percivall says, were honoured with a very high commendation; but, upon referring to the catalogue of the Birmingham Show, I find Mr. Percivall is credited with having taken the second prize, and his brother, Mr. Jones Percivall, of London, with the very high commendation. Is this a misprint? How are we to know to whom the birds really do belong? I know that both entertain the same notion with regard to the white rump being a defect; and I must say, whichever it was who exhibited the pair taking the second prize, that it either showed a great want of judgment in pairing for exhibition two birds so unequally matched, one possessing a mark, as Mr. Percivall himself says, quite sufficient to exclude it from prizetaking, or else it plainly evinced a scarcity of blue-rumped birds. Mr. Percivall acknowledges the justice of this award, but goes on to complain that the first prize was given to him for Archangels, because unequally matched, one bird having pearl, and the other gravel eyes.

In conclusion I ask, Is it consistent for Mr. Percivall to rail against the judging, or to set up a standard of excellence, when he, or his brother, or both, send for competition a blemished bird in each pen, and expect to be rewarded upon the merits of either?—A DRAGON BREEDER.

REGICIDAL ATTACKS BY BEES.

I AM glad to see that Mr. Lowe has returned to this subject, and, in the hope of assisting in the investigation of what still appears to me a most extraordinary and very unsatisfactory chapter in the natural history of our little favourites, I purpose stating briefly the conclusions at which I have myself arrived, pointing out, at the same time, in what respects my views either coincide with or differ from those propounded by Mr. Lowe.

Regicidal attacks by bees may, I think, be divided into three classes:—

1st, Those in which a matron is imprisoned by her own children.

2nd, Those wherein the regicidal frenzy is set on foot through the introduction of stranger bees by the apiarian.

3rd, Those in which a juvenile monarch is attacked by her worker sisters before she commences egg-laying.

Instances of the first class, in which a matron is assailed by her own children, seem to be comparatively rare, nor do they often come under the direct observation of the apiarian; when they do occur, however, they appear to be inevitably fatal. A queen may possibly survive several initiatory attacks, but these are repeated at uncertain intervals, until at last she succumbs. In such cases, and in such only, can I indorse Mr. Lowe's conclusion that a queen once imprisoned forfeits all regard from her subjects, and that, therefore, interference on the part of the apiarian can scarcely lead to any good result.

Cases of the second class, in which the regicidal frenzy is set up by the introduction of stranger bees through the manipulations of the apiarian, are, of course, equally rare in well-managed apiaries, but, when such instances do arise, experience justifies me in declaring that the best results may be hoped for from prompt and judicious intervention; * since, if the hapless queen can but be kept alive in a queen-cage within the hive itself until the regicidal mania has abated, she will

* Mr. Lowe's mishap with his Ligurian queen is a sufficient warning against too rashly liberating imprisoned royalty in the open air. As stated by me in "our Journal" of the 26th of September last, a number of outsiders may be previously dismissed, but the final release should only be ventured upon within-doors, where the queen may be readily recaptured in the event of her taking wing.

then be well received by her whilom rebellious subjects, and, no matter how furious the attack may have been, she will be no more liable to a repetition of it than if it had never occurred.

Although the third class, in which young queens are imprisoned before they have entered upon the duties of oviposition, appears never to have been witnessed by Mr. Lowe, it is in reality by far the most common form of regicidal attack among bees, and is, moreover, very frequently fatal. In these cases, also, I have found by experience that intervention on the part of the apiarian may often be beneficially resorted to whenever the danger is perceived in time. Although the attack may be repeated more than once, it is not even then necessarily attended with a fatal result; and if by the assistance of the apiarian, or by her own unaided tenacity of life, the juvenile but distressed monarch can only last out until she begins egg-laying, her subjects thenceforward appear as heartily loyal as if she had never been incarcerated.

In conclusion, I may observe, that whilst Mr. Lowe declares himself unable to indorse my opinion that the imprisonment of a young queen by her worker sisters can be characterised as a regicidal attack, he totally ignores the fact that I have supported this opinion by relating three several instances which have come under my own observation, and in which the incarceration of such queens by their workers has been attended by fatal results, as well as by the evidence of my distinguished German correspondent, who states that he has frequently had young queens imprisoned and killed on their return from successful wedding flights. According to Mr. Lowe's views our verdict in all these cases should of course be "Killed by kindness;" but from this conclusion I for one must entirely dissent, and would record my unhesitating conviction, founded on considerable experience and many opportunities of judging, that in all cases, and under all circumstances, whenever a queen, either old or young, is imprisoned by workers, her life is invariably in great jeopardy, and that no such thing ever occurs amongst bees as what may be termed the "friendly arrest" of a queen.—A DEVONSHIRE BEE-KEEPER.

* Vide Nos. 193 and 235 of "Our Journal."

OUR LETTER BOX.

INCUBATOR (*J. L. B.*).—That which you first name we believe is the best at present in use. There is no book on the subject. Directions are furnished with each incubator by the makers.

DISTINGUISHING AYLESBURY DRAKES (*J. C.*).—The drake has always a curl in the tail when in full plumage; but as it may be pulled out, we will give you another means of knowing the sex. The drake is generally larger than the Duck. There is no doubt of the four Ducks doing well with the drake; but we do not think you will be pleased with the cross between the Aylesbury and Rouen. Both breeds are very handsome when pure, and give undoubted proof of being a defined species; but the cross produces only a pied, brown-and-white, common-looking bird, with nothing to distinguish it from the ordinary Duck of a farm-yard. Ducks do not like roosting in a house of any kind; it is against their nature. Wild Fowl roost on the water, and tame Ducks like to sit on the bank, or in a farm-yard to take up their own quarters. You may ascertain the sex of Ducks by taking the bird by the pinion of the wing; the Duck quacks, the drake gives a kind of hoarse hiss. Sometimes they are long before they will make any noise. It then becomes necessary to hold them off the ground. If you persevere in this, with a little patience, you will always succeed.

HENS NOT LAYING—BECOMING BALD (*Cuckoo*).—Your hens will not lay so early this year as last. They were then pullets; and such lay earlier the first year than afterwards. We do not think the breed has so much to do with early as with late laying. The non-sitters lay much later in the year than those that have reared their broods. They will lay as many eggs without a cock as with one; but they never do so well, and generally take to all sorts of fancies, as in the present instance. We believe they eat each other's feathers. They are heated, and you will do well if you allow them to run in the garden every day. The scraps of green food and the insects they pick up will do them good. Let them have a good heap of dry dust and another of bricklayers' rubbish in their house. By dusting in the first they destroy parasites, which often induce them to pick their feathers; the second supplies them with shell for the eggs. Nothing is better for them than some road scrapings or grit. We think that if you will do this, and put a cock with them, they will do better. Do not depend too much on potatoes for food, they are not favourable to egg-producing. They should now begin to lay. The hen that lays double-yolked eggs, and that did so last year, will probably always do it. Such are never long-lived birds. It often cures such a visitation as you complain of, if the first appearance of a bare spot is rubbed with compound sulphur ointment.

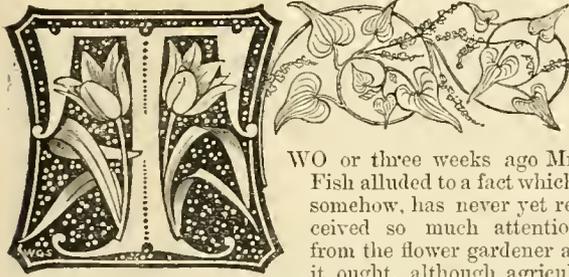
BUTTERMILK FOR PIGS (*R. T. C.*).—Buttermilk is given to pigs with advantage in every instance that we know of except one, and that was where the practice was to salt the cream, and of course it was unfit for use until mixed with meal and given to the pigs in that condition alternately with other food. We do not recollect of the complaint you mention being repeated in any of the dairy districts that we have been in; but there is one very like it, to the effect that "they will starve a dog, while it will feed a hog," and we have some faith in the truth of the axiom. Buttermilk is freely partaken of by the working classes in the western cheese counties.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 13—19, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.				Days.	m.	s.
13	Tu	SHROVE TUESDAY.	44.4	29.6	37.0	14	21	af 7	9	af 5	46	5	16	8	28	14	29	44
14	W	LENT BEGINS. ASH WEDNESDAY.	45.7	31.3	38.5	14	19	7	10	5	22	6	27	4	29	14	27	45
15	Th	Cytisus filipes.	46.9	31.4	39.2	14	17	7	12	5	54	6	42	5	●	14	24	46
16	F	Epacris impressa.	46.7	30.6	38.7	9	15	7	14	5	25	7	59	6	1	14	21	47
17	S	Erica transparent.	44.1	31.0	37.6	15	13	7	16	5	54	7	17	8	2	14	17	48
18	Su	1 SUNDAY IN LENT.	45.1	30.9	38.0	16	11	7	18	5	22	8	34	9	3	14	12	49
19	M	Erica rubra-calyx.	44.8	31.1	37.9	14	9	7	20	5	53	8	52	10	4	14	6	50

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 45.4°; and its night temperature 30.8°. The greatest heat was 59°, on the 16th, 1863; and the lowest cold 0°, on the 13th, 1855. The greatest fall of rain was 0.50 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

REMOVING PLANTS TO DIFFERENT SOILS.



WO or three weeks ago Mr. Fish alluded to a fact which, somehow, has never yet received so much attention from the flower gardener as it ought, although agricul-

turists have for some generations been alive to its value.

Mr. Fish justly calls attention to the propriety of now and then exchanging plants or cuttings, and cites an instance in which some cuttings which he had from a neighbour showed much greater vigour than some of his own that were treated in exactly the same manner, and he attributes their doing so to the sole cause of his own being to a certain extent worn out or tired of their quarters. Now this is a subject of great importance, and the judicious application of the facts stated may no doubt save some of the old popular favourites, which are threatening in some cases to leave us entirely; while amongst those that may be still regarded as in their prime, improvement may be effected by the change, or at all events deterioration prevented or delayed.

Hitherto the common practice has been to retain a plant or variety until it is superseded by something better, when it is discarded; but such a course is not always a correct one. A variety of plant requiring re-propagation every year might be very good in 1856, while something better may be seen in 1866 than it is at that time; but has the first not deteriorated during that period from having been kept so long in the same place? In fact, has not the theory of breeding in-and-in, as the skilful herdsman would say, been going on until the result shows itself unmistakably in the condition of the plants or their produce? and instead of a moderate and easy change, a radical one seems indispensable, and the variety that six or more years ago was the greatest ornament to the parterre is consigned to the rubbish-heap, and something fresh is taken in its place.

This view of the matter is, perhaps, in nothing more clearly exemplified than in the case of the Dahlia, which, after being kept a number of years in one place, seems to degenerate in size, and in some instances the colour also is altered. This tendency, however, is more easily remedied with the Dahlia than with many other plants. A number of new varieties of the Dahlia are offered every season at a reasonable rate, and the number of plants required never approaches one-tenth of that of bedding plants in general, and the difficulty in meeting the demand is by no means great; but when ten thousand Scarlet Geraniums are wanted, and it is apparent that the variety hitherto depended upon to supply the want is no longer what it used to be, a change is forced upon the grower,

whether he be prepared for it or not, and, as stated above, the common practice has been to call in another plant, which in its turn will likewise be discarded.

Now, though this plan has certain advantages in bringing something fresh into notice, it would be well to inquire whether or no a real improvement takes place at each change. It is not fair to compare the new favourite with the old worn-out one; we should ask if the new is really better than the old was when it was a fresh introduction. The memory, it is true, will not always enable us to compare present appearances with those of long ago without the exercise of some of those feelings which are adverse to an impartial judgment. Certainly we are told that advances are being daily made, but it is well to ask ourselves if every change is an advance. The affirmative answer is one calling for caution when an old servant is about to be discharged. For instance, let us take a cursory view of some of the popular flowers of the day, and, calling to memory what they were, ask ourselves if they have progressed much during the last twenty years. Pinks and Carnations have been great favourites in their time, and were certainly better thirty years ago than now. The same may be said of the Auricula and the Polyanthus, and although the Heartsease is a more modern addition of the florists, it was certainly seen in better condition fifteen years ago than now. The case of the Dahlia is also somewhat similar, but more pains have been taken to multiply the varieties of this useful autumn flower than of the others, and though the kinds fashionable twenty years ago are but seldom met with now, they are well represented in their offspring. Other examples might be given, but it may be as well to turn to another phase of the subject.

Taking it for granted that new varieties of certain kinds of plants can be produced with facility to meet the wants of the public, let us see in what way the judicious retention of species having more constitutional vigour about them can be accomplished. Species of plants are unquestionably longer-lived and less likely to deteriorate than garden varieties, hence the advantage of using them when they are suitable; but it often happens that improvement in some form or other is wanted, and a variety is put forth possessing to a certain extent that improvement; by-and-by improved variety No. 2 supersedes No. 1, and the last is followed by others, and it is to be feared each of these changes is effected by a sacrifice of some of the constitutional vigour of the original species, and the consequence is that after a time the variety ceases to be so useful as before; disease and an impaired constitution give token that its term of years is fast drawing to a close, and that something else must be substituted for it.

Now, the retarding of this premature decay is what Mr. Fish says was in some degree accomplished in the case of the Calceolaria, by his having a batch of cuttings of the same kind from another place, which, no doubt, will succeed better for one or more years, but will in like manner want restoring, until the effort which Nature makes to restore her offspring can be no longer maintained, and recourse must either be had to the species or to other varieties of later date. This being the case, would it not

be better for many of us to exchange plants or cuttings, or, where the extent of the place allows of it, to take cuttings from one description of soil to plant on another, so as to afford the change that seems so necessary to the well-being of the plants? Many large places afford such opportunities of exchanging plants, nevertheless in most it would seem to be better to import these from a distance, and from places differing considerably from that to which they are brought. I do not know whether the advantages said to result from seed wheat being imported from a cold, bleak, and unkindly place to one more favoured be real or not, but the poor place wants a change also, and this cannot be done on the same principle. Changes, however, may be beneficial, even when the natural conditions seem to be adverse rather than favourable, where the individuals occupying a particular soil show signs of being tired of it, and this is often done.

That change of soil and situation is attended with other results than the mere infusion of more robustness of growth is now and then apparent in the case of distinct species. The *Hydrangea* planted in one class of soil produces bright pink-coloured flowers, while in a peat soil of a certain class its flowers are blue; yet both plants appear healthy. So marked a difference, however, is not met with in other plants, nevertheless some change is often perceptible; but a distinct species will retain a certain amount of vigour under all circumstances, unless, indeed, it be placed where it ought not to be. Let us take, for example, some plants that possess all the distinctions of original species, and we seldom meet with disease amongst them; but changes of soil and situation are productive of other results, and, as in the case of the *Hydrangea* and some of our popular flowering plants, these present us with slightly different shades of colour when placed under different circumstances. Now and then examples of such variations are met with, and I will give an account of one that occurred some years ago, and in which it happened that both Mr. Fish and myself were interested.

When visiting Mr. Fish half-dozen or more years ago I thought a *Verbena* which he, like myself, grew rather extensively, differed from mine in colour. I brought a lot of cuttings home with me, and propagated them, keeping them apart from those which I had, but planting them close together at the proper time. The kind, I may observe, was one with which there is seldom a mistake, being the old *putchella*. Well, when flowering-time came there was a decided difference in the tints of the bloom when seen in quantity, that produced by the cuttings which I had from Mr. Fish having a more lilac tint, while that of my own plants was more of a lavender blue. This difference was tolerably apparent throughout the season, and there was so much diversity of opinion as to the relative merits of the two colours, that at the end of the season a quantity of each sort was propagated, one being named the light, and the other the dark. In the following season, however, the distinction between the two was all but imperceptible, and although care was taken in selecting cuttings from both again, no one could recognise any difference in the third year; and I may add that even in the first year the difference between the blooms of Mr. Fish's variety and my own was not so marked at this place as at that from which the cuttings came. Now, to what can we attribute the above difference but to the altered conditions in which the plant found itself? the habit being alike both at Putteridgebury and here, and the character of the flower in every respect the same, except in colour, which it is easy to believe arose from the substances on which the plant fed.

This case, I believe, might be corroborated by others of a like kind, but I will only mention one more, and that is the blue *Lobelia*, which I have vainly endeavoured to obtain of the deep dark purple tint which it exhibits at so many other places. That soil and situation, or one of them, or some other condition, prevents the attainment of this object I certainly believe; for although I have at various times procured plants or cuttings of kinds remarkable for the brightness of their colouring they seem to become paler when they are transported to our soil. Neither is seed exempt from the same result; in fact, I think seedlings have a greater tendency to become pale than cuttings, although both are used.

Referring again to the case of the *Calceolaria*, which presents fewer varieties than most of our popular bedding plants, rendering it, therefore, desirable to preserve good useful varieties true to their characters for as long a time as possible, I have no doubt that changing the ground in which they are grown will materially tend to promote this. It has long been the

custom of the farmer and cottager to have their seed corn and potatoes from other ground, and to obtain fresh after growing either for a few seasons on their own land; and in the case of a plant which is reproduced by an extension of itself rather than by forming an independent existence, the change seems to be more necessary. There are before us examples enough of old kinds of plants falling into decay. Many people now complain of Tom Thumb *Geranium* not being equal to what it was, and this degeneracy would doubtless be in some measure prevented by the same process as that adopted with the *Calceolaria*. Other plants are equally likely to be influenced by change from one place to another. This is a subject deserving of more attention than it has hitherto received, and when fully understood many of those failures to which many plants are liable will be less frequent than they now are. Though the power to prevent them may not in all cases exist, it is something to be able to know the cause, and in the case of many of our common bedding plants much may be done to effect a change for the better.

I can with every confidence indorse Mr. Fish's views on the propriety of now and then having changes of plants, and if by so doing our gardens can be made more gay, and plants less liable to die off, some good will have been effected; and I have no doubt but such will be the result where the plan has that fair trial which it deserves.—J. ROBSON.

VIOLA CORNUTA AND ITS CULTURE.

This was introduced from Spain to the royal gardens at Kew, by Dr. Ortega, in 1776. A very correct figure of it appears in Curtis's "Botanical Magazine," vol. xxi., plate 791. It is strange that the plant should have remained unnoticed by any one, with the exception of its being figured and described in the "Botanical Magazine" above referred to, for nearly ninety years, more especially as it offers a shade of colour that has been so long wanted for toning down, and giving effect to the many strong and glowing colours which we possess amongst our bedding plants. The plant would, no doubt, have perished long ago but for its extreme hardiness. It thrives in any common soil without care, and when once the plant is established there is some difficulty in eradicating it, as the smallest piece of the root will grow if left in the soil, and will soon produce a plant.

It flowers very profusely in a dry soil, but thrives better, and produces larger and more highly-developed flowers, when grown in a rather moist and partially shaded situation. It seeds very freely, and may be propagated either from seeds or cuttings. The present is a good time to propagate it in either way.

The seed should be sown in shallow pans, and should be buried in the soil about 1½ or 2 inches deep; the pans should then be placed in a cold pit or frame.

Cuttings may be pricked out in pans; or some good sandy loam may be put into a pit or frame, if there is enough of cuttings at hand to fill a small box. If, as will most likely be the case, only a few cuttings are to be had at this early period of the plant's second advent, they had better be pricked out in pots or pans, and placed in a cold frame or pit as recommended above for the seed. As soon, however, as they are nicely rooted they should be pricked out into a small frame or cold pit in some rich sandy soil, where they will grow very rapidly, and by the end of March they will have made good, strong plants, when they may again be divided into a great number. They should then be planted out in nursery-beds, and by the first week in May the plants will be ready for planting out in their final quarters, where they will at once begin flowering very freely. The small plants in the seed-pans should have similar treatment to that recommended for the cuttings, but should not be pricked out before they have made the third or fourth pair of leaves.

Where early spring flower gardening is carried out, cuttings should be struck early in August and September, and the plants placed in their final quarters about the end of October. I intend, as I before stated, when I first mentioned the adaptability of *Viola cornuta* as a bedding plant, in my description of the bedding-out at Oulton Park, to try some experiments in crossing it with Mr. Tyerman's varieties of *Viola montana*, as well as with many of the other *Violas* and *Pansies*. The late Mr. Beaton's double bedding *Pansy* will be one selected for a series of experiments with *Viola cornuta*; and if I can succeed in uniting the varied colours of the *Pansy*, and the delicious odour of the common *Violas*, with the habit and constitution of *V. cornuta*, combined with its profuse flowering all through the

summer months—if I can succeed in doing this, I shall be the means of introducing a class of plants to our gardens, that will not be easily surpassed for their beauty and usefulness.

I have not yet tried the plant in heat, but intend to do so, if I be spared this spring, and I have no doubt that it will strike as easily as a Lobelia, or a Verbena, after it has been growing freely in a gentle heat for a few weeks. If this should prove to be the case, those who do not possess the plant, by procuring a few plants now, may by bedding-out time raise some thousands from these. I have no doubt that *Viola cornuta* may still be found in the Chelsea Botanic Garden, from a plant in which the figure above referred to was taken.

Before the time for bedding-out shall have arrived, I will name some of the plants that may be used with good effect with *Viola cornuta*.—J. WILLS.

AURICULAS.

I HAVE often wondered how the doctor feels who, after having felt the pulses, looked at the tongues, and prescribed for the internal mechanism of half the county side, finds himself laid by, and cannot quite make out his own symptoms—nay, if a wise man, comes to the conclusion that he is about the worst judge of himself and his ailments, and sends off to his brother professional in the next parish to dose and doctor him. I have latterly thought, too, how the farmer feels when this dread rinderpest enters his stockyard, and sees one after another of his fine beasts hanging their heads and showing unmistakable symptoms of being attacked. I think I now know a little of it. This time last year I had as fine a collection of Auriculas as one need have seen. I had been consulted by Auricula growers far and wide, had prescribed for their maladies, had encouraged the forming of collections, and now I am reduced so in numbers that I am almost ashamed to own I have a collection. I have seen a disease which is quite as great a mystery as the rinderpest, and quite as destructive, making a clean sweep of dozen after dozen of my finest plants; and this, let it be remembered, of a plant which one cannot propagate as one will, nor, indeed, obtain for either love or money. I can quite sympathise with a good uncle of mine, on whose farm the rinderpest first appeared in these parts. "I didn't so much mind those I had bought; but when I saw those I had reared from their very calf-hood dying, it was trying work." Here were plants I had watched over from their tiny offset state, had been growing up to be blooming plants, and they are now dwindled away. How this has come about I know not, but as it commenced after their being repotted I must presume it was something in the compost. Yet I had prepared this with the greatest care: it was all old, the manure thoroughly well rotted, and the loam apparently good. I had repotted every one myself, had been attentive to the watering, kept them from rain, and did, in fact, all I had told others so often to do, and yet they went. They did not damp off, but fairly dwindled away. They seemed resolutely to refuse to root in the pots, and, of course, there was no hope for them. Had I thought of this sooner, even though it was their season of rest, I should have moved them out of it; but it was only in correspondence with Mr. Lightbody that it was suggested to me. He told me, and Mr. C. himself confirmed it to me, that Mr. Campbell a few years ago lost nearly all his collection by using loam in which iron existed. In my case I am afraid something of this kind was the cause. Unfortunately there is no grower within fifty miles of me, and hence we cannot take counsel together about them, as I could about other flowers, if they were going wrong. If *Gladioluses* are queer, or *Geraniums* spotty, one can easily find neighbours who can talk with you about them; but the Auricula has so few friends that we are not often thrown together, and hence we must consult our own judgment, which is often at fault.

I have been led into these remarks by a request forwarded to me from "A. C.," who wants to know about fertilising Auriculas—first, how he is to cross them, &c.; secondly, whether he is also to fertilise with their own pollen those which produce seed shyly; thirdly, whether any one would exchange duplicates with him. With regard to the first question, I do not believe that cross-breeding has been much attempted with Auriculas, and I am confident no certain results could be relied on by any such process. The same pod of seed will produce green, grey, white, and self varieties, and even the Alpine type; and I should say that if cross-fertilisation is to be attempted, I should advise that the constitution of the mother plant be

considered, and the colour or form of the male parent. Thus, for example, I should take Waterhouse's Conqueror, and fertilise it with the pollen of Chapman's Maria, or Lovely Anne, and put on it the pollen of Violet, and in some such way endeavour to obtain the various properties which are considered essential to the making of a good flower. All Alpine flowers should be excluded from the frames of any one who is particular in growing for seed; and, of course, it will be necessary to prevent the intrusion of bees, moths, &c.

As to the second point, there is little doubt, I should think, that fertilising with their own pollen would ensure greater certainty; but I have never found that there was any great difficulty in obtaining seed, although I have never been able to afford the time and trouble necessary for raising seedlings.

As to the third point—the exchange of plants, that is a difficult matter also. Probably his better plan would be to make out a list of the plants he has, affix his price to them, and endeavour to obtain a customer for them, and then lay out the purchase money on varieties which he does not possess. If he wishes to do that, and will send you such a list, I shall gladly try to help him in the matter. I regret that my own plants are in such an unhealthy condition that I could not offer any of them in exchange; and, indeed, exchanges rarely answer—each party considers himself hardly done by, however anxious each may be to act fairly. Indeed, as he is a near neighbour of Mr. Turner, of Slough, he would find little difficulty, I should think, in making some arrangement with him.

I have come to the conclusion that for us, at any rate, in these southern latitudes, the best time for repotting is immediately after the blooming season is over rather than in the autumn. The plants have by that time been growing away for some months, and I do not think they so readily make roots then as they do when in the height of their growth—at least this is the plan I purpose pursuing this year. It is Mr. Turner's plan, and there is no better grower than he is. If I fail this year I shall close the concern, and go in for growing Cabbages or Potatoes. The only way in which I can console myself is, that I could not tell that the loam was bad. *Geraniums* thrive in it lustily; but then they grow in almost anything, while the Auricula is as dainty in its food as a countess's lap dog. I am not one of those to say die, and so I shall not give up yet, and wish "A. C." and all other lovers of the flower better success than has attended—D., Deal.

THE ESPERIONE GRAPE—WINE—POTATOES.

WITH regard to the Esperione Vine, and in reply to "A VINE AMATEUR, *Stowmarket*," I beg to say that in consequence of numerous letters addressed to me on the subject, I wrote to Mr. Rivers, of Sawbridgeworth, offering him a bundle of cuttings from the Vine which I formerly received from Mr. Oldaker; and at the same time I requested Mr. Rivers to allow me to mention the circumstance in these pages, as I had no doubt that it would be welcomed by a great many. Mr. Rivers kindly answered me as follows:—"I thank you for your offer of a bunch of Esperione cuttings. I have been the great champion of this sort, which I have cultivated for twenty-five years. Some few years ago Beaton disputed with me in the *Journal* about it, and wished the world to think it was merely a variety of the Hamburg; but I would not give in, for his Esperione leaves died off yellow, while the true sort, as you well know, has its leaves in autumn of a fine crimson and purple. Once or twice, nine years ago, I bought some Vines under the name to supply orders, but they all proved wrong, their leaves at once betraying them."

I was born between *Stowmarket* and *Bury St. Edmunds*, therefore I can guarantee *Stowmarket* to be just the neighbourhood to suit the Esperione, and now that "A VINE AMATEUR" can succeed in procuring the true kind, I trust he may eventually have the same success with it in my dear native county as I have had in Oxfordshire. In 1865, from the Vines growing against the stone walls in the open air, I have taken 374 lbs. of well-ripened Grapes, clear from their stalks, from which I have made forty-six gallons of wine, and it promises to be very good. I am also almost ashamed to own that I cut a hundred bunches of the Grape for eating from one Vine growing under glass, and the same Vine produced ninety-seven fine bunches of Grapes in 1864.

"D." of Deal, is wrong in supposing that it was I who recommended to him the varieties of Potatoes he mentions at page 62. I have grown *Sutton's Racehorse*, and it proved so

much like Mitchell's Early Albion Kidney, that I do not grow it now, and I think Mitchell's the better. Myatt's Ashleaf I grew when it first came out. It is a first-rate cropper; but I gave it up as being with me deficient in flavour. With some tubers of Rivers's Royal Ashleaf I was kindly presented by the raiser, and I grew it for the first time this season. The Lapstone Kidney deserves all the praise that is bestowed upon it; but Daintree's New Kidney (for which, by-the-by, we received two first-class certificates at the International Exhibition of the Royal Horticultural Society at South Kensington, last December, one certificate for it in its most natural condition, and the other for it as a Kidney), is of the same strain, and it is earlier, and a better Potato still. I strongly advise "D." of Deal to give this first-rate sort a trial in his enlarged practice. I never cared to give the King of Potatoes a trial; why, I cannot tell. As regards round Potatoes partaking of an earthy flavour, I have a seedling which, if I have the pleasure of presenting some another year to your excellent correspondent, will, I hope, serve to convince him that there are round Potatoes to be grown as good as Kidneys.—UPWARDS AND ONWARDS.

PEAS FROM MAY TO OCTOBER.

THERE are but few who do not take an interest in Peas, the very mention of which at this time of year is enough to make one's mouth water; and as it has been a hobby of mine to obtain a good succession of them, and having kept a table of results, I will lay before your readers my experience on this subject.

In the first place, I may mention that I grow all my crops of Peas on the natural or out-door system, having neither time nor convenience for sowing under glass, hardening off, &c. As early in January as the ground is in good working condition, I select a piece of a south aspect border that has been previously manured and ridged, and levelling it down with a fork, sow Carter's First Crop in rather shallow drills, putting slips of furze along the rows before covering up, to keep off the mice. I always used to grow Sangster's No. 1 for my first crop; but Carter's First Crop is, in my opinion, far superior to it. Early in February I sow in an open quarter of the garden two rows of Sangster's No. 1, each about 30 yards in length, drawing the drills a little deeper and putting in chopped furze as before; but after this I am not so particular in the sowing and protecting; if only the ground is dug deeply, well manured, and the slugs kept trapped, there is not much danger of the crop not doing well. For the succeeding sowings I generally use two quarts of each variety at a time. Before the end of February I follow with two rows of Dickson's Favourite, and about the middle of March sow a like quantity of Yorkshire Hero—a first-class Pea for flavour; and Veitch's Perfection, two rows in the beginning of April. In the end of the same month I sow Bedman's Imperial; early in May, two rows of British Queen; and lastly, Knight's Dwarf Green Marrow in the end of May or beginning of June. Now, judging from the selection met with in the majority of seed catalogues, mine to some persons may seem a strange one; but my experience of it at any rate satisfies myself, and keeps the cook in tolerably good humour, considering that I have twenty or more persons to supply.

According to my memoranda the following is the order in which the several crops come in for use—viz., Carter's First Crop, May 26th; Sangster's No. 1, June 14th; Dickson's Favourite, July 5th; Yorkshire Hero, July 17th; Veitch's Perfection, July 20th; Bedman's Imperial, July 27th; British Queen, August 10th; Knight's Dwarf Green Marrow, September 14th, and lasting till the beginning of October.

The chief points in the culture of Peas are to keep the ground about them well hoed, to earth them up a good height before sticking, which should be done as soon as required; if dry weather is apprehended, to mulch with good long manure, and to water them if necessary. I may add, that should any of your readers think fit to try my selection, I have no doubt that with ordinary success the result will be Peas from May till October.—W. C.

PUTTYING ORCHARD-HOUSES.—As there is some difference of opinion on this subject, I directed my glazier to putty my orchard-house only in parts. During the short frost in January seven panes cracked. Every one was unputtied. Whether the cracking arose from the freezing of water between the laps, or from the want of that resistance to the weight of snow which a

puttied frame presents, I will not undertake to determine; but the result is in favour of putty, and I give my experience to your readers.—G. S.

CUTTINGS OF HYBRID PERPETUAL ROSES.

As a Rose amateur in a small way, I have noted your correspondent "COUNTY CURATE" in your Journal of December 26th, and without attempting to answer the questions generally contained in his letter, yet the remark as to cuttings from Hybrid Perpetual Roses would seem to imply a difficulty, which, from experience, I can say does not exist if only the most ordinary care is observed.

My plan is to take the cuttings from about the last week in July to the middle of August—Paul's "Rose Garden" gives the exact description of what a cutting should be. Well, I simply insert from four to six, according to the size of the pot which may be handy, in a nice light mould, composed of one-third of sandy peat, or any sweet light sandy stuff, the remaining two-thirds sifted loam and a little burnt earth, just to make the whole light, and calculated to encourage the quick formation of the rootlets. This season I filled as many small pots as I could manage with cuttings from such as Charles Lefebvre, Souvenir de la Malmaison, Princess of Wales, Jules Margottin, Devoniensis, John Hopper, Madame Boutin, &c. These pots were plunged in the Rose-bed, well watered, and a hand-glass placed over every ten pots or so; then a sheet of stout paper is covered over the whole of the glass and kept there for ten days or a fortnight, or otherwise the sun would make short work of the matter. Then the covering is partly removed—say from about half the surface of the hand-glass, and in five weeks or so I find the cuttings are for the most part struck, with here and there a few which are easily removed and not missed, because from the first more cuttings are placed in the pot than are expected to strike root.

About the middle of September I carefully turn out the cuttings, and place each in a separate pot. Now, this is really an operation requiring care; the cutting will be noticed with long white rootlets, so brittle that if the soil be pressed lightly they will snap asunder; therefore, I merely hold the top of the cutting in one hand in the pot, and just drop the compost with the other gently, give the pot a few shakes so that the roots meet the soil, and then place it, plunged to the rim, in the Rose-bed wherever convenient. The sun at this period of the year will hardly be too powerful to injure them if the syringe is freely used. At the end of October I house the whole safely in a cold frame, such as is used for Cucumbers; but raised on a bank 2 feet from the surface. Mine is but a small one, and at this time holds about four or five dozen pots, each with a young plant from a cutting as already explained.

The very little trouble required in striking cuttings from many of our most famous Hybrid Perpetual Roses, to my mind, renders the consideration of the question as to first budding on the Manetti of little consequence. If we wish for Roses on their own roots, it is quite certain that we can always have them so, except some few that will not strike, as Madame Vidot. With this Rose I never could succeed; but as the same difficulty is experienced at the nurseries where every appliance exists as to bottom heat, &c., this failure need not discourage an amateur.

The following are sure to strike—viz., Charles Lefebvre, Jules Margottin, Souvenir de la Malmaison, Devoniensis, Lord Palmerston, Triomphe de Rennes, Gloire de Dijon, Général Jacqueminot, and Due de Rohan. Perhaps the Tea Roses may not in cool seasons be so much depended upon as the Hybrid Perpetuals.

My idea from the first has been in favour of Roses on their own roots; in short, there is in many places soil quite unfitted for the Dog Rose, and the failures must be many. However, as a matter of taste, let every amateur try for himself, and act accordingly.—HENRY TAYLOR, Lower Edmonton.

POMMIER DE PARADIS.

A FRIEND of mine has just handed me a list of fruits by a Mr. Scott, of Crewkerne, and directed my attention to the following paragraph, "Procure your Apples grafted on the 'Pomme Paradis.'" I was so astonished at seeing such advice that I could scarcely believe any nurseryman could give such directions, my own experience is so opposed to the use of this stock. Many years since I was so struck with the pretty little Apple trees grown near Paris as single cordons, that I

ordered some thousands of this stock (Pommier de Paradis), on which I was told the French nurserymen worked their trees for the purpose. These stocks were received in spring, and made a capital growth the first season. The following winter was a severe one, and more than half the stocks were killed. As I was interested in the matter, I left the others unworked, to see how they would go on, and they were badly infested with aphids, and some died during the heat of summer. After the next winter so few remained alive that I destroyed them, and never planted another stock of the kind.

As nothing is more important than stocks to the cultivator of fruits, I should like to know how far Mr. Scott's advice is found to coincide with the experience of others. In the same work persons planting Pears on the Quince are told to plant above the graft; here they would root from the scion, and soon grow on their own roots. What do you say, Messrs. Editors?—J. R. PEARSON, *Chilwell, Notts.*

[We think you are right.—Ems.]

KEMPSEY AND BLACK ALCANTE GRAPES.

In the Number for January 30th, under the heading "Notes on Grapes," I am surprised to find you state that the Kempsey Alicante is the same Grape as Morocco. In Dr. Hogg's "Fruit Manual," edition 1860, page 107, Kempsey Alicante is described in such terms as led me to procure a Vine of the sort, which, from the foliage, appears to be correct: of the fruit I cannot speak. At page 109 is described a very different Grape, Morocco, much inferior to the other. I am desirous of having the Grape, be its name what it may, described in the above work as Kempsey Alicante. Will you please inform me if I possess it? or must I apply to Mr. Meredith for it?

Perhaps it would be an assistance to some other of your readers if Dr. Hogg would explain if the Kempsey Alicante sold by nurserymen corresponds with the Grape of the same name at page 107 of his work, or with Morocco at page 109, and also state what is the Grape Mr. Meredith advertises as the real—BLACK ALCANTE.

[The Kempsey Alicante Grape described in the "Fruit Manual" has been discovered to be identical with BLACK MOROCCO, but very different and very inferior to the Black Alicante sent out by Mr. Meredith, and which is frequently called now "Meredith's Alicante." This latter we believe to be the true Alicante of Speechly, which has for some years fallen out of notice and cultivation, except in a few gardens where old Vines are still in existence. It is one of the finest late black Grapes.]

THE ROYAL HORTICULTURAL SOCIETY.

At the anniversary meeting to be held this day at 3 P.M., the Council propose that the three retiring members of their body shall be J. J. Blandy, Esq., John Kelk, Esq., and Major R. Trevor Clarke; and that those replacing them be Viscount Sandon, the Right Hon. W. Cowper, M.P., and Sigismund Rucker, Esq. As office-bearers for the ensuing year, it is proposed that the Treasurer and Secretary be G. F. Wilson, Esq., and Lieut.-Col. Scott, R.E., to replace J. Kelk, Esq., and W. Wilson Saunders, Esq.

The new regulations as to the admission of young men as students into the Society's garden at Chiswick have likewise been determined on. The principal requirements are that the candidate shall be at least twenty years old, be recommended by a Fellow of the Society, and have served three years in good gardens, and in one such garden not less than a year. Further, he must be able to write and spell well, and be tolerably proficient in arithmetic. Good character, it is scarcely necessary to add, is indispensable. The wages of the young men admitted under the above conditions are to be 12s. per week, but rewards for meritorious work will be added.

THE meeting of February 10th was an improvement on the former exhibitions of this class in the present year, and was much more numerously attended. It is evident that there is a growing desire among amateurs and nurserymen of decorative plants to take advantage of the opportunities these meetings afford of exhibiting their productions to a class of visitors who, perhaps more than any others, can appreciate them; and now that London is "filling," and these Saturday promenades are attended by the *élite* of the fashionable world, we hope to see a greater variety of these choice little collections than hitherto.

Mr. Cutbush again sent a collection of forced flowers, similar in

every respect to that we described last week, the centre of the group being occupied with the graceful Solomon's Seal. On this occasion Mr. Cutbush rather overdid it by introducing six plants, instead of the four which harmonised so well in his last exhibition. It seemed as if the harmony of the group was destroyed by too much of one thing. Still the plants were very graceful, and were beautifully grown. For this an extra second prize was awarded.

The speciality of the meeting was prizes for six ornamental plants; and the first prize was awarded to Mr. Young, gardener to Mrs. Barclay, of Highgate, with a handsome plant of *Yucca aloefolia*, *Azalea indica* Nosegay, *Dracena Cooperi*, *Rhododendron Cunninghamii*, *Epilobium cochleatum*, and Duke of Wellington Hyacinth. Mr. Bartlett, of Shaftesbury Terrace, Hammersmith, obtained the second prize with *Rhodora canadensis*, a hybrid *Epiphyllum*, and pots of the Hyacinths Grand Lilas, Circe, Tabiflora, and Charles Dickens.

Mr. Cutbush also exhibited a fine collection of eighteen forced bulbs, which received an extra first prize, and consisted of four pots of Hyacinths, four of Tulips, and ten of Crocuses, and also twelve plants of the lovely little *Prunus sinensis flore pleno* forced in pots. They are like liliupatian double-blossomed Cherries. They received a first-class certificate.

Messrs. F. & A. Smith, of Dulwich, sent a collection of eight very beautiful varieties of *Primula sinensis*, many of them double, the finest of which were incarnata, a fine flesh-coloured variety, and Queen of England, white with a lilac centre. *Kermesina splendens plena* is a fine rosy red and very double. Some of the single varieties were also very good, such as *fimbriata superba*, of immense size, and fringed round the margin of the corolla; *Carnation*, prettily striped, &c. These received a first-class certificate.

Mr. Young received a certificate for a collection of Gonrds, and Mr. Bartlett an extra third prize for a collection of forced Hyacinths.

Messrs. Lucking Brothers again exhibited a choice lot of forced flowers, for which they received a certificate.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CHAMERANTHEMUM BEYRICHI, var. *VARIEGATA* (Variegated-leaved Beyrich's *Chameranthemum*).—*Nat. ord.*, Acanthaceæ. *Limn.*, *Didymia Angiosperma*. Native of Brazil. Leaves edged with dark green, centre very pale.—(*Bot. Mag.*, t. 5557.)

LUISIA PSYCHE (Butterfly-flowered *Luisia*).—*Nat. ord.*, Orchidaceæ. *Limn.*, *Gynandria Monandria*. Native of Burnab; imported by Messrs. Hugh Low & Co. Sepals and petals pale yellowish green; lip tessellated with violet-purple spots.—(*Ibid* t. 5558.)

THIBAUDIA CORDIFOLIA (Heart-leaved *Thibaudia*).—*Nat. ord.*, Vaccinææ. *Limn.*, *Decandria Monogynia*. Native of the Andes in various provinces of New Granada. Flowers scarlet, tipped with yellowish white.—(*Ibid* t. 5559.)

BAUHINIA TOMENTOSA, var. *GLABRA* (Glabrous variety of Downy *Bauhinia*).—*Nat. ord.*, Leguminosæ. *Limn.*, *Diadelphia Decandria*. Native of Benguela, Ceylon, Malabar in India, and of Natal and other places in Africa. Flowers primrose colour, with deep purplish crimson blotch at the base of the upper petal.—(*Ibid* t. 5560.)

EULOPHIA EUGLOSSA (Pretty-lipped *Eulophia*).—*Nat. ord.*, Orchidaceæ. *Limn.*, *Gynandria Monandria*. Native of the banks of the Old Calabar River in Africa. Sepals and petals green; lip white, streaked with purple.—(*Ibid* t. 5561.)

TILLANDSIA XIPHIOIDES (Buenos Ayres Air-plant).—*Nat. ord.*, Bromeliaceæ. *Limn.*, *Hexandria Monogynia*. Grows on trees in Buenos Ayres and at Mendoza, as well as other places at the foot of the Cordillera. Flowers white and deliciously fragrant.—(*Ibid* t. 5562.)

ACUCUBA JAPONICA VARIEGATA.—A herried specimen.—(*Floral Mag.*, pl. 277.)

VERBENA.—*Really Blue*.—A variety possessed by Mr. Bull, Chelsea; "a really blue variety."—(*Ibid* pl. 278.)

CHRYSANTHEMUMS.—*Iona*, bright golden. *John Salter*, bright orange.—(*Ibid* pl. 279.)

CALANTHE VEITCHII.—A pink-flowered hybrid Orchid, raised by Mr. Dominy.—(*Ibid* pl. 280.)

PEACH.—*Early Albert*.—Raised by Mr. Rivers, of Sawbridge-worth, who in this branch of fruit-culture has been most successful.—"The Early Albert Peach is of rather large size, roundish, and frequently higher on one side of the suture than the other, and with a dimpled apex. Skin greenish yellow, and covered with small red points on the shaded side, but deep crimson, becoming sometimes almost black, when grown against a wall and fully exposed. Flesh white, very tender, and melting, with a faint brick red tinge next the stone, from which it separates freely, and with an abundant, sugary, and

vinous juico, which is very rich. It is a first-rate early Peach ripening in the beginning of August."—(*Florist and Pomologist*, v., 17.)

THE HANUM, OR TAFJA-JAN FRUIT.

IN riding over the hills between Jericho and Bethel we found some fruit on a plant which was entirely new to us, and, as in many respects it appeared to be of a description pleasing to the eye, delicious to the palate, and with an agreeable aroma, I determined, if possible, to bring home a few seeds, that it might have a chance of being introduced as an addition to our dessert fruits. From the time of the year at which I found the fruit dead ripe on the plants, I fancy that it will not be difficult to cultivate; for, as the plants appeared to have reached maturity when I found them, on the 28th April—that is to say, before the really hot summer weather of that country had commenced, it appears that the cooler period of the Syrian spring is sufficiently warm; and the best proof that it will stand a moderately low temperature is, that on reference to my journal I find that the temperature in our tent at night was 55°, and at sunrise 42° on the day when I found a plant of the "Hanum" in full bearing.

The plant resembles the Melon in habit, growth, and leaf on a smaller scale, and appeared to carry from six to ten ripe fruit at a time. The fruit is about the size of an Apricot, of a bright yellow colour, with a thin skin, which separates easily from the ripe pulp, in which I found from twelve to twenty pips or seeds; upon being crushed or opened the fruit yields a most delicious aroma, which of itself would make it a valuable addition to our dining tables.

The soil in which the plant grows is the red stony loam like that of our Westmoreland hills, and I was told that the plant only grows on the hill tops in the neighbourhood of Bethel; but I also met with it on the high land between Samaria-an-Jenin. Not knowing it botanically I call it by the native names, and my object in writing this description of it is to inform you that I have a few seeds to spare, and shall be happy to place them in the hands of such of your friends as are most likely to succeed in cultivating the fruit to perfection. I sent a liberal supply of the seeds to the Royal Horticultural Society, which I have no doubt their able gardener will test this spring, and, I hope, be able to increase the stock.

As regards the cultivation, I venture to suggest a course similar to that adopted with the Melon with plenty of ventilation, for the plants appeared to grow on open exposed spots of the hill tops. The soil should not be too rich; if possible, as nearly similar to the native red stony loam as can be; and as the plants appeared to be of rapid growth and maturity, I do not think that the seeds will require very early sowing.—W. WANKLYN.

EXTENSIVE SALE OF FRUIT TREES.—We beg to draw the attention of our readers to a notice which appears in our advertising columns of a very important sale of fruit trees, to commence at Adams's Nursery, Acton Lane, Turnham Green, on Wednesday the 21st inst. The stock comprises upwards of 50,000 Apples Pears, Plums, and other fruit trees; also a number of ornamental trees and shrubs, all in fine condition.

ROUGH TREATMENT OF FIG TREES.

AFTER reading the remarks made by your correspondent G. Dawson on the pruning of Fig trees, I believe there is great truth in his statements, for I well remember that six or seven years ago I called to see an old gardener with whom I was acquainted—he was one of those old half-century-gardeners—and after walking round to see his plants, some of which, especially the Conifers, were very good, I went to the kitchen garden, and in one corner there stood a large Fig tree. It was a standard, with a stem somewhere about 2 feet in circumference, or it might have been rather more. I asked him if he obtained any Figs from that tree. He replied in the affirmative; and I then asked him if he ever pruned it?—and how he managed it? Then all at once he said, "Lor' bless'ee, I get up with a hatchet or za and cut off a gurt limb sometimes, and I get as many Figs as you could carry." It was the Black Ischia, as well as I can recollect.—W. HALLETT, *Cossington*.

[There are many worthy old gardeners who delight in saying strange things to astonish the "green ones." "The hatchet and the za" are rather extreme weapons for using much among Fig trees. Yet it is no less true, as stated the other

week, that where the climate is good Figs will do better if the bearing branches are allowed to hang a little from the wall, instead of being closely tacked to it. In the south of the Island, as in places in Devonshire, they do admirably as bush standards in the open air. Mr. Tillyard, at Bentley Priory, gives a good deal of liberty to his Fig trees out of doors as well as under glass, and with good results, which, with other things, we hoped to have noticed long ago. The Fig does not like a too high temperature; and with shoots pretty open, close to a wall, the heat in spring and summer is often too great, injuring the young fruit, and scorching one side of the ripening fruit. We knew of two Fig trees, close to a stable, with a good aspect, and in a warm sheltered situation, that bore abundantly every year, and the worthy proprietor would allow no one to touch them but himself, and all the pruning they had consisted in his taking out a few shoots now and then when they became too thick, and putting a string round others to secure them a little to the wall, so that the winds should not break them down. We should also say that, when nailed to the wall in the usual way, the finest Figs we ever saw out of doors were against a wall with an east aspect, on which the power of the sun would cease after 10 A.M. The finest Fig trees out of doors, without any protection, which we ever saw were a row of dwarf standards at Ramhead. The large Inscious fruit were a sight. We have no recollection of anything of the sort north of London.]

Your correspondent Mr. Dawson (page 90), states what I have often heard before—namely, that Figs bear better when not trained closely to the wall. If such be the fact, I can only account for it by supposing that shoots close to a wall are excited earlier in spring, and the young fruit, from want of protection during frosty nights, is cut off; while shoots far from the wall hardly show for fruit until the season of danger is nearly past. I do not uncover my walls till the 1st of April and cover again on cold nights.—G. S.

POTATO VAGARIES.

FOR a rather considerable number of years I have made Potato culture a small hobby on which I have taken a gentle annual trot, trying to test the qualities of the many sorts which have been the subjects of very "tall talk," *alias* puffing. From all that has passed under my notice relative to this most valuable article of food, I am not surprised to find poor Mr. Paterson fited in the north and grumbled at in the south. "A benefactor to his species, and his Potatoes a boon to mankind," at Dundee—after dinner; while one of our most experienced gardeners in Surrey can find but little good or exemption from disease in any of his new sorts. This is the result of one trial in one season, and is doubtless true. I am not defending or wishing to write up Mr. Paterson's Potatoes, but only to point out the changes that take place in even our old sorts of Potatoes in different seasons and in different soils. All experiments are of value, even that of "D., Deal," who planted his half a peck of each sort in his small garden, and then told us what he had done and how he cooked and ate them.

I have hitherto considered the Kidney Potatoes as the only kinds fit for the tables of those who appreciate a good Potato; and among them for many years, in my opinion, the Ashleafs have taken the first rank for flavour, which is so peculiar and so good. I have found but little or no difference in the varieties known as Myatt's Royal, &c.; but I think I have been able to distinguish that the closer the adherence to the parent of all the race—the old Ashleaf, in the varieties brought out or raised from its seed, so much nearer to perfection are they in flavour. Next to the Ashleafs in flavour is the Lapstone or Haigh's Kidney. It must be some fifteen or more years ago that I saw, spread out in a shed in the nursery of Messrs. Backhouse at York, a large quantity of a most beautiful-looking Kidney Potato. They were being greened for seed, and were called Haigh's Kidney. It was some time before I learnt their *alias*—Lapstone. As a matter of course I ordered some, and gladly commenced their culture. The first season, to my great discomfort, they were prostrated by disease, so that I had difficulty in saving enough for seed—very small tubers. The second season they suffered more from disease than any other kind, and continued to do so for three or four seasons. In spite of this their flavour was so good that I could not think of discontinuing their culture, and so I persevered; still I considered

the sort delicate in constitution, and only fit to grow as a luxury. For the last seven or eight years a marvellous change has come over this sort. Its habit is more robust, and it has resisted disease so as always to retain its flavour.

I now come to the year 1865 and its Potato vagaries. In the month of February I planted on a rough hotbed, made of manure, leaves, and refuse, my usual crop of Ashleafs of two or three kinds—the Old, Myatt's, and the Royal. The bed was 6 feet wide and 80 feet long. On the 20th of May I commenced digging new Potatoes, and my supply lasted till the end of June, the quality of all excellent. Ashleafs in the open borders were then commenced and found to be equally good, the Royal producing largely. This state of things lasted till the beginning of August, when heavy rain commenced, and with it the disease, which in a day or two reduced the vines to sere dry stalks, but leaving the tubers to appearance entirely free from disease. To our surprise we found our favourite Ashleafs from a piece of light soil had lost their flavour. We tried them from loam, from clay, from peaty soil near the river—they were all alike flavourless, or at least they had only the peculiar insipid taste of the Fluke Kidney. We endured this with patience, for on trying the Racehorse, the Imperial Kidney, the Prince of Wales, *alias* "Boon to Mankind" (which said "Boon" was very rotten, and the few saved very uneatable), Mona's Pride, almost uneatable (how can any grower compare this to the Ashleafs? It is not earlier than the old sort, and never has any flavour), the Lemon Kidney, and the Silver-skin Kidney, some of which were sound-looking, all were found flavourless and uneatable. What a ridiculous illustration of the folly of giving prizes for uncooked Potatoes! Verily it is something like "testimonials" to new early Peas, many of which are not only alike, but very old sorts with very new names. These matters are not creditable to the age; they lower the status of tradesmen, and make people hold up the finger of scorn.

Driven from our Ashleafs, which we have generally depended upon till late in October, we turned to our winter favourite the Lapstone about the middle of September. On digging them up the crop was found good, the tubers remarkably sound and handsome, and we thought we were safe for the winter. After our cook's usual mode—the only way to cook Potatoes—the Lapstones were steamed in one of Barlow's steamers, and brought to table. To our surprise they looked glum and sullen—not a jacket unbuttoned as usual, and to our still greater surprise we found them close and almost flavourless. We endured this during the whole of October and nearly all through November, when, as a *demier ressort*, I ordered them to be peeled, boiled, salted, and dry-clothed. This has brought on a change for the better; but their delicious flavour is gone—they are flukish, and only fit for London dining-rooms.

Not quite satisfied with the state of our Potato affairs, I thought of my spring favourite—I must explain that my three sorts have hitherto been Ashleafs and a few Ten-weeks for spring and summer, Lapstones for late autumn and winter, and the King for March and April; so anticipating and hoping to find "all right," I ordered a dish of Kings to be steamed in "Billy Barlow," as some jesters stigmatise the immortal steamer, on Tuesday last, January 30. They came, but they did not conquer, for their jackets were closely buttoned; others looked like a dyspeptic an hour after being tempted into taking a glass of fine old port—isn't the feeling horrible? Well, our Kings turned out much worse than our Lapstones. They were close, ill-flavoured, and indeed uneatable; so much so that, depending upon a great treat—I delight in a good Potato—no other sort was cooked, and I was compelled to dine on half a King, and not a savoury one, as he of the Cannibal Isles might have been. As a forlorn hope I have to-day (Feb. 2), had some Pink Fluke, or Queen of Flukes, steamed in their jackets. Like the three sorts above named, they are close and ill-flavoured. I quite hoped to find the King and Queen of their usual good quality.

It is curious to note these abnormal features in Potatoes of the growth of 1865. I am not aware, and have not heard, of their quality in other places from good observers. The round sorts are, I believe, as usual dry and floury, but they are not usually placed on the tables of those who do things well.

Potatoes were green and flourishing here (Herts), till August the 14th, 1865, when, after heavy rains, on or about that time, the vines died off suddenly, emitting before doing so that peculiarly offensive smell indicative of the disease. The tubers of some kinds, however, were full grown, and did not suffer in appearance. The crop of Lapstones and Royal Ash-

leafs was particularly abundant and sound, but their fine flavour was gone. The sorts of Kidney Potatoes that suffered most here have been Mona's Pride, nearly all rotten; the "Boon," *alias* Prince of Wales, the Imperial Kidney, the Silver-skin, and the Lemon; most of these were masses of rottenness. The King and the Pink, or Queen of Flukes, resisted the disease to a great extent, for their tops were green a month after the others were brown and dried up, but their tubers are, as I have above stated, not of their usual quality. I was struck last spring with one kind of early Kidney Potato which I had thought so delicate and shy in bearing as not to be worthy of cultivation. From some peculiarity in the weather this sort came up well, grew well, and bore a good crop, proving the earliest of all except the Ten-week. It is known as Hudson's Early May.

I have thought it worth while to give this history of Kidney Potato culture here in 1865, because it will, I think, show that in some seasons and in some soils Potatoes vary in quality to an extent almost beyond credibility. As to the reason why fine full-grown tubers should lose their flavour because their tops died off a week or two before their usual period, and after the roots were full-grown and nearly ripe, it is a question for the physiologist.—FORWARDS.

SEEDLING GRAPES SPORTIVE.

In an interesting article by Mr. T. M. Lindsay at page 502 of the last Volume, he remarks that he is somewhat sceptical about the crossing of Grapes, and says, "I believe that the majority of Grapes sent out of late years as cross-bred varieties are in reality no crosses at all, but simply sports from seed." I will grant that this opinion is true in some cases, for the Editors, in commenting on Mr. Lindsay's illustrations, remark that these "furnish another proof that in the vegetable as in the animal kingdom, when a fixed form has once been broken in upon, there is no end to the vagaries that follow." I have been fertilising Grapes, and rearing seedlings from these, for the last twelve years, but I never thought of taking the trouble to sow seeds, unless fertilisation had been carefully practised with a view to effecting improvement in the quality, productiveness, habit, &c.; nevertheless, I consider the experiments made by Mr. Lindsay in sowing the seeds of the Black Hamburg Grape, without crossing, very interesting and instructive, particularly to those who have been in the habit of growing Grapes from seed.

I do not now intend to give an account of my successes and failures, I wish only to mention the peculiarity of light Grapes being produced from seed taken from a black parent, and that, according to what has been stated by eminent growers, even without cross-fertilisation. I am convinced, however, that the colour is sportive, for I have this year obtained a true white variety in every respect from that new and superior black Grape the Muscat Hamburg; and what is still more confirmatory of this view is, that in the present instance the female parent, or Muscat Hamburg, was most carefully crossed with my own new Champion Black Hamburg, no doubt there was white blood in the male parent, it having an infusion of the Canon Hall (white) in it.

I believe that it will be fresh in the memory of all the readers of this Journal that Mr. W. Thomson, of Dalkeith Park, raised a white Hamburg Grape from the Black. The same is now, I think, named the Champion Golden Hamburg. Mr. Lindsay's experience also fully proves that the common Hamburg, at all events, is very apt to produce white seedlings. It remains to be proved if other varieties will do the same.

Assuming the foregoing to be correct, particularly as regards Grapes with which cross-fertilisation has not been resorted to, are we to obtain new Grapes improved in their properties, more particularly in respect to flavour and size, without recourse to artificial fertilisation? From what experience I have had, I would decidedly answer, No. I do not deny that solitary instances may occur of an improved Grape being produced by chance; but from what I have proved, even with careful crossing, success is not always attained.—WILLIAM MELVILLE, *Dalmeny Park Gardens.*

MILDNESS OF THE SEASON.—The mild month of January has had such an unusual effect upon vegetation here, at Hawkhurst in Kent, that an account of the plants in bloom out of doors may not be uninteresting to your readers. On the 7th of January a Lord Suffield Apple tree presented us

with a truss of bloom; on the 9th Snowdrops and Crocuses were in full bloom; and on the 19th the first Daffodil made its appearance. All this, perhaps, may be unusual, but not so surprising as when I state that on the same day some Rhododendrons of the ponticum varieties expanded some trusses of bloom; and on the 21st we had a bright scarlet one a mass of bloom, about thirty trusses being all expanded at once. *Souvenir de la Malmaison* Rose also gave us some good blooms. Many hardy shrubs are making growth. Peach trees are on the march, and the vegetation of many other plants is becoming more or less active. I should like to know if this is the case elsewhere. If so, it will be necessary for every gardener to have a watchful eye to the weather, and have plenty of protecting material at hand; otherwise we are likely to lose the bloom of many valuable plants, and have our prospects of fruit destroyed.—T. REECON.

On New Year's-day of the present year I picked from my garden—a terrace one, and exposed to easterly winds—six ripe Strawberries of a very fair average size, and nearly equal in flavour to a summer Strawberry.—F. K., *Wellington, Salop.*

GLOXINIA CULTURE.

I HAVE often wondered that Gloxinias, a class of plants possessing so many beauties, are not more generally cultivated. They may be had in bloom throughout the summer and autumn, and if we take into account how simple their culture is, I think there are few plants that better repay the attention bestowed upon them. Where a succession of bloom is required the tubers must be started into growth at different times, allowing from four to five weeks between each lot; and as the time to start the first is at hand, I have thought the following remarks on their culture might be of use to some of the numerous readers of *THE JOURNAL OF HORTICULTURE*.

Early in February take from their winter quarters the pots containing the dormant tubers, and place them on a level surface, then with the watering-can give as much water as will moisten the soil, which will have become dry during the time the tubers have been at rest. This done, plunge the pots in a bottom heat of from 65° to 70°, but if bottom heat is not at command, ainery that is at work will answer very well. With due attention to watering, the tubers will in two or three weeks have started, and begun to grow freely. Then, but not sooner, turn them out of the pots and carefully shake the old soil from them, doing as little injury to the fibres as possible. Transfer them to clean, well-drained pots a size larger than those from which they were taken, using the following compost, which I have found to suit them admirably:—Two parts decayed leaves, one part fibry loam, and one part dried cowdung broken into little lumps about the size of cob nuts, adding as much silver sand and fine wood charcoal as will give the whole a nice friable texture. This compost should at the time of its being used be nice and dry, and of the same temperature as the structure in which the plants have been growing.

The soil being in readiness, proceed with the repotting by first draining the pots, an operation which must be done efficiently, as the well-doing of the plants depends in a great measure on this. On the top of the drainage place the roughest portion of the compost, pressing it firmly down with the hand, and fill the pots until by placing the tuber on the soil the crown reaches to within an inch of the top of the pot. Then fill in between the pot and the tuber with the finer portion of the compost, give the pot a few smart taps on the bench, which will cause the soil to penetrate amongst the fibres, and finish by pressing the soil round the tuber with the fingers, leaving the crown just peeping through the soil. This being done, give a gentle watering with tepid water, and return the Gloxinias to their old quarters; if in the bark-bed place a small flower-pot, not inverted, beneath each, which will prevent worms from entering, and allow the water to pass off freely.

After the pots have been plunged for a fortnight raise them one-half their depth, and in another fortnight lift them entirely out of the bed, placing the plants where they can have as much light as possible, but not near a fire or hot-water pipes, as dry hot air is very injurious to the foliage. Examine the plants daily, and see that none suffers from want of water. That used should always be of the same temperature as the house in which the plants are growing. Be also careful not to over-water, as if the soil becomes saturated they will cease to thrive.

As soon as the plants begin to show flower remove them to

the warmest part of the greenhouse, as the flowers should expand in the same heat as that in which they are to remain. In hot weather a slight shade will be necessary during the hottest part of the day. As the plants go out of flower water must be gradually withheld, and they should be placed in a position where they can have all the sun possible; this will cause the tubers to ripen and go to rest, which is necessary to their future well-doing. During the period of rest these must never be exposed to a temperature below 45°.—J. HAMMOND.

GROWING MEALY POTATOES.

"D., Deal," is quite a Corypheus among flowers, but I cannot say as much for his knowledge of Potatoes. He should have known that meeliness or waxiness in Potatoes is much under our control. If he had taken the native habitat of the Potato, the chemical constituents of the soil there, and compared it with the analysis of a healthy and a diseased Potato, he would have found suggestions enough. The Potato is an alkali plant. Our manured soils have a correct relation to the Wheat plant, a phosphatic plant, but little to the Potato. A waxy Potato is full of developed albuminous cells; but the cells are not all filled with starch. Phosphatic manures favour the production of albuminous compounds, and alkalis the production of starch. Now, if "D." of Deal will add alkalis liberally to his rich garden soil, he can grow even sound Potatoes as mealy as he likes. Sulphate of magnesia is one of the best Potato stimulants we have, and it is cheap, 7s. or 8s. per cwt. Sulphate of soda, dry—*i.e.*, not crystallised, technically the salt cake of the alkali manufacturer, is another—say 5s. per cwt. Nitrate of potash is the finest stimulant of all; but the price is beyond the reach of ordinary Potato growers; but those like "D." of Deal, who are very partial to good Potatoes, and to whom cost is a small consideration, should use it freely—say per acre, to soil full of phosphates:—2 cwt. nitrate of potash; 2 cwt. sulphate of soda; 2 cwt. sulphate of magnesia; 2 cwt. common salt. A poor soil in all constituents would also require 4 or 6 cwt. of guano, or superphosphate. If the nitrate of potash is left out, except in manse gardens, the remainder will be found a valuable and a profit-paying manure.—W. ROSS, *Herefordshire.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

ATTEND to the drainage of your gardens, for at this season, when frequent forkings and turning over of previously trenched ground are requisite, it is easy to perceive the advantage and great importance of efficient drainage. This, of course, refers to soils that do require drainage, because some do not. How beautifully the earth mellows and crumbles down, and how much sooner it comes into a fit state for cropping when the drainage has been properly attended to; nay, more, the labour it requires is much less, because all pulverising operations are more easily performed. If the soil be undrained the labour is far greater to bring it into anything like condition for the reception of crops, and even then the progress and produce of the crops committed to it are greatly inferior to what they are in the former case. We would, therefore, endeavour to impress upon the minds of all who cultivate the soil with the view of receiving an adequate return for the labour bestowed upon it, that a thoroughly efficient system of drainage is the basis of all successful cultivation. Persevere in hoeing, surface-stirring, and dusting with lime amongst all advancing crops, and do not forget to put good-sized readable labels to every crop, with the name in full, and the date when sown or planted. This will save much trouble hereafter, and the results, if transferred to a journal, will be valuable for future reference. *Carets*, make another sowing of Early Horn. *Cucumbers*, the greatest attention should be paid to the bed for the first fortnight after the plants have been turned out, the heat-stick should be examined daily, as it is a much better criterion to go by than a thermometer, which only indicates the heat of the atmosphere in the frame. Cover up according to the heat of the bed; if this will allow of it, a small portion of air should be left on every night; this may be done in the evening, after the frame has been closed three or four hours. *Endive*, continue to blanch the late crops. *Lettuce*, attend to

* The greenhouse should be warm, and the air moist. In an airy greenhouse the leaves become shabby.—Eds.

surface-stirring, and to the removal of decayed matter from the autumn-planted on sloping banks. *Onions*, plant the bulbs of last year which begin to grow, they will be found very useful where there is a scarcity of sound ones, they may also be planted for seed. Plant the Underground sort, if not done in the autumn. Weed and clean the autumn-sown. *Peas*, if the soil is in good working condition put in now the first principal crops of Tall Marrows, British Queen and Victoria, in the open quarters, sowing Spinach between the rows; as this ground comes in well for Celery, the Peas should have the full width of 6 feet from row to row, the Spinach will come off in time for the trenches to be made for the Celery. Continue, also, to sow successions of Early Peas, Longpod, and Windsor Beans, according to the demand. *Parsley*, a sowing should be made as soon as the ground is in a fit state to receive the seed. *Potatoes*, plant some Ash-leaved Kidneys on a warm sheltered border if the weather is mild and favourable. *Radishes*, sow a succession. Continue the operations of manuring, trenching, and forking over the ridges whenever the weather will permit.

FRUIT GARDEN.

Pruning and nailing Peaches, Nectarines, and Apricots, may be followed up with vigour and perseverance, whenever the weather is favourable. Wall fruit trees of any kind that are becoming crowded with wood near the top of the wall should have some of the larger branches headed back, and the shoots trained below. Do not crowd the centre of fan-trained trees with too much wood, that part will always fill up enough.

FLOWER GARDEN.

Take every opportunity to forward the ground operations in this department. Now is a good time for the formation of beds for Bourbon, China, and Tea-scented Roses. Take the soil out to the depth of 12 inches, fill up with rotten dung from old hotbeds, or any other source, tread it firmly as the bed is filled, place 3 inches of soil on the dung, and plant in the usual manner. During open weather give standards some good waterings with drainings from the dung-heap. Prepare beds for Carnations and Pinks, strong turfy loam, with rotten cow or sheep-dung added, forms an excellent compost; let the beds be 6 inches above the surface of the ground. Have the Pansy-beds in readiness, choose a strong rich soil in a shady situation, if the blooms are wanted in perfection. Top-dress Auriculas and Polyanthus with a light loam, made rich by adding rotten cow-dung. This is a good time to take off the offsets before top-dressing, plant them three or four in a five-inch pot, and place them in a shady part of the frame. Sow seed in shallow pans, and place them in a cold frame. Place roots of choice Dahlias in a little heat to start for cuttings. Plant out biennials in masses, where requisite. Lose no time in finishing the planting of trees and shrubs.

GREENHOUSE AND CONSERVATORY.

The conservatory now should be full of interest, and ought, where much attention is paid to flowers, to be as full of beauty as at any period of the whole year. Any Camellias done blooming should, if possible, be removed forthwith to some of the houses at work; a moist atmosphere, a temperature averaging 65°, and a canvass shading overhead are the requisites in order to cause them to produce wood freely and large leaves; the shading must by no means be neglected. The early-forced bulbs will now be out of bloom, and should be removed to some sheltered place from which frost is excluded in order to ripen their foliage, and other plants introduced from the forcing-pit. Hibiscus, Clerodendrons, Justicias, and other half-stove plants which flower in the conservatory may be pruned, and some of them placed in a higher temperature, but they should not be potted until they begin to grow freely. A few Neriums and Hydrangeas may be also forced into early growth for this house. A gentle heat would now benefit the Chinese Azaleas for early flowering. Continue to give as much air daily to the greenhouse as the state of the weather will admit of, and see that all plants are watered regularly; the great object is to keep these plants from growing early. Proceed with the potting of such Heaths as require shifting, using the upland peat for the hardwooded kinds, and the rich lowland peat for the softwooded ones.

STOVE.

Do not at present excite *Ixoras*, or such plants as *Franciscea macrophylla*, which have set their blooms, but young plants of all kinds, to make the most of them, must be started immediately. *Rondeletias* to be cut-in, and started in the warmest part of the house. Pot a few plants of *Gesnera*, *Gloxinia*, and *Achimenes* for early blooming. Prepare tan and other ferment-

ing material for renewing the bottom heat towards the middle of March. Increase the moisture and temperature gradually as the days lengthen. See that suitable composts are ready under cover for potting and sowing seeds.

FORCING-PIT.

Continue to introduce fresh supplies of plants as the former ones are removed to the conservatory, also other plants from which you wish to obtain an early crop of cuttings. Common plants that do not promise much bloom should be at once discarded to make room for others, failures of this nature always occur more or less in early forcing.

PITS AND FRAMES.

Here, if the number of plants required for bedding-out is considerable, there will be plenty of employment for all hands. The whole of the autumn-propagated plants must be potted off without delay, so as to have them well rooted and turned out into sand in temporary pits by the 1st of April, in order to set the pots at liberty for a second lot of plants, which should now be coming forward in the propagating-frame. Make all possible speed in potting on the young stock of *Fuchsia* cuttings as soon as struck, placing them in a kindly bottom heat. A number of *Amaryllis* bulbs should now be shaken out, and repotted in half-decayed turfy loam mixed with a small portion of sand and a pretty liberal supply of charcoal.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

JANUARY, and February, too, as far as the latter month has gone, have been regular "fill-ditches." The ground has not been so soaked in this neighbourhood for years. A plentiful provision has now been made for a dry summer; not only from the water collected in pools and ponds, but from that which has sunk down to raise the height of the springs, which in many cases had fallen unusually low. The soaking of the undersoil will also furnish a supply of moisture to meet a rapid evaporation from the surface. It is pleasant to think of these things when we cannot do as we would like in the kitchen garden. Almost everything rightly viewed has a bright side, if we will only look for it; and much of human happiness consists in the ability and habit of looking at the bright side and not on the dark. In the one case, too, the mind is strung to energy to conquer difficulties; in the other, every little obstruction becomes a huge lion in the way. What complaints have already reached us that Peas and Beans and many other crops cannot be put into the ground. Well, what is the use of the repining? We have sown the same sort of Pea in November and in the month of March, and sometimes we have gathered the last-sown first, and generally within a few days of the other. We would not now, to secure earliness, sow or plant either crop until the ground were nice and mellow, at least not for some weeks to come. To be sure of an early crop, however, we would sow in boxes, on turf, in semicircular drain tiles, &c., and keep in a snug place, and transplant when all was right as respects the ground. Transplanted Peas and Beans will ever be earlier, other things being equal, than those that are sown. In most gardens where any potting is done, there will always be some dry stuff beneath the potting-bench, which will be useful for covering seeds in wet, heavy lands; but in all such soil it is better to refrain from sowing when the ground is claggy and wet, and watch for the first opportunity when it is friable and rather dry.

Except to collect the necessary vegetables we have scarcely done anything in the kitchen garden for a fortnight. If our stiffish ground were either dug or trenched when in a soaked state, it would hang together like indian-rubber or bird-lime all the summer. If we planted when the ground was in such a state, every mark made by the feet of the men would require much breaking and forking to make it friable and kindy in summer. Light sandy soils of course can be worked almost at any time. Good loamy soils should never be puddled when wet. When worked comparatively dry they are nice and mellow all the season. We have seen such soils dug, trenched, and ploughed when exceedingly wet, when the truest economy would have been to have kept spade and plough locked up. The fine bursts of sunshine between the storms of rain and the hurricanes of wind, are the cheerful omens that better weather is coming. There need be no lack of work, though little can be done in the open ground. The garden must be small indeed, if a few weeks of profitable labour cannot be spent without even putting a spade in the ground.

Proceeded with all in-door cropping, as Kidney Beans, Sea-kale, Mushrooms, Rhubarb, Asparagus, &c., as detailed in previous weeks; and went on with planting for cover out of doors, where holes were made in turfy or hilly ground, and the damp was rather an advantage than otherwise, the ground being rendered softer and more friable in consequence. Where ground lies on a slope, a grassy turfy covering is almost as good for preventing anything like soaking as it is for keeping out any great amount of frost. Trapped, and though rather averse to such a course, put poison in places where nothing else could reach it for mice and rats, which are becoming very troublesome. They have completely stumped in and destroyed most of our earliest Cauliflowers. Our reserve of Cauliflowers for the table is now over; but Broccoli is coming in. These garden enemies will throw us back for early Cauliflower. The plants were stumped in one night, and the most provoking circumstance is that the whole seemed done for mischief more than anything else, as leaves and stems were left lying in heaps, and little or nothing had been consumed. We have a wire trap or two for rats, with the spring so strong that if caught at all death must be next to instantaneous. It is horrible to think of even a rat being tortured for hours, caught by the leg in a common steel trap. Even a trap should have something of the humane about it. We may have the right to kill what we call our vermin enemies, we can have no right to torture.

FRUIT DEPARTMENT.

Owing to the weather and the wetness of the ground we have done little in the way of pruning or nailing out of doors. Had we been scarce of in-door or other more suitable work we could have gone on by using planks, &c., to stand upon, thus taking the weight from the soil. Some time ago we took advantage of the snow covering to give our orchard-houses a good smoking with bruised laurel leaves, so as to penetrate into every hole and corner of the house, merely by way of precaution; and in the same way of precaution we washed all the glass and woodwork thoroughly with weak soap water, so as not to spoil the paint, and syringed and engined the same, as well as the trees and walls, with clear water. As we see little chance of washing the trees, which we generally do, we did the next best thing—syringed them thoroughly, also the wall at back, with weak soap water at a temperature of about 140°. If there should be any eggs of insects, that temperature should pretty well kill them. As soon as pruned we will paint the trees all over with a thin paint made of lime, soot, sulphur, and clay, with about a pound of Gishurst to the six gallons. This, when dried, being of a lightish colour, will help to keep the trees back in opening their buds, and the more backward they are in opening the blossom, the less likelihood is there of the trees being injured by a severe frost; and mild though the weather is now, we have known the thermometer to range from 40° to 50° in January and February, and yet stand at from 20° to 25° below freezing-point in the middle of March, and even a dry and quiet atmosphere would hardly save blossoms then, though they will stand a great amount of cold when the atmosphere is still and dry. We do not, therefore, envy some of our friends who tell us that the buds in their unheated orchard-houses are now opening, and some are proud to think that they will gather fruit all the sooner—we hope they will; and if there should be no frost to speak about, this will certainly be the case. As, however, we are anything but beyond the usual time of frost, we would advise all, and especially beginners who have fruit trees in these unheated houses, to keep them back as much as possible by air night and day for a few weeks; and even a little shade, if the sun should be very powerful, will be useful for retarding.

Like all trees under glass, the roots of ours were becoming rather dry from no water being given late in autumn or through the winter. If the soil become very dry many of the buds will be apt to drop off before the blossom expand. Some friends are much alarmed at a few of the buds dropping off before the blossom appears; but if this takes place moderately it just saves thinning the fruit afterwards. If the dryness at the roots, however, continues too long with trees that have well-ripened wood, not only will the buds be apt to drop too freely, but this will take place if you at once water too freely. In the one case the buds will drop from want of moisture; in the other they will be thrown off by too much excitement given at once. It is advisable, therefore, in the case of trees planted out, to water only about a third of the roots at once, waiting a week or so between the times of watering each of the other two-thirds. The only advantage of the comparative dryness in autumn and the first part of winter is, that it secures

greater ripeness and induration of wood, and consequently more perfect flowers. One noticeable fact of such well-ripened wood is that, under similar circumstances, it will expand the blossoms later than trees of which the wood was not equally well indurated. Chiefly by shutting up with sun heat we had one little orchard-house considerably earlier than another with more air left on; but the house that was latest last season has the buds much more forward this spring, and though the wood in both is studded with buds and looking well, the wood in the first house that had more sun heat shut up in it is, if anything, the harder and the firmer. On the same principle hard, well-indurated shoots of Vines break more slowly than shoots not so well indurated when placed in similar circumstances. Hence in the case of Peach trees out of doors, after a dull autumn, there will be little danger of the fruit-buds dropping in spring—they will even be more easily excited and expanded than after a bright sunny autumn; but most likely after a dull autumn, having consequently less indurated wood, many of the fruit-buds will be apt to be defective, either in their female or male organisation, and very likely in both. One drawback to washing Peach trees, &c., with brushes, and even painting them with a smother-up paint, as safeguards against insects is, do the work as carefully as you may, some of the buds will be unsettled, and will fall off when freely swelling; but where there is an abundance of buds the loss of a few is of no consequence, and washing and painting to keep vermin and insects away is much more economical and better every way than smoking and washing to destroy them when they come. Prevention in this case is better than cure. It is well known that in some of our great mercantile establishments, insects, though kept pretty well under, cannot be eradicated: so much so, that purchasers, especially of tender plants, should for some time keep them in a sort of hospital if their collections are all clean and right.

In sunny intervals drew the hand dry through the trusses of Strawberry blooms, and waved a board like a fan over Peach trees in bloom; and where the flowers were at all thin brushed them gently with a camel-hair brush, or the soft side of a feather. In consonance with what is said above, we may mention that in the case of Noblesse Peaches and other kinds that bloom very freely, it is often of great advantage to select the best blossoms—those that have fine prominent pistils and well-loaded anthers, and to thin the others out pretty liberally. We once had a Noblesse Peach tree under our charge that was said to have bloomed very freely for a number of years, and yet set its fruit very sparingly. By simply taking off fully three-fourths of the blossoms there was always plenty of fruit as long as we knew or heard of the tree. This made less thinning of the fruit afterwards necessary. Potted off Melon plants, sowed more seed.

In other departments went on much as in previous weeks, allowing everything to come on slowly until we have a change of weather. For Peach-house and similar structures little fire heat is necessary, as, though stormy and windy, the temperature is high. We have had to pin the most of our sashes, doors, and ventilators to keep them secure.

LIME AND SULPHUR MIXTURE.

This, alluded to by "J. M., *Ermouth*," page 103, is none the less useful, though it can lay no claims to novelty, as, a number of years ago, and several times since, we gave the recipe and the mode of its application in this Journal. We borrowed the chief part of it from a Frenchman, whose name we forget, who used it as a preventive of the mildew on the Vine, and also for effecting the cure of that evil. "J. M." gives the exact quantity of the materials, and what strength to use it, quite correctly. We may just add, as confirming his statements, that it should not be used for Melons at above half the strength specified, and never used at all if the leaves afterwards are not quite dry before the sun touches them. For nothing else in a growing state should it be used stronger than he specifies—that is, half a pint to the four gallons of water. In no case should it be given to Strawberry plants swelling their fruit. The boiling of the sulphur and the quicklime makes the mixture very strong and acrid, a pound of sulphur will thus go a great way. When the liquid cools before bottling we generally boil a second time, and this second brewing is not so strong as the first. It is a useful wash, but for general purposes it will be safer to diminish the quantity rather than increase it, and especially for everything growing and tender. Our chief reason for alluding to it now, however, is for stating that if Peach trees and Apricots in late unheated houses are not washed and painted with clay and sulphur composition, &c., then such a

wash over the walls and trees, before the blossom-buds swell much, will be no bad compromise, and in that case the wash may be used stronger. We may also add that even in the reduced state it should not be used for Peaches after they take the second swelling; in fact, for red spider such a wash applied carefully to the heating medium will be more effectual than syringing the trees, and with the composition applied to the pipes clear water may be used for the trees night and morning. A hot dry atmosphere is what the red spider delights in, and the cooler and moister the air, the less will the insect relish it. When the red spider visits us it generally commences over a hot corner, and thence spreads. Even then sulphur fumes given off at about 150° and plenty of moisture are about the best cures; but the wash alluded to by our correspondent is also useful for keeping the spider away, and sending it adrift. It is used most safely either where there is no fruit or when the fruit is small and young. We feel sure that "J. M." will excuse these remarks. In the case of mildew, &c., the mixture, useful at all times, will be most safely applied when the trees are in a comparatively matured or dormant state. The milky liquid, as described by "J. M.," leaves little or no traces behind it, but it does leave a strong scent about the hands and the wrists of the operator if he do not syringe carefully. We once used it three times over a short row of Peas, and it cleared them of the mildew.

ORNAMENTAL DEPARTMENT.

We have done little in the pleasure grounds. We tried digging a little, placing a board on the grass verges; but it was too wet for our liking. When not too wet, a good chance was given for moving, transplanting, and planting trees and shrubs. We have already stated how we planted a good deal for cover and future usefulness. We made holes and planted pretty well as we went on, turning the turfy covering into the bottom of the holes. We did so to avoid two evils:—First, the soil turned up beneath the grassy covering was stiffish, but more dry and friable than we expected, and it packed nicely among the fibres, which it would not have done if we had waited until the fresh-turned-up soil became wet; and again, if sudden frost came the soil would be too hard for planting. Last year we saw some planting done in frost and snow. A great many holes had been made, and in the change of weather there was nothing to do but plant, but it would have been better to have paid the men for doing nothing. What a sight the trees presented afterwards when the thaw came! If planting is done early in autumn the holes may be dug some time, and the soil be exposed to be aired. When holes are made in winter, and the planting is performed in spring, then favourable weather may be chosen to use the earth about the roots in its best condition; but when planting must be done in winter it is in every way safest to plant pretty well as the holes are made, and then if unfavourable weather come holes can be made when nothing else could be done. Of all times for planting and transplanting we consider the end of October and the beginning of November the best. The ground is still warm then, and roots are encouraged during the winter to meet the wants of the swelling buds in spring.

Finished a good deal of *potting* among Ferns, Mosses, Geraniums, Pelargoniums, &c., and must try and collect a lot of tree leaves, or we shall be at a loss for bottom heat and other heat. A little extra heat will soon be as acceptable as the want of artificial heat was valuable in summer and autumn. We shall leave these matters just now, however, to allude to some simple matters necessary to success in the case of all beginners in a small way, like our enthusiastic correspondent, "H. S."

First, then, see that the plants are clean in stem and leaf, as alluded to the other week. Do not follow the example of your neighbour, and put your plants out of doors in the rain to be washed. We will say nothing of a cold soaking at the roots; but how would you like to be set out in a rain at even 40° from a room at 65°, and be kept pining there for hours?

Secondly, Be sure that the pots you use are clean-washed. Warm water is best, and the pots will dry sooner, and never use them before they are dried. In cold weather the plants will not dislike the pots being heated a little, say to 60°, before using them.

Thirdly, Let the soil you have collected from the sides of the highway be nicely aired, dried, and heated. If on taking it firmly in your hand and squeezing it, it takes the impression of your fingers, but on laying it down gently on a table it crumbles to pieces, it is just in right condition. If on laying it down it retains its position, marks of fingers, and all together,

it is too wet. You may easily heat and dry a small quantity by placing a portion in a bag near the fireplace or over the oven, and then mixing it well before using it. The soil should range in temperature from 55° to 65°. A cold soil often gives a check that it requires weeks of careful tending to surmount. Lastly, At present in shifting your plants keep them in the cold as short a time as possible. If you cannot do the work in the house carry the plants back as soon as you can. Thousands of plants become insect-covered and of bad constitution, because clever people will fill a shed with fresh-potted plants, and then they will begin and carry them, after being starved, into a warmer place.—R. F.

TRADE CATALOGUES RECEIVED.

Downie, Laird & Laing, Stanstead Park, Forest Hill, S.E. and 17, Frederick Street, Edinburgh.—*Catalogue of Garden, Flower, and Agricultural Seeds, &c.*

Sutton & Sons, Reading.—*Sutton's Farm Seed List—Supplementary List of New and Choice Flower and Kitchen Garden Seeds.*

E. P. Dixon & Son, Yorkshire Seed Establishment, 57, Queen Street, Hull.—*Catalogue of Seeds for the Farm and Garden.*

COVENT GARDEN MARKET.—FEBRUARY 10.

TRADE has improved, and prices have advanced. The demand for forced fruit and vegetables, in particular, is greater. Of English Pines the supply is still short; but Grapes are amply sufficient for the demand. Lady Downie's is to be had very good, and a few Muscats may still be obtained. Dessert Apples and Pears are no more than equal to the demand; the former chiefly consist of Nonpareils, Blenheim Pippin, and Sturmer Pippin; the latter of Beuré de Rance, very good, Ne Plus Meuris, and Easter Beuré. For forced vegetables the demand is improving. Salads from the Continent are now coming in very good; French Cos Lettuce brings from 6s. to 7s. per dozen, Cabbage Lettuce from 15s. to 18s. Some Ash-leaved Kidney Potatoes have made their appearance, and may be had at 2s. 6d. or 3s. per lb. Out-door produce of all kinds in season continues to be abundantly supplied. The Potato market is still heavy.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples.....	2	6	to 4 0	Melons.....	each	3 0	5 0
Apricots.....	doz.	0 0	0 0	Mulberries.....	punnet	0 0	0 0
Cherries.....	lb.	0 0	0 0	Nectarines.....	doz.	0 0	0 0
Chestnuts.....	bush.	8 0	16 0	Oranges.....	100	4 0	10 0
Currants, Red	½ sieve	0 0	0 0	Peaches.....	doz.	0 0	0 0
Black.....	do.	0 0	0 0	Pears (kitchen)..	doz.	4 0	8 0
Figs.....	doz.	0 0	0 0	dessert.....	doz.	4 0	8 0
Filberts.....	lb.	0 0	0 0	Pine Apples.....	lb.	8 0	12 0
Cobs.....	100 lbs.	0 16	0 0	Plums.....	½ sieve	0 0	0 0
Gooseberries..	½ sieve	0 0	0 0	Quinces.....	½ sieve	0 0	0 0
Grapes, Hambro	lb.	10 0	18 0	Raspberries.....	lb.	0 0	0 0
Muscats.....	lb. f			Strawberries.....	lb.	0 0	0 0
Lemons.....	100	6 0	10 0	Walnuts.....	bush	14 0	20 0

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes.....	each	0 6	to 0 0	Leeks.....	bunch	0 3	to 0 0
Asparagus.....	bundle	8 0	12 0	Lettuce.....	per score	1 0	2 0
Beans Broad.....	bushel	0 0	0 0	Mushrooms.....	pottle	1 6	2 6
Kidney.....	100	3 0	4 0	Must. & Cress, punnet	0 2	0 0	
Peet, Red.....	doz.	2 0	3 0	Onions.....	per bushel	3 0	5 0
Broccoli.....	bundle	1 0	2 0	pickling.....	quart	0 0	0 0
Brus. Sprouts..	½ sieve	2 0	3 0	Parsley.....	½ sieve	1 0	1 6
Cabbage.....	doz.	0 9	1 6	Parsnips.....	doz.	0 9	1 6
Capsicums.....	100	0 0	0 0	Peas.....	quart	0 0	0 0
Carrots.....	bunch	0 4	0 8	Potatoes.....	bushel	2 6	4 0
Canflower.....	doz.	2 0	6 0	Kidney.....	do.	3 0	4 0
Celery.....	bundle	1 0	2 0	Radishes.....	doz. bands	0 6	1 0
Cucumbers.....	each	2 0	6 0	Rhubarb.....	bundle	0 9	1 0
pickling.....	doz.	0 0	0 0	Saxoys.....	doz.	0 9	1 0
Endive.....	score	1 0	2 0	Sea-kale.....	basket	2 0	2 6
Fennel.....	bunch	0 3	0 0	Spinach.....	bushel	3 0	4 0
Garlic and Shallots, lb.	0 8	0 0		Tomatoes.....	½ sieve	0 0	0 0
Herbs.....	bunch	0 3	0 0	Turnips.....	bunch	0 4	0 6
Horseradish..	bundle	2 6	4 0	Vegetable Marrows	dz.	0 0	0 0

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

N.B.—Many questions must remain unanswered until next week.

OUR JOURNAL (W. N. T.).—If you remit 17s. 4d., with your directions, you can have the Journal, stamped, from our office for twelve months.

COTTAGER'S GARDEN SOCIETY (W. T. J.).—As you can have only one show annually, we recommend you to have it in July.

ORCHARD-HOUSE (W. G.).—As you wish to retard the blossoming, the best thing you can do is to give all the air possible, night and day, and to shade from sun. Our orchard-house trees are scarcely moving at all.

CINERARIA SEEDLING (J. P. J.).—It is one of the best we have seen. Petals stout, velvety, free from notch; colour rich crimsoned purple with slight white at the base, so arranged as to form a star. What the habit of the plant is we cannot say.

FLOWER-BORDERS (C. H. L.).—The plan would look very nice if Golden-leaved Geraniums and Bijou or Alma (white-leaved), were used alternately, and if on gravel, a ring of blue Lobelia went round all. (E. S.).—The lines of the proposed borders will look very well, but they would be better if 2½ instead of 20 inches in width, 1 and 2, will do very well, and so will 3, 3; but if these are to be light-leaved Geranium and Variegated Alyssum, then, certainly, we would not make the circles between 2 and 3, marked 7 and 8, white Verbenas, or if we did, we would give them an edging of lilac or purple. 5 and 6 will do well as Purple King Verbeina, and more especially if you make 4 not Christine and Lady Plymouth, but Christine and a soft yellow.

HEATING A SMALL GREENHOUSE (J. R. U.).—The smallest boiler and three four-inch pipes will do amply for what you want in a greenhouse 18 feet by 9. Five Vines on one side, and two on the other will also be enough, and we should be inclined to plant all inside. The border of 6 feet would do, but if you can go under the window lattice, so much the better. The sorts for hardiness we would recommend are—two Esperience, two Royal Muscadine, and three Black Hamburgs.

INSECTS (A. B. C.).—What you call insects, are the larvae of small black and orange-coloured flies of the genus *Dilophus*, which appear in May and June in great numbers in gardens. We believe that in the larva state they feed upon decaying vegetable matter in the earth.—W.

WARNING A GREENHOUSE (R. V.).—We have no doubt that any of the modes you refer to, or a small stove, with pipes from it, heated by gas, would suit your purpose in such a small house; but we should consider it only waste and labour in vain to seek any other mode of dispelling damp and keeping out cold, when there is already a fireplace and fine leading into the dwelling-house chimney, the great faults of which are too strong a draught, consequently too much heat, and the quick burning out of the fuel. If there could be little draught obtained there might be reason for giving up the fire; but the flue being there, and the draught so strong, all you have to do is to lessen the draught. To do this, have a close furnace-door, also a close-fitting ashpit-door, with one hole in it, which you can regulate by a pin or otherwise, giving a quarter of an inch of an opening or more after the fire is set to work. If even this do not give you a gentle draught enough, then put a damper in your flue before it enters the chimney. If even then the fire burn too bright or fast, place plenty of damp ashes on it. There is no difficulty in making the draught as weak as you like.

EVERGREEN FOR NORTH WALL (L. M.).—*Crataegus pinnatifida* though not so fine nor so quick in growth as Ivy, will, nevertheless, grow and cover a large space on a north aspect; so, too, will *Cotoneaster microphylla*, and *Berberis Darwinii*. As, however, the wall is partially shaded by trees, we should plant Ivy. In the border by the wall you may plant common Laurel, Hollies, Yews, and Aucubas. Nothing does so well in shade as the different varieties of Periwinkle, and they would succeed well as a bordering to the others.

PLANTING OVAL BED (Idem).—We presume you purpose planting your large oval bed by the carriage-drive with low shrubs. Nothing would be better than Azaleas or Rhododendrons of the Catawbiense varieties, which are moderate in price, and edge the bed with *Erica carnea*.

LILIA PURPURATA CULTURE (Nemo).—Your plant, like many that have been subjected to cool treatment, has not had sufficient heat during the growing season, hence after nine months it has not completed its growth, and this is what some Orchids subjected to cool treatment do, for having been previously kept in a great heat, there is not sufficient heat to stimulate growth in the season in which they are subjected to cool treatment. The consequence is, they take a second rest instead of growing, or should they not do so, growth is so slow, and prolonged to solate a period, that it is not completed by the time they should, under other circumstances, be recommencing growth. Your plant will complete its growth under its present conditions as regards heat, by spring; you may then keep it throughout the summer without water, but sprinkling it overhead occasionally, and in as cool a temperature as possible; at the same time a dry atmosphere should be maintained, for if the air become moist growth may be made at an advanced period of the year. You will by these means secure a thorough ripening of the plant, and in the following season it will succeed well in a vinery, and in a temperature of from 40° to 50° in winter. It will be desirable, therefore, to rest the plant next summer if you can, and it will in the succeeding year make its growth at the proper time and ripen them off for flowering. In summer, or when vegetation is active, it should have a temperature of from 65° to 85°, and afterwards 45° from fire heat will be sufficient. Whilst growing it requires an abundant supply of moisture, especially in the atmosphere, but at other times it should be kept cool and dry. Of the year six months should be occupied in growth, and six devoted to rest, and the plant then is the reverse of a shy bloomer; but it is necessary that it make a good growth, and that this be well ripened, otherwise the flowers will be few and far between.

CLERODENDRON THOMSONI CULTURE (Idem).—You are doing right in keeping the soil rather dry at this season, but it should not be so dry as to affect the leaves, and these are no worse of being a little yellow now. Your temperature in summer is too low. It should be 65° at night, and 85° by day. The plant may be fresh potted at the end of this month or early in the next; but if it grow vigorously and you do not wish for a large specimen, do not repot, but make the drainage good, remove a little of the old surface soil, and replace it with fresh. In pruning, thin out the shoots, shortening some and leaving others at their full length. Encourage growth with a moist atmosphere, and afford the plant a light and airy situation. After growth is made reduce the moisture, give more air, and diminish the supply of water at the root, and thus the thorough ripening of the wood will be secured. On this depends the thorough ripening of the shoots very closely together, but allow space for the admission of air and light. It is a beautiful free-flowering climber.

BACK NUMBER (A Constant Reader).—If you enclose four postage stamps with your address, and state that you want the Number published June 27th, 1865, it will be forwarded to you by post.

TOP-DRESSING CROQUET GROUNDS (P. C. M.).—Your croquet ground, the grass of which is much scorched in summer, should now have a dressing of well-reduced manure. Two tons will be a good dressing for a full-sized croquet lawn containing an area of 734 square yards. Spread the dressing evenly over the surface, and after a fortnight's dry weather take advantage of the first shower and draw the back of a wooden rake over the ground, and in the first week in April pass the daisy rake over it in order to clear off any pieces of sticks and straws. All stones should likewise be cleared off. Roll well, and after the first mowing your lawn will show no signs of the manure, and the grass will grow much faster and will not be so liable to burning in summer.

CUTTING DOWN APPLE TREES FOR GRAFTING (Idem).—We do not see what mode of grafting your gardener proposes to adopt, after cutting off the heads 1 foot above where they are to be grafted, unless it be side-grafting, which is different from that stated at page 490, No. 246, and certainly not eligible for old Apple trees. In that case it is not necessary to pare the outer surface of the cut at all, for the grafts will be 1 foot below that. The directions given in reply to "AMATEUR," at the page above referred to are the only ones necessary, and by no other means can the modes of grafting there mentioned be successfully performed. Your gardener may have a plan of his own.

KITCHEN AND DESERT APPLES—LATE PEARS (Idem).—*Kitchen Apples*:—Ariston, November to April; Dumelow's Seedling, November to March; Hambleton Deux Ans, January to May. *Desert Apples*:—Cockle Pippin, January to April; Adams's Pearmain, December to February; and Lamb Abhey Pearmain, January to April. *Pears*:—Beurré de Lance, February to May; and Ne Plus Meuris, January to April. We grow these and know them to be good.

STRUTS FOR BORDER (E. S.).—Your border not being suitable for Rhododendrons and American plants generally, you might plant *Berberis Darwinii* and *B. aquifolium*, and these would do for the rows next the walk, as they are evergreen and do exceeding well on light soil over gravel. *Berberis aquifolium* should be next the walk. At the back you could have a line of Ribes, another of Persian Lilacs, and a third of *Philadelphus coronarius*, planting them, the first two 4 feet apart every way, and the remaining three 6 feet apart. The *Berberis* and the Ribes will flower in April, the Persian Lilacs in May, and the *Philadelphus* in June.

SOWING GRASS SEEDS (A. B. C.).—We think that as the present sward is very coarse, it would be better to sow Grass seeds, and for that the ground should be in as good tilth and as clean as if Carrots were to be sown. In the first dry weather in April, with the early prospect of rain, sow the following:—*Lolium perenne* tenue, 6 lbs.; *Cynosurus cristatus*, 2½ lbs.; *Festuca duriuseula*, ½ lb.; *Festuca tenuifolia*, ½ lb.; *Poa nemoralis*, 1 lb.; *Poa sempervirens*, ½ lb.; *Trifolium repens*, 2 lbs.; *Lotus corniculatus* minor, ½ lb.; and *Trifolium minus*, 1 lb. Slightly rake the ground after sowing, and roll immediately. It will be green by the middle of May. Let the Grass grow until July, then cut it, and every three weeks afterwards until the third week in September. Roll once or twice a-week during the summer. In February give a dressing of well-rotted manure, two tons will not be too much. Treat the Grass in the same way as an established lawn during the second year.

POTATOES AND CELERY ON DAMP GROUNDS (S. Rogers).—Flukes, Forty-folds, and Skery Blues are good cropping Potatoes, and not so liable to disease as many others. They are late kinds. If you wish for early, then Ashleaf and Myatt's Prolific; and for second early none is better than the Lapstone; but the last three are more liable to disease than the first three. The Pink-eyed Radical and the Early White Radical are large croppers, and not so liable to disease as many. You will succeed best by growing them on ridges, and they will crop better and not be so subject to disease, nor run so much to haulm in a wet season. The Incomparable White Celery is an excellent kind, dwarf, stiff and close in habit, solid, crisp, and juicy, and it is the best late White kind. Manchester Champion Giant White Solid Celery is early, large, and the best White for size and flavour. Manchester Champion Red Solid is dwarf, very solid, and crisp, keeping well up to April, and one of the best kinds of Red Celery grown, if not the very best. Laing's Mammoth, is large, solid, and not liable to run to seed. Cole's Defiance is also a large solid Red Celery. On a wet soil growing the Potatoes on ridges is a good plan.

GRAPES IN JULY (Agnes).—To have Grapes in July the house should be closed by the middle of the present month, and for the first fortnight the temperature should be from 40° to 45°; it should then be increased to 50°, at the end of the second fortnight to 55°, and in another fortnight to 60°. On these temperatures allow a rise of 5° on dull days, 10° on those which are cloudy with clear intervals, and from 15° to 20° on clear days. All increase of day temperature should be accompanied by increased ventilation, corresponding in amount to the increase of temperature. The fires should be lighted and kept going whenever necessary to maintain the day and night temperatures. At first fire will only be needed on cold nights, but as the Vines advance it will be required day and night in order to secure the proper temperature, and to allow of the admission of air. You should not close the house and keep it closed without air, but daily open the ventilators, or lights, in the morning when the temperature from sun heat has risen 10° above the night temperature, and that will be by 8 or half-past 8 A.M., but if later give air, increasing it with the heat of the day. Close early or by the time the temperature declines. For instance: if the night temperature be 60° and by that is meant the temperature in the morning before the sun acts upon the house, you will give air at 70°, increasing it to its full amount when the thermometer indicates 75°, and if the temperature rises to 80° or 85°, you have not too much air on, but if the temperature fall on the giving of air, then too much air is admitted, and the amount must be at once reduced. The air given should be reduced to a minimum when the heat begins to decline in the afternoon; say if the house is at 85° and the thermometer falls to 80°, shut up the house.

WORMS IN FERNERY (P. Crowley).—The worms will make the soil very open and loose, and, besides, they will drag into their holes the fronds of the Ferns. A soaking of lime water will not injure the Ferns, and it will bring many of the worms to the surface, and these may then be cleared away. The soil in which these Ferns are growing must be deep, rich, and badly drained; it must also have too little stone in its composition to be suitable for the kinds named.

EGGS OF ATLANTHUS SILKWOORM (W. H. M.).—Write to Lady Dorothy Nevill, Dangstein, near Petersfield.

SHIFTING FUCHSIAS INTO LARGE POTS (Eques).—You may pot your Fuchsias from five-inch into nine or ten-inch pots, which is no uncommon practice in Fuchsia culture. The objections to large shifts are, that plants grow more freely, have fewer flowers, and have not the stiff close-jointed habit of plants more frequently potted. Another objection is, that the roots make for the sides of the pot, leaving most of the soil unoccupied with fibres, whereas when the plants are only shifted when the pots become full of roots, every particle of soil is a mass of roots from the centre to the outside of the ball.

SOAPBUDS (S. N.).—You may apply this washhouse liquid to Rose trees whilst they are growing. We never heard of worms congregating where soapbuds were applied.

ASPARAGUS FOR LONDON MARKET (A Working Gardener).—For the size you mention you might average 9d. per 100 after deducting carriage, &c. The earlier in the season you could get it to market the more you would realise. The larger the better, and none should be sent less than 9 inches long.

ANTS (A Lady).—Water their haunt daily with ammoniacal liquor from a gas works until they disappear, which they usually do in a few days.

ANECTOCHILUS DOMINI (W. Jackson).—It is a hybrid between *Goodyera discolor* and *Anectochilus xanthophyllus*. The leaves are of a dark olive green, with a pale yellowish copper tinge down the centre; the main ribs marked out by fine pallid lines, and the intervening spaces sparsely veined.

HYACINTHS BLOOMING BADLY (X. Y. Z.).—The bloom of the Hyacinths and Tulips being poor is in a great measure attributable to the inferior quality of the bulbs, although your treatment would not conduce to their blooming well. You excited them too much. A temperature of from 50° to 55° from fire heat is sufficient forcing, and the pots should have been placed on a shelf near the glass, and not in a hottem heat of 70°. In other respects your treatment seems faultless.

PLANTING LILIES OF THE VALLEY (S. E.).—It would be much the better plan to take them up from the wood now and plant them in the border, preserving as many of the roots as possible. They would be much more likely to succeed in this way than if you waited until they were in bloom, and then moved the flowering plants only. The latter might or might not flower in the following year; most probably they would not, in consequence of their removal when in flower weakening the growth, so as to prevent the formation of bloom for another year. The blind plants one year are the most likely to flower in the next. You may now select the strongest, and if they have thick and plump buds or crowns they will mostly flower. The thin sharp-pointed buds rarely flower, but they are likely to flower well another year. A soil of two parts leaves, and of sand and loam, will suit them, but one-fourth more loam would be better in place of so much leaf soil.

NETTING (E. C.).—None is better for protecting fruit tree blossoms on walls than Haythorn's hexagonal netting, rather small-meshed.

BOTANY (Economy).—There is no cheaper work of the same kind as "The Treasury of Botany." Henslow's "Dictionary of Botanical Terms" briefly explains them, but nothing further.

SAWDUST FOR PLUNGING POTS (H. M.).—Sawdust is a good material in which to plunge pots of cuttings, and the proposed mode of forming a hotbed over the hot-water pipes will answer very well. The temperature of the hotbed, if the pipes are kept warm, will be from 70° to 75°, and that is sufficient. The temperature of the atmosphere should range from 60° to 65° at night, and from 70° to 75° by day; the place should be kept close and moist.

AZALEAS GROWING PREMATURELY (A Subscriber).—It is by no means uncommon for Azaleas to make young or new growths before flowering, and their doing so results from their being kept too warm, and from the buds not being well ripened in the previous season. This premature growth will not interfere with that subsequently made, and sometimes it does not materially affect the present bloom, but in other cases the flower-buds become abortive. Some varieties are more subject to this peculiarity than others, and it is chiefly confined to those carrying an extra amount of foliage. These bloom as well with the new growths appearing as not; whilst those that are spare in foliage through the winter and start new growths early in the season, often have the buds abortive. We know of no remedy except to secure a good growth after blooming by a moist growing heat, to have the wood well ripened, and to keep the plants cool and well aired in winter.

TREES FOR NATAL (E. S. E. G.).—Almost any plant or tree that would succeed in the south of Italy would do in the middle terrace of Natal, but from the specimens of woods shown in the Exhibition of 1862 we should think that it would not answer to plant for timber. Yellow-wood may readily be procured in the colony in logs of 40 feet long and 5 feet in diameter; and though not durable when exposed to the weather, it answers well for in-door work. Sneezew-wood, which is produced by a species of *Pteroxylon*, is on the contrary very hard and durable; instances are known of its continuing sound in the ground for more than half a century. Besides these there are Stinkwood, and many other woods useful for furniture and wheelwrights' purposes. We think that the best varieties of fruit trees and vegetables would be a far more useful importation.

NAMES OF PLANTS (E. S.).—It is *Chimonanthus fragrans*, a native of Japan, introduced exactly a century since. It is hardy, though it flourishes better in a conservatory. (*K. M. H.*)—*Chimonanthus fragrans* (*J. S.*)—1, *Goldfussia isophylla*; 2, *Justicia flavicoma*; 3, *Sempervivum tortuosum*. (*Old Subscriber*).—The following Ferns were unaccompanied by numbers: *Adiantum tenerum*, *A. pubescens*, *Aspidium macrophyllum*, *Pteris cretica*, *Allosorus rotundifolius*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 10th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 4	30.007	29.665	47	35	45	45	S.W.	.35	Overcast; rain; very boisterous, thunder, lightning, and heavy rain at night.
Mon... 5	29.936	29.740	50	43	45	45	W.	.02	Clear; partially clouded; overcast; hoisterous.
Tues... 6	29.781	29.689	55	46	46	45	S.W.	.00	Fine; boisterous; overcast; boisterous at night.
Wed... 7	29.753	29.543	54	35	45	45	W.	.10	Densely clouded and boisterous, with rain; very fine at night.
Thurs... 8	29.960	29.844	53	36	45	46½	W.	.14	Clear, quite cloudless; rain at night.
Fri... 9	29.732	29.592	52	39	49	46	S.	.48	Rain; boisterous and wet; heavy rain.
Sat... 10	29.514	29.300	49	38	44½	46½	S.W.	.06	Clear; bright sunshine; stormy and wet.
Mean..	29.812	29.624	51.43	38.85	46.96	45.57	...	1.15	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

HOW OUR POULTRY-YARD IS MANAGED.

I SEE in your Journal of December 12th that "J. S." asks how he is to obtain thirty eggs weekly, and I see you have given him very good advice respecting the breed and number of pullets he should keep. If you will allow me, I will state how we manage our small poultry-yard, as we have for the last eight or nine weeks collected as many as from ten to thirteen eggs per day from twenty-six fowls, chiefly pullets.

In the first place, we selected six good hens, chiefly Dorkings; we then crossed them with the Cochin-China, so as to have a little of the Cochin blood in the chickens, just enough to show that they had been crossed with that breed, and under the first two hens that will sit we put twelve or thirteen eggs each. We find that it is an excellent scheme to sit two hens at one time, as they will both hatch their chickens nearly at once, and then if there be a few eggs longer in hatching than usual, one hen will take the chicks, and the other will finish the hatching. Be sure to sit hens, and not pullets. If you choose you can put both broods together; for very often, and especially at this season of the year, you will seldom obtain a full brood—more likely six or seven chicks from each hen, and nothing, I think, looks so bad as a hen going about with two or three young ones. On the other hand, it is very pleasing to see a hen with a good brood—say fifteen or sixteen chickens—something for the hen to do.

I last year noticed several remarks made by persons visiting our place (I say our place, although I mean my employer's place; when a man makes use of the word "our place," it shows that he feels himself at home, and I think he takes more interest in whatever he may have under his care; but perhaps some employers may not like to hear their servants make use of the word); they would say, "What a fine brood of young chickens you have! How do you manage to hatch so many?" But the above are not all the advantages gained by sitting two hens at one time, for one of the hens can be shnt up for a few days till she forget her young ones, and in a little time she will recommence laying. I find that hens crossed as I have already stated turn off their young sooner than some other sorts, besides being first-class hens to sit.

As a rule we never kill any of our early pullets, although we are sometimes forced to do so; we generally kill all cockerels, except when we see a promising young bird, and then we save him. The young pullets lay plenty of eggs for Christmas. It might be supposed that our stock must increase very fast, but we generally sell or kill as many old hens as we save pullets, never keeping a hen longer than four years, unless she has some good quality, and then she has a reprieve. A new young cock should be introduced every season; it is a good plan to import some fresh blood into the stock every year.

Now, as regards food. Perhaps it will be said the chickens must live well. I will admit that they do; they have plenty, not enough to waste. I have seen some men take a gallon or peck of corn and throw it all out at one time on the ground, whether the fowls wanted it or no. Now this is very wrong

and very wasteful—nothing looks so bad as a quantity of food lying on the ground and the fowls running over it. It is, as I have said, very wasteful, and, besides, it makes them very dainty. They should have no more food than they will eat up. The person feeding them can by careful observation tell how much fowls will eat; sometimes they will eat more than at others. If the atmosphere is moist they can find more worms, &c., than on cold dry days, and they then require less corn. Our twenty-six fowls generally eat about three quarts of maize per day, three pints are given them in the morning and three pints about two hours before roosting-time, and when the man feeds the pigs he generally gives a little food out of the pail; they very seldom have any bits from the house. They have a very good run, plenty of vegetables to eat, and sufficient room to clean themselves.

I should advise "J. S." to do as we do when eggs are dear, which is generally about Christmas—viz., give extra food, say a little greaves and barleymeal, and they will lay more. Always keep the fowls as warm as means will allow, and when eggs are cheap feed only on maize or barley, I prefer maize, and let them go off laying for a time as a sort of rest-period. I keep fowls for profit, and not for a hobby only. I think if "J. S." will attend to the above simple mode of treatment he will be sure to obtain the number of eggs required.—J. R. P., *Bickley*.

THE POULTRY CLUB'S NATIONAL SHOW.

I WENT with my birds on the Wednesday evening, and saw them placed in the Show, no person except officials being admitted. I then saw by the hand-bills that the public would be admitted at three o'clock on Thursday. So I went about that time, and found a few exhibitors like myself waiting for admittance. While standing and talking to some friends I heard some one say, "There are some Pigeons flying about inside." I turned round and saw that they were my Spots, at least I had a very great suspicion that they were mine. The doors opened at last, and I bought a catalogue—looked for the number of my Spots, went to the pen, and found only one there. I asked one of the attendants where the other was. He said it was upstairs, and would be caught when the gas was put down, so I did not trouble any further, for I knew such accidents would happen in the best regulated Shows.

Well, I went on looking at the several pens until I came to my Fantails, and found to my disgust that some one had nearly pulled the tail feathers out of both of them, for when I packed them they were quite perfect.

But matters did not end here. Other fine pairs had shared the same fate; and in going a little further on, I next detected that some one had wantonly plucked the frill out of my Turbits, and left the skin completely bare.

I made a complaint to one of the Committee and he said it was a pity, but he said he was certain he did not know who had done it.

Now, this mischief must have been purposely done, and by an interested party too—for I heard that the feathers were all found in a corner. Who it was that had been so malicious I do not know. There is no wonder that fanciers should give up the fancy so soon when persons perpetrate such acts as the above. I have shown at a great many shows in England and Scotland, but never saw birds in such a state before.—JOHN THACKRAY, *York*.

I have just received my birds (5 P.M., Wednesday 7th), from the late Rochdale Show, and certainly think it an unreasonable time for transit (104 miles), as the Exhibition closed on Monday. Nearly all the tail feathers of my two pairs of Fantails have been pulled out. I am also informed by a gentleman who visited the Show that those of Messrs. Thackray, Emberlin, and Robinsen have likewise been treated in the same heartless, cruel, and dastardly manner; in fact, my birds are so badly disfigured that I cannot possibly recognise them. As it is well known to all Pigeon-fanciers that some seven or eight weeks must elapse before the tails can be reproduced, of course it prevents all chance of exhibiting them in the meantime. I should feel much obliged by any suggestion of your own in this matter, or from any correspondent of the Journal. I certainly do not intend, so far as my own personal trouble and expense are concerned, to let the matter sleep, if by any means the offender or offenders can be publicly exposed and duly punished.—H. YARDLEY, *Market Hall, Birmingham*.

GAME BANTAMS.

As a breeder of Game Bantams, I must express my great surprise at "WILTSHIRE RECTOR'S" avowment in answer to "GALLER'S" that Black Reds are easy to breed, for, of course, he means easy to breed good. Now, I aver the contrary. I say positively and distinctly, that it is most difficult to breed many first-class birds, however many may be hatched and brought up. I have for several years bred Game Bantams. In 1864 I reared upwards of 100, and in 1865 nearly 150; therefore, I am not talking at random. In 1864 I bred from a bird, bought of Mr. Kelleway, which had proved his goodness by winning wherever shown. I put him to hens bred from Canser's, Harvey Bayley's, and Forrest's strains. Two of these hens were first at the Crystal Palace, and yet I am sure I am within the mark when I say that not more than ten of their chickens could be called first-class. In 1865 I bred from Mr. Kelleway's second-prize Birmingham cock (said by him to be one of the best birds he bred in 1864), and Mr. Munn's Kendal cup bird (1865), and my hens were the pick of the chickens of 1864, and two hens with which I won the first prize at the last show but one at Islington (for these hens when pullets Mr. Kelleway offered me any price that I liked to ask him), and yet I am sorry to say I had not out of all my chickens more than half a dozen cocks and two pullets that could be fairly called first-class birds. Now, if this does not show that it is not easy to breed good Game Bantams, I should like to know what would prove it.

I think "GALLER'S" very fairly asks how it is that first-class birds fetch such a price if they can be so easily bred? "WILTSHIRE RECTOR" instances the tulip mania, but he is much too wide awake, I am sure, not to see on reflection that that has no analogy with the present case. The tulip mania was a mere gambling affair, many roots of a particular flower being sold at fabulous prices, when, perhaps, only one root of it was really in existence, and the bulbs did not, I believe, in the great majority of cases pass from seller to buyer at all, but were sold to be delivered at a distant date, which never came. Now, if high prices are given for Game Bantams by a good judge of them, it is scarcely credible that he would do this if he could obtain equally good birds cheaper elsewhere. If, on the other hand, these high-priced birds are bought by those who do not understand the essential points of the breed, it really proves nothing but the ignorance and folly of the buyer. I know of £10 having been recently given for a pair of pullets by a gentleman, who, I am sure "WILTSHIRE RECTOR" would admit, knows what a Game Bantam should be. I have been offered £10 for a cockerel within the last ten days by a gentleman who is known to possess one of the best strains of birds in the kingdom, and if I am not misinformed, Mr. Hawkesley has been offered £15 for his really splendid little bird which was first at Birmingham in December last. I would give him £10 for it any day.

In the face of these facts can it be contended that Black Reds are easy to breed? Is it not in fact reasonable that they should not be? The breed has only been in existence from eighteen to twenty years, and I should think is most probably the result of a cross, perhaps that of the old Nankeen Bantam with the Game cock. Hence the breed has not yet attained that fixity which other well-known and long-established breeds possess, and the tendency to throw back is very strong. The fact is, however, that it is not easy to breed first-class birds of any variety. I have been a Spanish fancier for many years, and I am sure breeders of that splendid fowl will bear me out when I say that not one chicken in ten comes first-rate. In short, all breeders know well that good birds of any fashionable variety always command a high price, simply because they are difficult to breed.—P.

DRAGONS WITH WHITE RUMPS.

IN No. 247 of THE JOURNAL OF HORTICULTURE Mr. Percivall makes some remarks on Dragons with white rumps being useless as prizetakers. For the information of the Birmingham Columbarian Society, of which I am a member, I will thank you, or Mr. Weir and Dr. Cottle, to say if Mr. Percivall's remarks are "patent," inasmuch as the same birds that Mr. Percivall alludes to were shown at Manchester, judged by the same Judges, and the awards were not only reversed, but the prize birds at Birmingham did not even receive a notice. If Dragons with white rumps have gone out of fashion, it will be of the greatest importance to the members of the Birmingham Columbarian Society to know, many of them being breeders of Dragons.—C. B.

RAILWAY CHARGES.

THE first of the two suggestions by "Y. B. A. Z.," which appeared in your issue of January 23rd, I consider decidedly the better and by far the more practicable. The Poultry Club should, I contend, take the matter up with the railways, and I do not see a better plan than by petition. Some amount of trouble and inconvenience must attend it, but in that I shall be happy to bear a share. "Our Editors" are in possession of my name and address. If any one should feel disposed to communicate with me, it can be done through them. Not being yet a member of the Club, I can do very little more.

With regard to "expense," I believe that we are urging a reduction of railway rates to save the pockets of exhibitors from what we, the poultry exhibitors, consider unjust charges, at the same time generously taking into consideration the benefit of railway companies who convey our poultry, and not forgetting the extension of poultry exhibitions, and the same being made accessible to a class who at the present time cannot show their specimens simply because of the various "expenses" attending it, the most grievous being, perhaps, "railway charges." But why make it more expensive by devoting some part of our incomes to the attainment of the object in view? I must confess I cannot clearly understand this, and, not understanding, think it decidedly unnecessary. Is it not making bad worse? I am open to correction on this point, being but a young exhibitor and totally unacquainted with the rules of the Poultry Club. Now, I would add to "Y. B. A. Z.'s" recommendation, that the Poultry Club advocate in their petition—that is, if they will consent to take the matter up, that exhibition poultry be conveyed to and from places of exhibition at the ordinary rate of parcels. This would reduce the expense considerably, for, as I stated in a previous letter, the rate for conveying poultry is 50 per cent. more than for parcels, or half as much again. I think this proposition would be more readily listened to by the railway officials, for, having unsold specimens returned free is open to much confusion and dishonesty. We must give the companies as little trouble as possible, and I would also point out to them the advantages to be gained on both sides.

If these suggestions are considered of any service, I shall be happy to place myself in communication with the Secretary of the Poultry Club (a member of which I hope shortly to be), and at all times shall be only too glad to render any assistance that may lie in my power for the benefit of poultry exhibitors, and poultry shows.—F. H.

It was my intention to have commenced the campaign with the London and South-Western Railway. This is the railway that I mentioned in a previous Number as always charging the return journey but repaying it on application, so that I was not surprised to see "J. De L. S.'s" communication on the subject. Your next correspondent, "P.," however, would be astonished how crotchety some companies are on the point he alludes to. I know a company that for two years allowed this privilege, and when the committee, taking it for granted, printed it the third time in the regulations before they asked, making sure that there would be no difficulty, the boon was refused! I have no doubt that if all secretaries made it a point to apply, railway authorities would begin to see that it was a grievance.

The plan suggested by "CANTUS," that six gentlemen should form a deputation to the various railway companies, is a very good one, if they can be found. This could be done in addition to the Poultry Club, and a petition by breeders independently of the Club; and it would be a great thing for the deputation to be able to say, "We represent the whole of the leading exhibitors, as proved by these signatures."

A uniform rate by all railways would be capital could it be managed, and if printed and sent to each exhibitor and station-master, prepayment would be an easy matter. At present it is a great source of inconvenience and annoyance, as some of my correspondents have already shown me, and as I have felt myself.

Another correspondent has mentioned to me that one railway will take birds by the longest possible way to make the carriage come heavier, and monopolise it for themselves. This is very unjust.

In conclusion let me urge all exhibitors to take the matter up together. "Our Editors" have kindly consented to act as treasurers of the independent fund, and, I believe, the Poultry Club have begun to move in the matter: but we may act independently of each other with better effect. If, how-

ever, we are to do anything with a petition we must start the matter at once. Several exhibitors have written me, saying they will sign, putting down their names for 10s. 6d., and some guaranteeing more. The former sum would not be felt much by any of us, and would form a handsome total, whilst, if we are successful, its repayment will be rapid. I hope next week to give a list of those who have promised their help; meanwhile, I shall be very glad to hear from others, and, perhaps, it will simplify matters and save postage, if I sign myself—JOSEPH HIXTON (Y. B. A. Z.), *Hinton, near Bath.*

MIDDLETON ORNITHOLOGICAL SOCIETY.

THE first Exhibition of this Society was held on Friday and Saturday last. The following is the prize list:—

CANARIES.

NORWICH (Clear Yellow).—First and Second, G. F. Welch, Wilson Hall, Derby. Highly Commended, W. Walters, Winchester; J. Moore, Northampton. Commended, J. Wynne, Northampton.

NORWICH (Clear Buff).—First, G. F. Welch. Second, W. Walters. Highly Commended, J. Bennett, Derby; W. Walters; J. Moore. Commended, G. Cummings.

NORWICH (Crested or any other variety).—First and Second, W. Walters. Commended, J. McMillin, Great Percy Street, Pentonville.

BELGIAN (Clear Yellow).—First, W. Phillips, Old Basford, Nottingham. Second, R. E. Ashton, Oaklands, near Bury.

BELGIAN (Clear Buff).—First, J. Horrocks, Blackley. Second, W. Ogdin, Middleton.

CRESTED BELGIAN (Any colour). First and Second, H. Barlow, King Street, Oldham. Highly Commended, A. Hamer, Oldham. Commended, R. E. Ashton.

LIZARD Golden-spangled).—First and Second, A. Hamer. Third, S. R. Stanley, Manchester. Highly Commended, G. Cummings, Southgate Street, Gloucester; R. E. Ashton; J. Tattersall, Oldham.

LIZARD (Silver-spangled).—First, A. Hamer. Second, R. E. Ashton. Third, J. Tattersall. Highly Commended, J. Tattersall.

MULE (Jonque Goldfinch).—First, Second, and Third, D. H. Noar, Cannon Street, Manchester. Highly Commended, E. Horsfall, Manchester.

MULE (Mealy Goldfinch).—First and Second, D. H. Noar. Third, E. Horsfall. Highly Commended, W. Walters; W. L. Chapman, Northampton.

MULE (Linnet).—First, H. Manners, Lower Broughton, Manchester. Second, A. W. Booker, Allerton, near Liverpool.

MULE (Canary, any variety).—First, W. Walters. Second, W. L. Chapman.

ENGLISH BIRDS.

GOLDFINCH.—First, C. H. Fisher, Stroud, Gloucestershire. Second, H. Ashton. Highly Commended, A. Hamer.

LINNETS.—First, S. Reynolds, William Street, Derby. Second, J. Tattersall. Highly Commended, G. Cummings.

SKYLARKS.—First, A. Hamer. Second, R. Welstenholme, Limefield, Bury. Highly Commended, W. Walters. Commended, J. Turner.

THRUSH.—First, Mrs. Bagnall, Middleton. Second, J. S. L. Beanfort, Prestwich.

FOREIGN BIRDS.

PARROT (Green).—Prize, A. W. Booker. Commended, J. Heaton, Middleton.

LOVE BIRDS.—Prize, H. Ashton. Commended, W. Walters.

GRASS PARAKEETS.—Prize, H. Ashton. Highly Commended, C. H. Fisher; J. Jones, Manchester.

ANY OTHER SORT OF LARGE FOREIGN BIRDS.—Prize, A. W. Booker (King Lory). Highly Commended, W. Walter (Bullah Bullah).

ANY OTHER SORT OF SMALL FOREIGN BIRDS.—Prize, H. Ashton, Prestwich. Highly Commended, H. Ashton; R. E. Ashton, Oaklands near Bury (Brisbane Finch); W. Walters (Saffron Finch). Commended, W. Walters (Madagascar Bird).

PIGEONS.

CARRIERS.—First, C. & E. Roys, Green Hill, Rochdale. Second, J. R. Robinson, Nile Street, Sunderland. Commended, J. Frith, jun., Dewsbury.

ALMOND TUMBLERS.—First, J. Fielding, jun., Rochdale. Second, J. R. Robinson.

TUMBLERS (Any other variety).—First and Second, J. Fielding, jun. BARBS.—First, J. Frith, jun. Second, H. Beldon, Bingley. Highly Commended, J. R. Robinson.

JACOBS.—First, C. & E. Roys. Second, H. Beldon. Highly Commended, A. Middleton, Newport, Mon.

FAKTAILS.—First, C. & E. Roys. Second, H. Yardley, Birmingham.

OWLS.—First, C. & E. Roys. Second, J. Fielding, jun.

DRAGONS.—First and Second, H. Yardley.

BALDS AND BEARDS.—First and Second, C. & E. Roys.

TRUMPETERS.—First, H. Beldon. Second, C. & E. Roys.

TURBETS.—First, R. Thompson, Kendal. Second, H. Yardley. Commended, H. Beldon.

ANY VARIETY.—First, C. & E. Roys. Second, Countess of Derby, Knowley Hall, Prescot (Isabells). Highly Commended, C. & E. Roys, H. Yardley; F. Broemel, Levenshulme, Kent (Siberian Ice Pigeon).

JUDGES.—Mr. A. Evans, 85, Chapel Street, Salford; Mr. J. W. Edge, Aston New Town, Birmingham; Mr. G. J. Barnesby, Derby.

POLLEN-GATHERING IN SCOTLAND.—Bees first seen pollen-gathering at 3 p.m. this day (January 25th) upon flowers of early striped yellow Crocus and *Jasminum nudiflorum* in front of my house. In addition to Snowdrops, Christmas Roses, Primroses, Hepaticas, *Arabis alpina*, &c., as spring flowers, we have, through the mildness of the season, autumn Stocks, Wall-flowers, and some fair buds of China and Hybrid Perpetual Roses still in bloom.—I. WEBSTER, *Gordon Castle.*

APIARIAN NOTES.

(Continued from page 82.)

In resuming the account of "My Apiary," I now propose referring to the pages of my note-book, and jotting down a few leading particulars of the results of the year's operations. I take each hive in order, as numbered below.

No. 1.—One of the hives attacked by dysentery, strengthened by the union of bees and brood-combs from another sufferer, No. 19. A large frame-box super was put on, in which the bees, so long as it was allowed to remain, worked admirably. This was removed, prior to being completed, on June 19th, as the hive was required to furnish bees for a large artificial swarm. The hive was transferred to another stand in the same garden, and a great number of the bees left it for the new hive substituted for it. Notwithstanding the enforced diminution, this stock threw off a large natural swarm on the 22nd, three days later. No further honey was obtained, but it is now one of the strongest and most populous hives that I have.

No. 2.—On the 29th of May, while observing No. 18—a Ligurian stock, with a beautifully pure Italian queen—a large swarm suddenly poured out from it, and the bees appeared to fly right away without attempting to settle anywhere. After a long period of suspense they were discovered in the act of clustering at a considerable altitude on a large beech tree growing in the garden of our right reverend diocesan, on the top of the old city wall. To reach the swarm at all was a matter of very great difficulty, as it hung suspended from the end of a long and flexible branch; but it was at length happily and successfully temporarily secured in a common straw hive, and was permanently domiciled in a large bar-and-frame box.

On the 8th of June this box was nearly filled with combs, and on the 19th it was deprived of all save one, on which, after a search, a queen was found. This, with the bees and her majesty, was placed in an empty hive on the stand previously occupied by the swarm. All the bees were shaken or brushed off the remaining combs, and were left to furnish a new habitation, while the combs which had been taken away, and which contained splendid masses of brood in every stage, were restored to the now tenantless box. No. 1 having been removed, as before stated, this hive of brood-combs was located in its place; a large population at once took possession, and numerous royal cells were in time constructed. From these several small nuclei were supplied with one or two royal cells, and small artificial swarms, in order to increase the number of my Ligurian stocks, were started; but I was not very fortunate in obtaining pure breeding queens, owing to the immense number of common drones in my own and the adjoining apiaries.

No. 2, the pillaged swarm, containing the original Ligurian queen, refilled its hive with combs, but required copious feeding in the autumn.

No. 4.—An octagonal box hive, in which all the bees died in the winter. On the 24th of May bees were observed flying in and out, evidently reconnoitering, and preparing the hive for the reception of a swarm. I cut away a great deal of bad comb, and removed the dead bees, leaving the hive on its stand. On the 28th a swarm rose from a hive on the opposite side of the lawn, and without any previous attempt at settling, flew right across to this box. A most curious sight was presented; the hive seemed a mass of moving insects, rolling over and over each other, and tumbling in large clusters to the ground. It was a long time before all the bees could effect an entrance through the contracted doorway. When quite settled the hive appeared crammed, and I resolved to put on a super as soon as possible; but, unfortunately, this apiary being in the country, I had none then at hand. On the 30th, before I could again visit this apiary, to afford the required accommodation, No. 8 threw off a swarm, which pitched on an espalier tree, not far from No. 4, the bees of which sharing in the excitement rushed out of the hive and clustered within a few yards of the other. Both swarms were secured in separate receptacles; but in a quarter of an hour that from No. 4 suddenly left, and the bees tumultuously joined with those of the swarm from No. 8. All the bees were in the evening transferred into a large-sized frame hive, which they appeared to more than fill, so vast were their numbers. I may have to notice this hive further on, but now return to No. 4. A few of the bees did not go off with the rest, and these, with returning stragglers, formed a very diminutive cluster. It was doubtful whether the old queen was left behind, or whether the bees were engaged in rearing royal larvae from the eggs which had been deposited by her before the desertion took place, as they appeared to work steadily,

carrying in pollen as well as honey. On the 8th of June a second swarm was added, leaving the queens to chance, and the hive having been previously tolerably full of comb, a very nice stock is the result.

No. 5.—A frame hive on which a super was put in May, in which the bees at first worked vigorously. A very fine swarm was thrown off, which clustered in the top of a high fir tree; before proper means could be taken for securing it, the bees rising suddenly flew off in a straight line to a wood more than a mile distant, where, though followed as quickly as possible, they were utterly lost sight of.—S. BEVAN FOX.

(To be continued.)

OUR LETTER BOX.

FECONDATING EGGS (*Cockerel*).—In Turkeys the whole of the eggs of the season are fecundated at once, and so, probably, are those of other poultry.

ARTIFICIAL HATCHING (*G. M. F.*).—The temperature generally must be 104° or 105°. It may be allowed to fall to 95° once a-day for half an hour, as when the hen leaves her nest. If you send four postage stamps to our office with your directions and order No. 137 of this Journal, New Series, you will find there a drawing and directions for treating the chickens.

EGG WITHIN EGG (*T. Bottomley*).—It is not a very uncommon occurrence. The cause is explained in "The Poultry-keeper's Manual," just published at our office.

DUCKS (*A. B. C.*).—Barley meal mixed with milk is as good food as any for Ducks to be exhibited. The characteristics of Rouen Ducks in "The Poultry-keeper's Manual" are those which constitute excellence.

ULCERATED FACE OF SPANISH COCK.—A. B. has a Black Spanish cock which has a hard yellow substance on the white of his face and ears; it is light yellow at first, and then becomes darker, and hard like a scab, and very fast to the ear. If pulled off it soon grows again and becomes larger than before.

[There is no hope of your Spanish cock recovering. He may serve you to run with the hens during the season if you have no other. He has the bad face to which Spanish fowls are alone subject, and for which there is no cure known.]

POULTRY DISEASES (*Poultry*).—You do not tell us in what state the other viscera were—whether the liver or intestines were ulcerated. The darkness of the comb, the food remaining long in the crop, and the flow of liquid from the throat, may arise from torpidity of the digestive organs. Give each bird daily a dessert-spoonful of brandy; feed on soft food, and give bread soaked in ale once a-day until health is restored. We should be obliged by your letting us know the result of this treatment.

PIGEONS (*S. A. C.*).—Your yard (6 feet by 9), would be too small for even twenty Runts. If you can breed a pair of Runts to match of 5 lbs. weight, or nearly so, you may make tolerably sure of many prizes. Runts are not generally considered good breeders. For that purpose a cross between Pouters and Dragons would give more satisfaction, or any of the large mongrels. By "Blue Rock" I suppose you mean the common Dovecot Pigeon; they are sharp-flying birds, and no doubt if trained would fly long distances. Two Pigeons out of one nest will breed together, provided they are cock and hen; but it is not generally advisable to pair them, the young in such cases being rather more delicate.—B. P. BRENT.

GOLDFINCH MULE BREEDING (*C. Sedley*).—Goldfinches breed about May. You may put the Goldfinch and Canary together in April. Let the cock have possession of the cage, and when he sings stoutly put the hen along with him. The cock Goldfinch sings louder and is brighter in colour; he has more black on the tip of the beak, and is black at the gape. The hen is often grey at the corners of the mouth, and blacker on the shoulders of the wings. They pair almost as readily as Canaries. Canaries may be coupled this month, but it is better to wait a month or six weeks longer.—B. P. BRENT.

WOONTRY HIVE (*A. Norice*).—1st, Bees will sometimes survive the winter in exposed wooden hives not more than an inch thick, but they cannot be safely kept in this way. Under no circumstances should the hive itself be painted. 2nd, The openings in the adapter may be half an inch wide, and some apiarists prefer their running across the bars instead of from front to back. They should then, however, be at the front and back, and on no account across the hive's centre. 3rd, It is most convenient to have a swarm in the first place in a common straw hive. As soon as it is settled spread a cloth on the ground, on which stand the frame-hive without its floor-board, and the front raised an inch or two. Then knock out the swarm on the cloth close in front of the hive, towards which a stream of bees should be gently directed by means of a feather. As soon as all, or nearly all, have entered, the hive may be stood on its floor-board, and put in the place it is intended permanently to occupy. Or, if the frames are well furnished with guide-combs, the crown-board may be removed, and the swarm knocked out on the top of the exposed bars, between which the bees will rapidly disappear, when the crown-board may be replaced and the hive put on its intended stance. 4th, An adapter is essentially necessary, as without one there would be little chance of breeding being confined to the stock hive, and the combs would be so connected that much loss, both of life and honey, would be caused by removing the super. 5th, The only entrance should be in the stock hive. 6th, Equal distances between each, which will be found to give a space slightly in excess of half an inch. 7th, There is no objection to allowing the bees to commence in a super 4 inches deep, and then raising it on a square frame of the same depth; but it would cause them much loss of time if the two were divided so as to compel them to commence a new set of combs afresh from their foundations.

A GOOD BEE-HOUSE (*A Bee No. 2*).—It is probable that in the bee-house described in page 223 of our last volume, it might be found convenient to have both the roof and back attached to the house itself by hinges, as suggested by you, instead of being entirely detached.

GOLD AND SILVER FISH (*H. P.*).—We know of no other place than in the conservatory over Covent Garden Market.

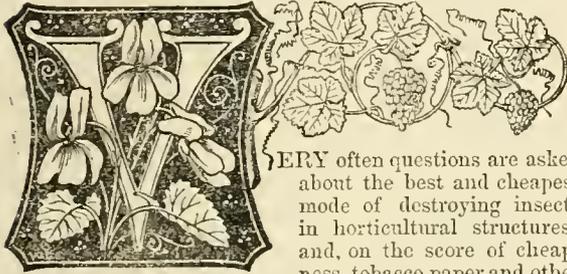
PRESERVING COOKED MEAT (*H. R. Hiley*).—Cooked meat is preserved "as long as possible" in tin cases, soldered-up whilst the meat and tin are hot, so as to expel the air as much as may be.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEBRUARY 20-26, 1866.	Average Temperature near London.			Rain in last 30 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
20	TU	Sun's declination, 10° 53' s.	45.3	30.5	37.9	20	7	17	23	5	24	9	7	0	5	14	6
21	W	EMBER WEEK.	46.5	32.2	39.3	18	5	7	23	5	1	10	7	0	6	13	53
22	TH	Erica vernalis.	46.3	31.8	39.0	17	3	7	25	5	45	10	19	1	7	13	45
23	F	Gnidia imberbis.	46.9	31.4	39.2	13	1	7	27	5	36	11	23	2	8	13	37
24	S	St. MATTHIAS.	46.7	32.6	39.6	18	59	6	29	5	after.	21	3	9	13	28	
25	SUN	2 SUNDAY IN LENT.	47.2	32.7	40.0	19	56	6	31	5	35	1	11	4	10	13	19
26	M	Hovea purpurea.	47.1	33.4	40.3	20	54	6	32	5	40	2	54	4	11	13	8

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 46.6°; and its night temperature 32.1°. The greatest heat was 58°, on the 21st, 1859 and 1846; and the lowest cold 18°, on the 24th, 1850. The greatest fall of rain was 0.92 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

THE GROWTH AND MANUFACTURE OF TOBACCO FOR FUMIGATING-PURPOSES.



VERY often questions are asked about the best and cheapest mode of destroying insects in horticultural structures; and, on the score of cheapness, tobacco paper and other inventions are recommended. After all the patent preparations there is nothing that can rival Tobacco for fumigating-purposes; but the question of expense is a consideration where plants liable to the attacks of green fly are grown on an extensive scale. For a house of moderate dimensions little less than a pound of shag tobacco will prove ample, and then the dose should be repeated once or twice afterwards in order to prove effectual in the destruction of the insects which survive. This item will in the course of a year prove considerable, and add a rather large amount to the expenses of the garden. Now, in order to overcome this expenditure, for several years I have given attention to the growth and preservation of Tobacco, and I have found by care in its proper preparation that the home-grown is quite equal to the best Tobacco procured from the tobaccoists. The kind I use for this purpose is the *Nicotiana tabacum*; it was introduced into this country about three hundred years ago by Ralph Lane, and either brought from Tobago in the West Indies, or Tobacco in Mexico, whence it derives its name.

In the southern counties Tobacco will vegetate in the open ground without artificial assistance, but in a cold district like this it is necessary to raise the plants in a little heat. One or two pans are sown, according to the number of plants required, about the middle of April, and by the second week in May the young seedlings are ready to prick-off into small 60-sized pots. They are then allowed to remain in heat until they become established, and are hardened off by degrees. By the time the first crop of early Potatoes from a warm border is taken up, which will be in the third week in June, the Tobacco plants will be strong and robust, and ready for transplanting. The ground is then forked over, and a quantity of manure applied, as Tobacco is a gross feeder, and a great exhauster of the soil. The plants are then placed about 2 feet apart, and if the weather happens to be dry, they are watered about every other day to give them a start.

By the middle of September the plants are 5 or 6 feet high, when the lower leaves are gathered, and either tied in small bundles, and suspended from the roof, or laid on shelves, in an early vinery to sweat and dry. We keep collecting a quantity of leaves at intervals till the plants have done growing, when all that are left are gathered, with a portion of the summit of the plant. As soon as the

first-gathered leaves are sufficiently dry they are stored away in large pots or boxes, packed quite solid, and put away in a dry place. Care must be taken not to store the leaves away too soon while they are surcharged with moisture, otherwise they will decay, and lose their peculiar principle. When the Tobacco is required for use, we cut it into chaff-like shreds with a sharp knife. If a large quantity were required a chaff-cutting machine might with advantage be employed. The produce of about seventy plants supplies all wants throughout the year.

The plan adopted for fumigating is very simple, and what some of your fast-going readers might say rather old-fashioned; it is the system which I learned in my early days, it answers very well, and until I discover a better I shall adhere to it, though it certainly is not the most agreeable. An eight-inch pot is employed; near the bottom is made a hole large enough to receive the nozzle of the bellows, a few red hot cinders are put in the bottom of the pot, and over the cinders a good quantity of Tobacco. The pot is then carried into the house which is to be fumigated, and air is gently blown by the bellows through the hole in the bottom. Care is taken to keep the Tobacco equally distributed over the cinders, to prevent the Tobacco-dust escaping from the pot. A few minutes will suffice to charge the structure with smoke so as to destroy insect life. I have never discovered any injury to the plants arising from this simple method, except on one occasion. Some shrubby *Calceolaria* plants had been taken up from the borders in the autumn to supply a few cuttings in the spring. The house in which they were kept was rather too warm for them, and the atmosphere was charged with a superabundance of humidity; the young foliage being, as might be expected, very tender, the first sunny day after the house was smoked some of the young leaves turned rather brown, but not so much so as to permanently injure the plants. Some place a little moss over the Tobacco in the pot, this is good plan when there is any danger of the cinders being too hot.

When the young shoots in the orchard-house become infested with the green aphid, which rarely occurs, we put a handful or two of Tobacco in a vessel, and pour over it a quantity of boiling water: the young shoots are dipped in the liquor when cold, and it is quite effectual in destroying the insects. This I consider a simple and effectual way of destroying insect life, and not to be despised because of its simplicity. It is worthy of the attention of amateur cultivators of plants, that the Tobacco in its growing state is rather ornamental than otherwise.

While on the subject of Tobacco, I would caution my younger brethren of the spade against the inordinate use of this poisonous narcotic. The habitual use of tobacco, like many other stimulants to which man becomes a slave, may appear for a time harmless, and is thought under certain circumstances advantageous to the human system. The essential oil of tobacco acts directly on the brain and nervous system, and applied to a wound has been said by good authorities to prove as fatal as the bite of a viper. The oil, given to pigeons, has been known to cause vomiting and death. For a time the use of tobacco might be resorted

to without any apparent evil, after its first stupefying effects are overcome; but its inordinate use is followed by disease of the liver, nervousness, congestion of the brain, paralysis, loss of tone of the digestive organs, and disease in various forms. It may for a time soothe the excited nervous system, but only to render it more irritable and feeble afterwards. A person who smokes much may generally be distinguished by a pallid countenance, defective breathing, defective action of the heart, impaired energy, and loss of sight. In thousands of cases these evils follow an injudicious use of tobacco.—QUINTIN READ, *Fiddulph.*

THE LATE SNOWSTORM AND ICE-KEEPING.

I AM glad that Mr. Fish has directed attention, at page 109, to the storing and keeping of ice; while in the same Number Mr. Perkins suggested the use of machinery to crush it before putting it into the ice-house; and although at present (February 7th), there seems to be but little chance of any of these plans being brought into practice this season, discussion may elicit useful information as to the best mode of keeping ice.

Those who were successful in securing a quantity of ice at the time of the snow-storm in January, may consider themselves fortunate, for I can assure Mr. Fish that he was not alone in being unable to obtain any. The storm here was more remarkable for the depth of rain and snow than for the intensity of the frost, so that there was scarcely any ice. The days preceding the snow-storm were fine and even mild, the 9th and 10th of January dry, without frost, and with much less wind than before, but the falling barometer indicated that something was in store of which the heavens gave no token, so far as most people could discern. For myself, I confess to not being gifted as a weather prophet, but another class of beings were evidently better judges. The birds, which for several days prior to the 10th had been singing with all the melody of an April morning, scarcely gave out a note on that day, although the air was clear and the thermometer about 43°; but there was very little indication of frost, and I believe it was not until the snow had fallen in large quantities that the thermometer fell to 32°, and subsequently to 30°. The snow was preceded by a very heavy fall of rain, commencing soon after midnight, and at daylight sufficient snow had fallen to hide the ground, a thin film of snowy water covering the surface of small pools. The snow, drifting with a north wind, kept falling throughout the day, so that by the night of the 11th some roads were impassable. A sharp frost set in after the snow ceased, but the temperature evidently fluctuated very much, for although the thermometer indicated as low as 18°, the ice on exposed pools was only half an inch thick. The 12th was mostly fair, but the thermometer seemed to alternate between a thaw and frost, and at night there was a clear sharp frost. This, however, had not been continuously severe, for the ice on the following morning was barely an inch thick, and that only in particular places, and a thaw setting in ice could not have been housed in any quantity without being much mixed up with dirt. Rain falling early in the forenoon and continuing all day rendered ice-collecting unadvisable; for it would not only have exposed men and horses to the inelimity of the weather, but the ice secured would have received large accessions of mud, which in the best of times finds its way into the ice-house in greater quantities than is desirable, and I have no doubt hastens the decay of the ice.

The amount of rain and snow which fell on the 11th exceeded the amount on any single day in 1865, being 1.35 inch. The frost, however, of the two succeeding nights providentially delayed the melting of the snow, otherwise some disastrous floods would have occurred. As it was, the river Medway was higher than it had been for upwards of twenty years, but the rain water being mostly carried off before the snow melted, the flood was prolonged rather than increased, and the rainfall of the 13th added to the supply. Such was the snow-storm, or rather the wintry period, of the middle of January in Kent, for both before that time and since, we may be said to have experienced a long, wet, and dull autumn, there never being sufficient frost to kill bedding Geraniums, &c. One or two beds of the former, fully exposed, looked remarkably fresh up to the time of the snow-storm; till then the plants had not been in the least injured by the frost, and were absolutely in a growing state. They were, however, killed by the frost and snow, and have since been removed.

The above meteorological notes not having much connection with ice-keeping, are here only given with a view to show the

impossibility of obtaining in quantity ice of a kind that is likely to keep, as it rarely happens that it can be taken direct from the pond and put into the ice-well in a clean state; and its contact with the ground during a thaw results in more or less mud becoming attached to it, and although the ice wastes fast enough, the dirt all remains. Even when the greatest of care is taken, and the ice and the weather are all that can be desired, a certain quantity of mud always finds its way into the ice-house, and in summer the upper surface of the ice will be found covered with mud, and this evil is still greater when the ice has been secured in a dirty condition. Weeds in the pond from which the ice is taken, as well as tree leaves, sticks, and other rubbish, although they form but a small item in the sum total at the time of filling, all help to augment the casing of dirt and to create wonder among the inexperienced how such matters came there. The keeping of ice, however, depends on so many circumstances combined, that it is no wonder that there is so much difference of opinion as to the proper mode of securing this luxury, and as it contains within itself some of the causes of its decay, a glance at these will enable us to judge with more accuracy the means likely to arrest that decay.

It cannot have escaped the notice of the most careless observer how much lighter ice is than water, taken bulk for bulk. I am not prepared to say how much lighter it really is, but believe it must be nearly 20 per cent., and as pure water weighs 624 lbs. to the cubic foot, I will suppose that ice weighs about 50 lbs. Now, if a cubic foot of ice be deposited in a place prepared for its reception, it contains within itself about 300 cubic inches of air, and as it is impossible in practice to obtain such blocks of solid ice, breaking such as there are, and their storage in a rough state, must increase the quantity of air contained in the mass. If that air could always be kept at a temperature below 32°, no wasting would take place; but as this cannot be done, the question is how to displace as much of that air as possible, and render the lump as dense and solid as it can be made. To effect this object is by no means easy, for the very process of freezing is accompanied by an expansion of the water that is congealed, and a large percentage of air is included in the ice. I believe that ice of unusual thickness—say 5 or 6 inches or more, is more porous than that which is thinner, clear ice about half an inch thick, or thereabouts, being in my opinion the most dense; but the benefits of ice of this thickness are more than counterbalanced by the difficulties in obtaining it and other attendant inconveniences. It has not often been tested against ice of greater thickness, neither is it likely to be so, for excepting in cases of emergency, or to serve a temporary purpose, it is usually left to become thicker. It is certain, however, that ice about an inch thick is more solid than that 4 or 5 inches or more in thickness, especially if changes in the temperature take place previous to its being secured. Ice of the latter thickness, however, breaks up better, so that when it is to be pounded as advised by Mr. Perkins, it is more convenient than thinner ice; but the propriety of pounding it very fine has been questioned by many, and as there are evidently objections to doing so, let us see what these really are.

In the first place, it will, I think, be admitted, that the best way to ensure the good keeping of ice, is to render the mass as dense as possible. Will merely pounding it do this? In years gone by it was customary to break coals up smaller in order that they might measure out more. Now, if ice does this, the object is defeated; it is true, the pounded ice is intended to be rammed together again, but unless the weather be very frosty at the time, the pieces when so broken will be liable to melt and waste before they are united again, and I am far from certain whether under any circumstances they can be made to form so dense a mass as before. I would, on the whole, prefer a portion of the ice to be broken somewhat like road metal, and some much finer, so that in the amalgamation, all the cavities that would have been left if the mass had been merely filled with rough large lumps thrown together, may be the better filled by the smaller pieces. This is the mode which we generally adopt here, and I believe it is that followed at most places. It has the recommendation of convenience, and is more quickly carried out than if the whole of the ice were broken small; and as the filling of an ice-house is a work that must be performed in one or two days, it is better to complete it in the time and way specified, rather than only half do so in another manner. As the quantity has much to do with the ice-keeping long, it is better in all cases to fill the house, well, or whatever place it is stowed in.

Storing ice has for many years been a subject as to which

considerable diversity of opinion has existed. Some of the early writers in Loudon's "Gardener's Magazine," recommended water to be added to the pounded ice, as the ice-well became filled; and some went so far as to say that hot water was better than cold, and this opinion is shared by some at the present day; but I never could perceive that hot water when employed for such a purpose had any merit beyond novelty. Generally speaking, the temperature of an ice-house when the men are at work in it, is not low enough to freeze cold water quickly, and I think anything likely to increase the heat of the place must be hurtful rather than otherwise. Salt has been also applied, and at one time had many advocates, but having a great affinity for moisture it interfered with the sound keeping of the mass, and its use has been generally abandoned, although it is employed in the application of the rough ice to confectionary, &c. Indeed, all artificial additions, so far as I am aware, fail to prolong the time during which ice may be kept.

Although there may be a difference between the melting powers of a dry atmosphere and of a moist one, there can be no question that warmth causes ice to melt, and the temperature of an ice-well in summer, when its contents have disappeared, is more likely to be 35° than below it. The wasting of the ice is slow or rapid according to the temperature; though I do not assert that humidity has nothing to do with the ice liquefying, still the hygrometer is seldom introduced into the ice-house, and I am more disposed to attribute the wasting of the ice to warmth than to moisture. It is idle to talk of keeping an ice-house dry, keep it as cold as you can, and it will not suffer from damp—that is, if the thermometer can be kept low enough, but this being impossible, the next best means is to expose the ice as little as may be to the action of the air. This object is usually sought to be effected by covering the ice with straw, so as to prevent as far as possible the access of air; but any other non-conducting substance would do as well as straw. I am not sure that sawdust would not be better, but it is not so easily applied, and its removal in order to take out the ice when wanted is more inconvenient. Surrounding the ice with a non-conducting substance, so as to keep it from contact with anything warmer than itself, is almost all that can be done towards keeping it. Usually, when an ice-well is filled, the ice begins to melt or waste at the sides and top, and very possibly at the bottom also, leaving a cavity between the mass and the wall of the building; this cavity increases in size as the season advances, and towards the end all that is left is a lump of ice of greater or less size in the middle. To cover this lump with straw or sawdust is not a difficult matter: in fact, it is usually covered as soon as it has receded sufficiently far from the roof and outer walls to allow of this being done.

The difference in the keeping qualities of ice-wells is due to local causes; but most generally those wells keep ice best which are dug in dry places, and the soil surrounding the casing of the ice-well being cooled down to about 32°, it receives warmth very slowly from the almost non-conducting medium which lies next to it. When, on the other hand, water abounds in a soil it becomes a never-ceasing source of heating. An example of this occurred in an ice-house which was once pointed out to me. The well was sunk in a wet gravel; but means were adopted to drain all water away from the bottom, and it was thought by well cementing the brickwork forming the lining of the well, so as to exclude the spring water, and carrying off the latter by a drain at the bottom, all was done that was necessary. The result proved that such was not the case. The well, acting as a drain to all adjoining springs, these flowed in its direction, and as spring water is usually 15°, or more, higher than melting ice, the brickwork might be said to have been warmed externally by water flowing continually towards it and trickling down its sides. To say that the ice-well was heated with hot water was not far from the truth, seeing that that water was much warmer than the substance to which it gave warmth. The result was that the ice kept very badly. Although no water found its way through the brickwork, or collected in any quantity at the bottom, yet that trickling down the outside and discharged by a proper drain, was equal to about two hundred gallons per hour.

Mr. Fish has made some useful suggestions about the formation of a box or safe for ice for household purposes; but I fear that the demand for cork for other purposes renders its use unlikely in many cases. A very good box may be made of ordinary deal, lined with zinc or zinc plates, having a cavity of about an inch between the zinc and the outer deal, to be filled with pounded charcoal. This non-conducting substance is per-

haps as good as anything that I know; but of course the close-fitting of the lid and other circumstances determine to a great extent the good-keeping or otherwise of the contents. Such an apparatus has been in use for some years; but, as Mr. Fish justly observes, it is the frequent opening of the case and disturbing the ice inside that occasion the waste, and it is difficult to prevent this, although the ingenious contrivance recommended by Mr. Fish to obtain cool water without doing so deserves notice.

As the subject of ice-stacks was discussed in this Journal some years ago, it is unnecessary to refer to that mode of preserving a supply now, and the few places in which it has succeeded, as well as the expense of covering the stacks with straw or some substance of a similar nature, renders it more expensive than storing ice away in a well or other depository of a permanent character. At the same time I am not certain but that a building more above the surface than under it may not answer as well as the latter; but these are not yet sufficiently numerous to be put in competition with the ordinary form of ice-wells, and the cases in which they do either remarkably well or the contrary may be owing to some local cause, so that it is difficult in the present state of the question to pronounce a decided opinion.—J. ROBSON.

ROSES.

Your correspondent "P.," at page 86, appears a little surprised at the character I have given King's Acre. If he will look back into Nos. 179, 185, 188, 192, and 226, he will find that I am not the only one who has formed a favourable opinion of that Rose. I had three blooms of it, one of which was particularly fine, indeed I had no other variety at the time that could bear comparison with it, except, perhaps, Gloire de Dijon and Souvenir de la Malmaison, but, then, I never had the former in greater perfection either here or anywhere else. "P." says that from one plant he had several blooms; now, may this not in a great measure account for the disappointment? I am strongly of opinion, indeed I feel convinced, that if I had allowed all the buds that made their appearance on my small plant to have expanded, I should not have had a bloom worth looking at. I never allow a plant to have more than three blooms the first season after planting, very frequently only one, and sometimes none at all, according to the size and condition of the plant. Whether this is a proper mode of treatment under all circumstances I do not presume to say, for I am but a very humble authority on Rose culture; but I certainly do think that in a season so extraordinarily hot and dry as the last it was rather too much to expect both quantity and quality, more especially if his plant is, like mine, on the briar, and if he had not a sufficiency of water, which was a general complaint throughout the country. I am fortunate enough to have a river in front of my house, within 5 yards of my garden; I consequently had an unlimited supply, which I stood much in need of.

I may here mention that I put in at the same time with King's Acre a strong plant of Prince Léon, and the blooms it produced were quite open in the centre, indeed any one not knowing the variety would have pronounced it worthless. I had also one or two others—and strong healthy-looking plants they were—that never showed a leaf until the middle of June, although they had every attention paid them. King's Acre was the worst-looking plant of the lot, at least in regard to root, for it was very bare, but it did better than any of them. I am not sure that I know exactly the cause of all this, but I think it is owing in a great measure to change of soil and situation, and to the dry season which followed. One fact, however, I beg to state—viz., that when Roses are received from a nursery, unless they are planted in soil as good as that from which they have been removed, and in situations equally favourable, they cannot be expected to establish themselves thoroughly the first season; they ought in fairness to have another year's grace allowed them before being condemned.

"P." has left us in the dark as to the locality in which his Roses are grown, but from his letter we may reasonably suppose his residence to be somewhere in the south of England; if so, I must remind him that I am in the heart of the highlands, and anything I have written on the Rose has reference solely to the properties of the varieties as regards their suitability for northern situations. I have grown Roses and seen them grown in various parts of England, both north and south—from Dorset to Durham I may say—and I com-

menced their cultivation here with the view of finding out what varieties were best adapted to the climate; I have, therefore, recommended such only as have done well with me. What I have said of King's Acre I would have no hesitation in repeating. As regards its merits in comparison with Jules Margottin, I have to state that I was thinking of it at the time I wrote more particularly as a hedder. Jules is a fine Rose for this purpose we all know, but King's Acre, equally robust, appears to be more compact in habit, and is evidently a profuse bloomer; the colour, if I may judge from his letter, is not quite so pleasing to the eye of "P." This is merely a matter of taste; in my opinion it is equally good, and certainly a greater novelty. I have not seen Jules Margottin so fine here as in the south, but neither here nor elsewhere have I seen a bloom of it superior to the one I had of King's Acre; but time will settle the matter, next July we shall be in a better position to discuss their respective merits.

Referring to another part of "P.'s" letter, I have to inform him that Gloire de Santenay opened beautifully with me; I had only two blooms of it, as I had but a single plant, but they were very fine. This and François Lacharme, should their constitutions prove sufficiently strong, will, I think, be fit to rank with the six best crimson Roses for this part of the country. I would like, however, to have them another season before speaking positively in regard to them. Their flowers are quite globular when expanded.

General Washington has in one or two instances opened well here, but its buds are very apt to split, more especially the first crop. I therefore intend pruning late this season by way of experiment. Duc de Rohan and Maurice Bernardin have not as yet opened so well as I could wish, but I have not lost hope of either, more particularly the latter. I shall not feel greatly surprised to see them both in fine bloom this next season.

Prince Camille de Rohan is well worthy of the character "P." has given it, but I am beginning to fear that it is not exactly suited to this locality, which I much regret, for no dark Rose stands higher in my estimation. That it will ever attain the position he has assigned it I very much doubt; I am rather inclined to think that with King's Acre he will sooner be in possession of a flower worthy of being classed *Al* than I shall with Prince Camille de Rohan.—*Loch Ness.*

THE CALVILLE BLANCHE APPLE.

MANY years ago I used to hear, when travelling in France, the merits of this variety highly extolled by the French cooks and housewives. Like most of us English, I felt that French Apples were not to be compared to ours, and I often told them so. It was of no use; they always would persist that no Apple in the world could equal their Calville Blanche when cooked. It is only within these few years that I have been compelled to think as they do; and I fully believe that when this sort is grown on trees well cultivated in a warm climate—not on orchard trees—it is the finest of all Apples for the kitchen. In the south of England, in warm favourable soils, it may be cultivated in gardens; but it should be grafted on the English paradise stock. In cool climates it requires either the orchard-house or a wall with a warm aspect to bring out its fine quality. At Trentham it is, or used to be, largely grown on trees in pots under glass, and warmly patronised by the French *chef*.

To enjoy its fine flavour it should be baked. There are two modes of doing this.

1st. Peel the Apples, cut them in quarters, place them in a closed jar, sprinkle a very small quantity of sugar over them, and bake them in a slow oven till done. They give out plenty of juice, and are most delicious.

2nd. Take a small piece the size of a sixpence out of the crown, fill the cavity with sugar, cut off the stalk, and place the Apples stalk downwards on a tin plate, and bake in a slow oven till quite tender. They become a perfect sweetmeat, and are as superior to the Normandy Beefings as a Pine is to an Orleans Plum.—*T. R.*

LARGE STANDARD CAMELLIA.—In my garden facing the north is a Double White Camellia, more than 7 feet in height, and measuring 40 feet round. It is supposed to be sixty years old, or more. It is now covered with buds in clusters, and last week I gathered two nearly in full blossom. It has always been covered during the winter with matting; but we have

been advised to discontinue this, and merely to cover the roots with dead leaves, for when covered as before the roots became dry, causing the buds to drop off when bursting. It is now in perfect health and vigour, standing on a lawn, and promises well for the future.—*F. ELLMAN, Battle, Sussex.*

PLANTING VINES.

I HAVE read with satisfaction Mr. Thomson's interesting article upon the planting of Vines in your Number of January 30th, and as the subject is of considerable importance, I venture to ask if Mr. Thomson, or any other celebrated Grape-grower, has tried the following method which I noticed some years ago in the columns of a contemporary. I quote from memory.

A month or five weeks before the Vines are to be planted, a hotbed should be prepared as for Cucumbers or Melons. After the heat has sufficiently subsided, a few inches of soil should be spread over the bed, and the Vines turned out of their pots and placed upon it at a few inches apart, and the interstices filled up with suitable soil. I presume there would be no frame or covering over the Vine roots. After remaining upon the bed a fortnight or three weeks, the Vines should be carefully lifted and planted in the vinery, and watered with warm water, the border being previously warmed where practicable; and where no heat can be applied to the border, the Vines should not be planted till the beginning of May.—*INQUIRER.*

[We forwarded this inquiry to Mr. Thomson, and the following is his reply:—

"The method of planting Vines, detailed by "INQUIRER," will, doubtless, answer very well where the border is heated; but as it has never been adopted by me, I cannot, therefore, recommend it from experience. I have, however, a decided objection to removing Vines from a strong bottom heat to ordinary Vine-borders, or to stimulating their roots before planting.

"The mode of planting which I have always found the most satisfactory, is to leave the Vines, presuming that they are plants raised from eyes in the previous season, in a cool airy house till they burst their buds about a quarter of an inch. They are then turned out of their pots, shaken entirely free from the soil, and well rinsed in tepid water in order to free them from all inert soil. The roots are then dredged with fine sand, and in planting every rootlet is carefully spread out, covered with a little fine soil, and then watered with water at about 80°. The vinery is kept close and moist for a time, and the heat increased as the Vines progress. They make about a foot of growth from each bud rapidly, and then stand still for a little time till the roots come into action. I do not believe that it is natural for the Vine to make fresh roots till it has expanded foliage. I have at present some Vines in the pots in which they were grown last year, and they have no signs of fresh roots, while the tops are 8 inches long; and this I have noticed for years in succession.

"Sometimes I have cut the Vines down, allowed them to grow a foot or so, and then shaken them out and planted them, and in this way they go on nicely. I have tried several other ways, but these are the two I prefer.

"Perhaps the finest canes I have seen produced in a season's growth were struck from eyes early in spring, and planted in May; and with bottom heat, or even when the Vines can be planted inside, I would as soon adopt this practice as any that I know. I have planted spring-struck plants in June in outside borders, placed a hand-glass over the roots and kept it close for a time, and the Vines never retrograded in the least.

"In connection with young Vines, I may refer to an instance of Vines that I wanted to grow in 1865, for planting in pots this year. These, after they had grown about 18 inches, were potted into 16-inch pots and placed in a Muscat-house where the buds had just broken. Under unfortunate circumstances they were allowed to remain in the Muscat-house till the Vines closed over them, and so shaded them that in the high temperature they grew till they completely lost their growing energy, and were so drawn and weakly that at first sight I determined to throw them out. However, they were moved to another house where there was plenty of light, and were cut down to within an eye or two of the surface of the soil in the pot; they soon pushed the top bud of that same season's growth and grew away with amazing vigour. The result was, that I never saw such pot Vines before. They are from 9 to 10 feet long, and as thick as a man's finger.

"I am convinced that this cutting-down system of the same season's growth is a good one, and I mean to adopt it. The main bud that in ordinary circumstances would not burst till next year, must be made to push by removing all the laterals.—D. THOMSON."]

LUCUMA DELICIOSA.

In your Number for December 26th your correspondent "RADDII" asks if *Lucuma deliciosa* has fruited in this country, to which you say "There is no species known to botanists, we think, as *Lucuma deliciosa*. Our correspondent probably refers to *L. mammosa*, or Teated Mammee Sapota, &c." In walking through the gardens of James Bateman, Esq., at Knypersley, the other day, I saw in the old tropical fruit-house a plant about 5 feet high of *Lucuma deliciosa*. It is a native, I believe, of Peru, and was sent to Mr. Bateman from the continent. Mr. Bateman has just fitted up a large house for the growth of tropical fruits on the principle of "J. H.," and of which you will hear more anon.—Q. READ.

[We find no species so named in any botanical work.—EDS.]

NOTES ON CYCLAMENS.

ALL admirers of the Cyclamen tribe must feel much obliged to Mr. Wanklyn ("W. X. W."), for his interesting notes on Cyclamens, and their native habitats, &c., page 378 of the last, and page 23 of the present volume of THE JOURNAL OF HORTICULTURE. With respect to the species found by Mr. Wanklyn in the spring in Sicily, I have great doubts of its being *hederæfolium* (*neapolitanum* of Tenore), as that is essentially an autumn bloomer, and the flowers for the most part rise before the leaves make their appearance. I have very little doubt but it would prove to be *Cyclamen repandum* of "Flora Græca," and some other authorities, which is by no means confined to Greece, but is widely distributed over the south of Europe, Turkey, and probably Syria. I can speak to its being almost, if not quite as frequently met with as *hederæfolium* (*neapolitanum*) in middle and southern Italy, and they are often found growing together in the same locality. Its so rapidly coming into bloom, as Mr. Wanklyn notices, and also the period of the year, quite correspond with the habits of *C. repandum*. The flowers vary in the shade of colour; it does not generally rise to the surface of the soil, out of doors much before March; its growth is then very rapid, and it is quickly in bloom. *Hederæfolium* (*neapolitanum*) would by that time be rapidly going to rest. The large tuber observed by Mr. Wanklyn, at Solomon's Pool, near Jerusalem, would probably be *C. persicum*, that being a native of Palestine. I have some now in cultivation the tubers of which were brought direct from thence. Being at all times much interested in learning any facts relative to the habitats of any of the Cyclamen tribe, and not fond of guess work on subjects of this sort (of which the poor Cyclamen family have long had abundance), I would, provided Mr. Wanklyn will not consider me troublesome, and will kindly favour me with his address, either privately or through the Editors of this Journal, endeavour to clear up this point by sending him some flowers and leaves of the true Italian *C. repandum* when it is in bloom, probably about April or May.

Without entering on the general subject embraced in Mr. Abbey's papers on this family, I would just remark that he is rather hasty in stating (page 523), "there being no good white form of *C. europæum*." He may not have met with one, but I can testify to the reverse, having repeatedly, though rarely I admit, found good pure white ones amongst the Alps of Switzerland and Savoy, and still grow them. I certainly had not *C. europæum album* in view when I spoke of *C. odoratum* being with some identical with *C. europæum*, but rather the southern variety of that species recently figured as *C. europæum Peakeanum*, which, as your correspondent "S." (page 501) suggests, is certainly only the variety of *C. europæum* found in several localities "on the Italian slopes of the Alps." Its habits are precisely what he describes. Under shelter and with moderate warmth it is evergreen, and almost constantly in bloom, but under natural treatment has its period of rest the same as most other plants, and is benefited thereby. I have grown it ever since about 1843, and some years since I brought home a considerable quantity from its native habitats. During the many years I have been a collector of Cyclamens, I have received it under the names of *odoratum*, *fragrans*, *Clusii*,

æstivum, *littorale*, and some others. It is, therefore, by no means new, though a very desirable variety, and well worthy of more extensive cultivation than it, as well as some other varieties of *C. europæum*, have hitherto received. A tuber I have on rockwork in a hardy Fern-house, commenced blooming early last June, and continued until the end of January. Being without artificial warmth it will probably before a great while go to rest.—J. ATKINS, *Painswick*.

INCISIONS IN VINE ROOTS.

I OBSERVE that "A CONSTANT READER," in the Journal of February 6th, asks if his Vine, whose roots he has nicked as I did those at Wrotham Park, will bleed to death. The cases are, however, not parallel, for those that I nicked were cut off from supplies of sap, torn as they were out of the ground altogether. In his case I think it extremely probable that they will bleed, but not so as to cause the death of his Vine. In common with every one who has taken up a tree the roots of which had previously been cut-in, and fresh soil put to them, I observed that they made fine tufts of new roots; and to make the long bare Vine roots that I had raised out of the old effete soil do this along their whole length, as well as at their very extremities, I cut the notches in question, which were about a quarter through the root, and on alternate sides throughout the length of the roots. The effect was just what I have stated in the work he refers to.

Your correspondent need be under no apprehension that his Vine will die. If it bleeds severely, its doing so may retard the bursting of the buds, and the growth for a time may be weaker than usual; but if he lay fresh soil round the wounds, into this, during the summer, the upper lips of the incisions will most certainly send young roots, and the Vine instead of being killed will ultimately be benefited.—Wm. THOMSON.

THE COIL SYSTEM OF PLANTING GRAPE VINES.

I AM aware that no one should think lightly of anything from the pens of two such horticulturists as Mr. Rivers and Mr. Thomson; but having had a fair share of experience during the last fifteen years in Vine planting, I must say that I have great objections to the layering system.

In the spring of 1850 I assisted in planting a new vinery; but not an inch more of the stem was covered than could be avoided, and the Vines have done well from that time to this. Again in 1855, at another place, I assisted in making Vine-borders and planting them, also in layering some Muscat and Royal Muscadine Vines, which never grew satisfactorily, and which, at the end of two years, were taken out and planted again, while the Vines not layered did remarkably well, and were the admiration of some of our most successful Grape-growers.

In my next situation I had the care of some very fine vineries, which had been the means of causing some hot discussions twice or thrice in ten years; but the gardener leaving soon afterwards, his successor obtained permission to take up the Vines in what had been the early-house. They were taken up as carefully as possible, for it was intended to replant some of them, and the border was re-made on what was by some considered the best plan, and there was a chamber underneath, heated by four four-inch pipes. By the way, this plan I never could approve of, and ventured to say so at the time. Well, seven of the old Vines were replanted, the rods being layered in the border and covered for 6 or 8 feet; the rest were young Vines, obtained from Mr. Rivers's nursery, and were also layered. The house being set to work, the young Vines did better than the old; but not one reached the top of the house, and the canes were very little thicker than a writing pen. The old Vines had a hard struggle for existence, and did not grow more than 3 feet; in the following spring they started somewhat better. Having obtained another situation, I left; but feeling very much interested in these Vines, I made in the autumn a long journey to see them, and found them in a sorry plight. I then remarked to the man who had been with me, that the Vines would not be long before they would have to be removed, and so it proved; for after another year's trial they were taken out and the house replanted, but not on the layering system. I understand they are now satisfactory.

I have had four vineries built here and planted, and if it

would be of any interest to the readers of *THE JOURNAL OF HORTICULTURE*, I would give a plan of the range, as the border is above the level of the surrounding ground. So far I must agree with Mr. Thomson; but with respect to trees I have not seen the evil consequences of burying the stems, on the contrary, it has had a very beneficial effect. As an instance, I may state that there is an avenue at this place, planted about ten years ago, and some alterations being afterwards made, the stems of some of the trees were covered to the height of 4 feet, and now these trees are by far the best, so much so, that the owners had several trees banked-up, and in every case with success. Mr. May, of the Hope Nursery, Bedale, Yorkshire, also gave two or three years ago an account of some Apple trees so covered, and of the good effects which resulted; not that I would advise such a plan with fruit trees; but I think that it would be beneficial to forest trees in some soils and situations. There are few rules, however, without exceptions. —T. T.

ROYAL HORTICULTURAL SOCIETY.

ANNUAL GENERAL MEETING.

This was held on Tuesday the 13th inst., the Duke of Buccleuch President, being in the chair. The minutes of the last annual meeting having been read and confirmed, Mr. Fortune and Mr. Booth were nominated scrutineers of the ballot, which was proceeded with whilst the report of the Council was being read by Mr. W. Wilson Saunders, the Secretary.

The report states that the number of Fellows increases, and the subscriptions still more; regrets the deaths which have occurred; states that the exhibitions were successful; that the income of the Society has increased and its expenditure decreased. The admissions were—1863, 115,521; 1864, 185,692; 1865, 231,519. The Fruit and Floral Meetings have been successful and popular; the produce of Chiswick not so successful as expected, owing to the failure of the Strawberry crop and other causes. The number of packets of cuttings received by members has been 1530, of plants 6263, of packets of flower and vegetable seeds 376,884. The appointment of the Rev. M. J. Berkeley as botanical adviser is then referred to; also that he, Dr. Hogg, and Mr. Moore are to supervise the operations and conduct the experiments at Chiswick, the latter two gentlemen also examining candidates for the Society's certificates; and the report concludes with notices of the intended proceedings of the current year.

The result of the ballot was then reported to be that the Duke of Buccleuch was elected President; G. F. Wilson, Esq., F.R.S., Treasurer; and Lieut.-Col. Scott, R.E., Secretary, for the ensuing year; and that Viscount Sandon, the Right Hon. W. Cowper, M.P., and Sigismund Rucker, Esq., were elected new members of Council in the room of J. J. Blandy, Esq., John Kell, Esq., M.P., and Major Trevor Clarke, the three members retiring according to the charter. G. F. Wilson, Esq., Lieut.-Col. Scott, and Henry Cole, Esq., C.B., were elected Expenses Committeemen; and J. Nicholson, Jonathan Clarke, and R. Hudson, Esqrs., Auditors.

Sir A. SCOTT WAUGH, in moving the adoption of the report, said that it had given him the greatest satisfaction. An institution like the Society ought to be progressive in its nature, and he was much pleased at the improvements which had been effected in the gardens, as well as at the extension of the privileges of the members. These, he felt sure, would concur in the regret expressed in the report at the loss in one year of three men so eminent in the horticultural world as Dr. Lindley, Sir Joseph Paxton, and Sir William Hooker. He observed with satisfaction paragraph 16 of the report, in which the Council stated their intention to carry out experiments, which would no doubt serve to advance the science of horticulture.

Major BLENKINS, in seconding the motion, expressed his entire satisfaction at the prosperity of the Society.

Mr. NEVILLE GRENVILLE did not quite understand paragraph 20 of the report, having reference to the admission of the Fellows of the Society to the International Exhibition of May next. Was he to understand that there ever would be an exhibition in the grounds from which the Fellows would be excluded?

Mr. H. COLE said that the main part of the exhibition would not be held in the Society's gardens, but on the ground on which the Exhibition of 1862 stood; but still, if it were to be held in the Society's grounds, the Fellows would enjoy greater advantages than if no such exhibition were to be held at all. Of course, the promoters of this great national exhibition knew that it had to be paid for, and they had to look to a way of recouping their adventure. They said, "We shall be glad of all the accommodation which the Society can give us, and for that we will give you £300, and, further, we will give the Fellows the first public entry to this great exhibition." That took place on the second day; on the first the admission was limited to those who had subscribed and guaranteed the money to pay for the exhibition, which would be on an enormous scale. Thus the Society, besides adding £300 to its funds, secured for its Fellows a free admission to a great public exhibition; and he trusted that the Fellows were satisfied that the Council had done what was best for their interests.

Mr. GRENVILLE expressed his satisfaction at Mr. Cole's explanation.

but hoped that the course adopted would not be construed into a precedent for holding exhibitions by which the Fellows might be at any time debarred from going into their own grounds.

The CHAIRMAN explained that the Fellows were not debarred from going into the gardens, but would have at all times free access to all parts of the exhibition within their own grounds, except when the plants and fruits were being arranged and judged.

The motion for the adoption of the report having been put to the meeting and unanimously agreed to, a letter was read in which Messrs. Lee & Parker reported the valuation of the Society's stock at Kensington to be £3783 11s. 6d., and at Chiswick, £2202 15s., or £5986 6s. 6d. in all.

A FELLOW asked the Council to reconsider their decision as to the admission of the public at 3d. on five days a-week during the autumnal months, and inquired whether the experiment had proved successful.

Another FELLOW asked how many persons had availed themselves of the privilege, and whether there were any countervailing disadvantages.

Lord H. GODDON LENNOX, M.P., answered that the result had been a great financial success; and so far from any damage having been done to the gardens he was happy to say that there was none whatever.

Mr. COLE remarked that the cheap admissions only took place in August and September, when London might be said to be out of town.

Colonel CHALLONER observed, that as a very old member he thought the threepenny admissions lowered the character of the Society, and he knew many ladies felt disgusted, after having paid their £40, or four guineas per annum, at the gardens being thrown open at such a charge. They would rather that certain days should be free.

Mr. EDGAR BOWRING wished to say a few words on the threepenny admissions from a Commissioner's point of view. The Commissioners gave up the land to the Society that was the produce, in 1851, of the shillings of the million, and the Commissioners felt that it was property held by them in trust for the public. He might observe that the Society had acquired twenty-two acres of land without any payment in what was now becoming a densely-peopled neighbourhood, and which was worth from one-quarter to one-half a million sterling. In addition, the Commissioners had spent between £60,000, and £70,000, themselves, and the total rent paid last year was £185, and the Fellows would recollect that in the previous year no rent was paid at all, so that it was quite clear that the Society held this large estate for nothing. It was then a question whether the general public should not have some privilege in respect of these gardens. He did not know what was the best shape that privilege should take, but he agreed with Colonel Challoner that the better plan would be to throw open the gardens at certain times free.

Sir A. WAUGH considered that the gardens were not to be looked upon as being wholly for the selfish enjoyment of the Fellows and their friends, but should be regarded in a scientific point of view for the benefit of the public.

Lord H. LENNOX said the subject had been under the consideration of the Council, and they felt that the gardens might be made available for the use of artisans when the Fellows, for the most part, were out of town. The Council were anxious to hear whether they had better continue the present system of threepenny admissions, or whether the gardens should be open in the autumn on Mondays. The latter course, he assured the meeting, might be adopted with perfect confidence that there would be no damage done.

The CHAIRMAN said that it was the object of the Council to elicit from the meeting whether the public should be admitted free on one day, or on five days at the charge of 3d.

On this subject some discussion then took place, in which Colonel Challoner, Lord H. LENNOX, Mr. Cole, Mr. Bunney, and Mr. Sidney Smith took part, and a motion was made to admit the public free on Mondays during the months of August and September; but it was withdrawn, and ultimately it was resolved that the subject should be left to be dealt with by the Council.

Dr. RICHARDSON then put some questions relative to the privileges of two-guinea Fellows, complained that these privileges were not made sufficiently intelligible, and, finally, that whereas four-guinea members had forty admission orders and two transferable tickets, the two-guinea members had only twenty such orders and one non-transferable ticket. Therefore, he argued that the two-guinea members had not half the privileges of those paying the higher rate of subscription.

Mr. COLE said that Dr. Richardson appeared to think that the two-guinea members should have all the privileges of the four-guinea ones. He himself would like to make two guineas do the work of four as well as any one; but it was necessary that there should be some inducement held out for members to pay the higher rate of subscription, and that had not been done by taking away any privileges from the two-guinea subscribers.

Dr. RICHARDSON repudiated any idea of wishing the two-guinea subscribers to usurp the privileges of those paying four; all he wanted was that members' privileges should in each case be distinctly understood.

Mr. SYDNEY SMITH thought there ought to be a series of lectures on botany and horticulture in addition to the Tuesday meetings, than which nothing, however, could be more delightful; and he imagined this could be done without much, if any, additional expense, as there were plenty of gentlemen who would give lectures free.

The CHAIRMAN assured the meeting that if the Council found any-

thing obscure in the summary of the privileges of the Fellows it should be made plain; and then, in virtue of his office as President, nominated Earl Grosvenor, M.P., Lord H. Lennox, M.P., W. W. Saunders, Esq., and J. Bateman, Esq., Vice-Presidents for the ensuing year.

A vote of thanks was then unanimously passed, on the motion of Mr. Bowring, to his Grace the Chairman and the rest of the Council.

At the Meeting on Saturday, the 17th inst., there was a much larger display of flowers, fruits, and vegetables than has been exhibited on any former occasion. It is quite evident that these meetings are acquiring a large amount of favour, and go on improving as the season advances.

Messrs. Cutbush & Son, of Highgate, had a beautiful show of forced flowers, consisting of the *Convallaria* exhibited last week, interspersed with *Magnolia Soulangiana*, *Berberis japonica*, *Azalea*, *Rhododendrons*, *Dielytra*, *Prunus sinensis*, &c. This received the first prize.

Mr. E. Robinson, gardener to R. Benyon, Esq., Reading, sent a very meritorious exhibition, consisting of eleven beautifully-grown plants in pots of Otaheite Oranges, laden with fruit. Although the largest of them was not 18 inches high, some of the plants bore as many as fourteen large full-sized Oranges, and the whole formed a very ornamental group. We cannot conceive anything better adapted to the ornament of the dinner table than such plants as these of Mr. Robinson's—110 fruit in all. All honour to Mr. Robinson. An extra first prize was awarded to them.

Mrs. B. Heeke, Munster Road, Fulham, sent four pots of well-grown *Cyclamens*—a mass of bloom, and very well grown, and to which a first-class certificate was awarded.

Mr. Bartlett, of Hammersmith, again exhibited forced bulbs, to which a first-class certificate was awarded.

Messrs. Cutbush & Son sent a collection of forced Hyacinths, Tulips, and Polyanthus Narcissus, to which a second prize was awarded. They also exhibited a beautiful collection of twelve Hyacinths, which received a third prize; and a collection of *Crocus*, which was awarded a first-class certificate.

Mr. Young, gardener to Mrs. Barelay, Highgate, sent a collection of five *Dracenas*—*Cooperi*, *ferrea variegata*, *terminalis*, *marginata*, and *ferrea*, which received a first-class certificate.

Mr. Earley, gardener to Felix Pryor, Esq., sent a pot of the lovely little *Scilla bifolia*, and a good specimen in balloon shape of *Franciscea eximia*, which received a first-class certificate. He also exhibited an excellent collection of vegetables, which received the first prize.

Mr. H. Beasley, gardener to Mr. T. Wood, Twyford Abbey, Acton, received a second prize for a smaller collection; and Mr. Earley received a third prize for six dishes of Apples.

Messrs. Lucking received a first-class certificate for forced flowers.

TABLE DECORATIVE PLANTS.

As table plants are now, like crinoline, among the accepted by Fashion, though, unlike crinoline, they are ornamental and not inconvenient, it may not be out of place to say a few words in this Journal about some which experience has taught to be among the best.

FERNS come foremost. When I say Ferns, I allude to moderately large plants of the gold and silver varieties. For instance, nothing can present a more beautiful or graceful appearance on the dinner-table than a plant or plants of the *Gymnogramma peruviana* or *G. Wetenhalliana*, and amongst the golden varieties *Gymnogramma Laucheana*, *G. sulphurea*, and *G. chrysophylla*. I have seen these used extensively on the table of that great lover of horticulture, J. L. Naper, Esq., of Loughcrew, and as they are grown by Mr. Burns, Mr. Naper's gardener (who, by-the-by, is quite an enthusiast in growing Ferns), nothing can present a more rich and graceful appearance.

I have also seen Mr. Burns use *Marantas vittata*, *ornata*, *regalis*, *albo-lineata*, *zebrina*, and *Warszewiczii*, with very successful effect.

He also uses different varieties of *Dracena* with good effect on the side table—*Dracenas reflexa*, *ferrea*, *stricta*, and *terminalis*.

For the breakfast-table, in shallow low vases, *Eriocnema marmorea*, *Eranthemum rubrovenum*, and several others, which at some future time I may mention, have a good effect.—R. M.

(To be continued.)

BOTANY OF MIDDLESEX.—Dr. Henry Trimen and Mr. W. Thiselton Dyer are collecting materials for a Flora of the county of Middlesex, on the plan of the Cambridgeshire and Essex Floras. They will feel indebted to botanists who will

send them local lists, notes of localities, or any information connected with the subject; in the case of rare, critical, or doubtful species, the loan of specimens will be very acceptable. Dr. Trimen's address is 71, Guildford Street, Russell Square, London, W.C.; Mr. Thiselton Dyer's, Christ Church, Oxford.

HANUM FRUIT.

I HOPE that in the course of the summer we shall learn the botanical name of the fruit of which Mr. Wanklyn has given us (page 126) so interesting a description. If it were not premature and idle to give a guess, I should think it likely to be *Cucumis dudaim*, called also *Cucumis odoratissimus*, first cultivated in England A.D. 1705.—G. S.

[We think you are right in your surmise. Mr. Wanklyn's further description of the plant in a private letter very closely agrees with the description in Dillenius's "*Hortus Elthamensis*." Mr. Wanklyn also sent us a leaf which agrees with the engraving in Dillenius.]

OAK IN THE COAL FORMATION.

KNOWING the interest you and the readers of your valuable paper take in all sorts of natural curiosities, &c., I am led to send you a very brief account of a log of Oak taken out of a seam of smut or coal on Gresley Common, Derbyshire. The log is about 6 feet long and 18 inches in diameter, partially decayed through the middle, but otherwise perfectly sound, and the grain very beautiful, capable of taking a high polish, and very black in colour. A gentleman in the neighbourhood, who has for many years studied geology, and is considered an authority on such subjects, has seen it, also the place from whence dug. I quote some paragraphs from his letter, as giving a better description than I could. He says, "The fact is a very interesting one, much more so, indeed, than I expected to have found it." "The tree must, indeed, be one of the most ancient of Oaks, for it could only have reached the situation in which it was found by being floated in the water or frozen in the ice, by one of which agencies the clay drift was deposited. This puts back the date to that of the existence of the mammoth and other extinct animals," &c. "I should put your Oak back to a date long anterior to the deposit of the so-called bog Oak, found in low-lying swamps." "The discovery of the tree will, most probably, form the subject of a paper at the next meeting of the Midland Scientific Association," held on the 27th inst.

I shall be most happy to show the tree to any of the readers of "our Journal" who may think it worth a journey to the Pool Works, Gresley Common, near Burton-on-Trent.—HENRY D. EXSON.

PARADISE AND QUINCE STOCKS.

I SEE at page 124 of the Journal for February 13th a Mr. Pearson has been somewhat "astonished" at my recommending people to plant Apple trees on paradise stocks—*i. e.*, "Pomme Paradis." He goes on to tell us that he was "struck" with the pretty little trees he saw growing near Paris, and he ordered several thousands of the stock with which to astonish the people of Notts; but the "severe winter" killed more than half, and he burned the other half, or the summer did so for him—sad extremes of heat and cold they must have in his ilk.

I ask you, as coinciding judges, if you or he know anything about the severity of a Parisian winter as compared with one in Notts? I have known winters at Paris destroy trees of large diameter; and Laurels, *Laurustinus*, &c., are, or were when I was in Paris, rather sparse, as well as many other things that thrive in our blessed isle. I never saw a *Pommier Paradis* hurt by frost, and I ask French nurserymen. M. Leroy of Angers for example, whether they consider the said offending stock tender? I would also ask the nurserymen of Scotland what they have to say about it?—Messrs. Imrie, of Ayr; Messrs. Dickson & Turnbull, of Brechin, and others north of the Tay, who use the stock in question, I believe, largely.

I can say myself that in 1860-1861, I lost thousands of trees by frost, amongst them more than five hundred Kingston Black Apple; and, *apropos*, this is a physiological question as regards canker, not yet taken proper account of, but of this another time. Although I lost so many other kinds of Apples and Pears by frost, I do not think that one of my paradise

stocks was hurt, nor did the aphid and other insects follow. No mealy bug will live upon Apple trees in my nurseries, although I often receive them from other places. After the new comers have been planted a few months here the bug disappears; this is another physiological fact worth considering. Mr. Pearson is not so happily circumstanced, his soil favours aphid and kills paradise stocks.

Now, as to my recommending Pears on quince stocks to be planted over the junction of the graft and stock, I have not yet found that this is bad advice. With me no Pear has yet struck its own roots into the soil from above the junction, and I have upwards of six hundred sorts on quince stocks. My soil may not be more favourable to this than to the aphid, although one of the best soils in the country for rooting generally.

I also ask the Editors what proofs they have to justify their "We think you are right." Let us have the truth without fear or ambiguity.—JOHN SCOTT, *Merriot*.

[The question Mr. Pearson asked was relative to a scion on a quince stock emitting roots if the point of union be beneath the surface of the soil. We think, or rather should have said that we know, that it does so. Mr. Scott's soil must be very peculiar if roots are never emitted from the scion under such treatment. We have expressed no opinion about the paradise stocks.—EDS.]

STRAWBERRIES.

REMARKS ON THE CHOICE OF VARIETIES AND THEIR CULTIVATION.

THE Strawberry is one of our oldest British fruits, having been in cultivation in this country for more than four hundred years. In a poem of the fifteenth century, by John Lidgate, called "London Lyekpeny," we find the following effusion:—

"Then unto London I dyde me hie,
Of all the land it bearyeth the pryse;
'Gode pescode,' one began to cry—
'Strabery rype, and Cherrys in the ryse.'"

Although the Strawberry has been so long in cultivation, I suppose that it has made greater progress towards perfection in the last quarter of a century than during any other period of its history. Having given a considerable amount of attention to the cultivation of the Strawberry, I may be excused for venturing to narrate my experience after so many valuable papers have been written on the subject; but I consider a very important feature of THE JOURNAL OF HORTICULTURE is, that discussion and intercommunication are invited on all matters of interest to its readers.

It is now a little more than two years since I gave a detailed account of the way in which I successfully cultivated the Strawberry; but since then, having experimented with a number of varieties, and adopted different modes of cultivation, I have added a little more to my stock of Strawberry lore. Two years ago this winter I prepared a piece of ground for the purpose of growing some rather new sorts, as well as some older varieties of high repute, and testing their qualities. The ground was prepared by trenching about 2 feet deep, and putting plenty of manure at the bottom of the trench. As we did not intend planting before the following autumn, it lay rough and exposed to the action of the frost until spring, when it was planted with a crop of Early Handsworth Potatoes. These were off by the early part of July; and after the ground had been nicely dug and received another dressing of dung, it was in good condition for the Strawberry plants. These were carefully propagated during the summer, the first runners that could be obtained being pegged down in 48-sized pots filled with rich compost, and as soon as they were established they were severed from the parent plants and placed in their fruiting positions. I consider it most essential to success to have the plants established early, and with all due deference to the opinions of others, I would recommend autumn planting. During the last season, having had a good quantity of plants to prepare, I propagated one half by pegging down in pots, and the other half by pegging down in the beds; and after an impartial investigation of both systems, I feel rather inclined to prefer the latter, especially when plants intended to propagate from can be grown by themselves.

Some of the varieties grown in my experimental-bed did very well, others only moderately, and others, again, refused to throw up even a single scape. Prince of Wales refused to bloom, and, therefore, suffered excommunication. I anticipated testing the reported good qualities of La Constante, but

it did not produce a single truss of bloom; this I shall try one season more, and if with no better success I will throw it away. Prince Arthur produced a quantity of very small berries, but the flavour was exquisite. Sir Charles Napier fruited at the rate of one plant out of ten, and these not very satisfactorily. The much-praised Frogmore Late Pine has not yet gratified my palate with its insidious fruit. The plants were sickly and bloomed very sparingly, and what few fruits there were never came to perfection. The whole of the above, with the exception of La Constante and the Frogmore Late Pine, have been thrown away as being of no service. To these two I intend to give another year's trial, and if they do not succeed any better they must be rejected as worthless in this soil and situation. At Biddulph Grange, not half a mile from here, La Constante last summer did well, and was one of the best. Rivers's Eliza, Carolina Superba, Marguerite, and Sanspareil, did but very moderately. These remain on trial one year longer. Empress Eugénie and Eclipse in the same plantation did well. The latter is the best and most prolific variety which I have seen; the fruit from the first pickings measured 6 inches in circumference. The fruit from Empress Eugénie is large and handsome and of medium flavour, but with us this variety is not such a heavy cropper as Eclipse; the fruit is fully as large. Keens' Seedling, which has always been a favourite, has failed for the last two years. Dependence was always placed on it for the general crop, but it appeared worn out and has given place to better sorts. Our other four or five old varieties of sterling worth I dare not at present destroy. Black Prince is depended on for the general crop, but if Eclipse maintain its character, I purpose planting it largely next season. The Elton is still the best we have for a late crop in this neighbourhood, it continues in bearing until the second week in August; and Black Prince came in last summer by the 20th of June, thus prolonging the Strawberry season seven weeks. British Queen and Goliath did ample service, and well repaid the trouble in their careful cultivation. Fruit of Goliath measured between 8 and 9 inches in circumference.

The varieties which I have had the opportunity of testing, and which I find the most useful, are the Black Prince, Eclipse, Empress Eugénie, British Queen, Goliath, and Elton. I consider that half a dozen good sorts to be depended on are ample for places of moderate extent, and numerous varieties only tend to cause confusion and disappointment.

I will now offer a few remarks on the successful culture of the Strawberry. It is essentially necessary that the ground should be deeply trenched, and that plenty of dung should be placed at the bottom of the trench. The time preferred for this operation, when it can be made convenient, is winter. Sometimes it is desirable to replant immediately a piece of ground which has been previously occupied by Strawberries. When this is the case it is requisite to work in, during the process of trenching, a quantity of fresh soil. In trenching the ground of an old plantation last summer, it was found that the roots had penetrated to the depth of nearly 3 feet; hence, the importance of deeply stirring the ground and placing the manure at a good depth. The roots will naturally ramble away in search of food and moisture, and properly preparing the ground and affording a liberal supply of dung constitute the best safeguards against the ill effects of dry weather.

For mulching, or for keeping the fruit from being splashed with dirt, I have generally used straw or short grass; the latter I object to on account of its tendency to cause mouldiness and decay among the berries. Last summer I used clean fresh litter with a portion of the droppings shaken out. As soon as the bloom began to expand I cleared the plants of all runners not required for propagation, and the beds of weeds; a good thickness of litter was then carefully laid down all over the beds. This being done, and a good soaking of water (not a mere dribble), being given twice a-week, notwithstanding the tropical summer which we experienced, and the long-continued drought, I never saw Strawberries look better, and never witnessed heavier crops. I know that some ladies are rather fastidious about Strawberries lying on litter, and object to its use in consequence of its imparting a disagreeable flavour to the fruit; but in order to obviate this difficulty I had short sticks prepared and placed round the plants soon after the fruit had set, and two or three pieces of matting tied round each plant according to the length of the different scapes. This system may appear to entail a little extra trouble, and so it does, but the advantages secured are more than a compensation. I do not remember having seen it practised before,

nor even reading of it until Mr. Will's told us last August, in the pages of this Journal, how he successfully adopted the same plan at Oulton. A bed of the British Queen, or any of the large varieties, when tied up and approaching maturity presents a very charming appearance.

I need not enlarge on the treatment of the plants after the fruit has been gathered. Much has been said on this subject lately, and I would recommend all who are ambitious to excel in Strawberry culture to consult those articles. I will, however, add, that I do not allow useless runners to remain on the plants, and I consider it essential to keep the beds clean and free from weeds, as every sprig of grass or intruding weed is so much abstracted from the soil, and, consequently, from the food of the future crop. Further, I still adhere to my old practice of not destroying the foliage. I will not dispute that Strawberries may be grown where the dangerous system of cutting off the leaves is practised, but I have tried both ways and consider it the better policy to allow the leaves to remain.

Strawberries can only be had in perfection when they are gathered dry, for a very little rain will destroy their flavour. Being in its natural habitat a rock plant, those soils containing the greatest amount of rock in a decomposed state, or the most clay, have been found to produce the fruit of the finest flavour.—QUINTIN READ, *Biddulph*.

STRIKING ROSE CUTTINGS.

RAISING Roses on their own roots has been so often treated of in your Journal of late, that I have been surprised at never having there met with a plan suggested by Mr. Fish many years ago, in your "first series," and which I tried at the time, and sometimes lately, with much success. I mean inserting in April or May the soft stubby shoots of that spring, while from 1½ to 3 inches long. These when treated as there desired (a slight hotbed, glass cap, and shade), became strong and vigorous plants, which gave a few flowers that same autumn, and formed strong plants from 18 inches to 2 feet high, which bloomed well in the following June, and far surpassed any other cuttings of the same age. Indeed, I have usually found that cuttings require a long time before making vigorous trees. One peculiarity is, that Roses raised in the manner I have described generally send up two or three stems, which makes them desirable for pegging down.—ACNES.

[We have never tried the plan fairly without being successful. The chief secrets of success are a rather low temperature before the cuttings begin to callus, and more heat afterwards.]

NOTES ON THE SPECIES OF HELLEBORUS.

THE Hellebores are all robust hardy perennials, and comprise among them some of the gayest spring-flowering plants which we at present possess; for no set of hardy perennials are so attractive as the Hellebores in the earlier months of the year, they producing their flowers with impunity at that season when few others can brave the inclemency of the weather. The genus *Helleborus* belongs to the same natural order (*Ranunculaceæ*) as the Larkspur, Columbine, Monkshood, Marsh Marigold, Love-in-a-Mist, and the Winter Aconite. Its name *Helleborus* is derived, according to some writers, from "helien," to cause death, and "bora," food, on account of its poisonous qualities; but, according to Bergeret, it is derived from the river Eleborus, the Black Hellebore being found plentifully along its banks.

All the Hellebores grow freely in a rather moist and somewhat shady situation, and in a soil with which a little peat earth has been mixed.

In the cultivation of the different species of Hellebore, the principal error appears to consist in paying them too much attention, for they succeed to admiration in a retentive soil, rather shady and moist, and where they are allowed to remain undisturbed and unacquainted with the gardener's rake and hoe, for it is sufficient that the soil about them be kept clear of such weeds as grow taller than the plants themselves, and that they be completely free from the drip from trees.

The Hellebores are all easily increased by dividing the old plants when in a dormant state; or by seeds, which should be sown directly they are ripe.

HELLEBORUS ORIENTALIS, *Lamarck* (The true Black Hellebore).—Syn. *H. officinalis*, *Salisbury*; *H. olympicus ruber*, *of gardens*. This is the Black Hellebore of the ancients, formerly so cele-

brated as a medicine in mania, epilepsy, and dropsy. It is still kept for medicinal purposes in the shops of the East, where it is called "Zoptème" by the Turks. The radical leaves of the oriental Hellebore are on long stalks, pedate, somewhat pubescent on the under surface when young, and regularly serrated on the margins; while those of the floral leaves are without footstalks, palmate, and finely toothed. The flower-stems grow about a foot high, with peduncles usually forked, and bearing large solitary flowers having the sepals more or less pointed, permanent, and when young white stained with purple towards the edges, but quite green when old. It flowers from February to April.

It is the opinion of botanists that in reality the Black Hellebore of the ancients was not the *Helleborus niger*, but another species, called by some writers, *H. orientalis*, and, by others, *H. officinalis*. Dr. Lindley says, "A poison so deadly as that which the ancients called Black Hellebore would naturally attract the attention of the moderns; and accordingly from a very early period a plant occurring plentifully in the middle of Europe, and as far south as the Aithos mountains in Greece, has been selected as the classical species."

The oriental Hellebore is found plentifully on mountains in most parts of the Levant, on the Bithynian Olympus, about Thessalonica, and near Constantinople. The roots are an acrid and violent purgative.

HELLEBORUS NIGER, *Limæus* (The Christmas Rose).—This kind is a native of woody mountains in many parts of Europe, especially those of Austria, Piedmont, Styria, Greece, Provence, the Pyrenees, and Apennines, and is an old inhabitant of English gardens, for it was introduced so far back as the year 1596.

The Christmas Rose grows from 9 to 12 inches high, and has rather large, smooth, pedate leaves, somewhat resembling a large bird's foot, and produced in the spring after the flowers are faded. The flowers are large, cup-shaped, with a white or rose-coloured corolla-like calyx, and produced in scapes from the end of December to March; at first pure white, afterwards rather pink, and finally they become green before fading.

In mild seasons the flowers begin to expand towards the end of December, which circumstance has gained for the plant the name of Christmas Rose.

There are two varieties of the Black Hellebore—one the common kind, and the other with larger flowers and narrower leaves, and which latter is an Austrian plant, sometimes named *vernalis* in gardens on account of its flowering much later in the spring than the common or broad-leaved kind.

The virtues of the *Helleborus niger* were formerly too much extolled in the old herbals. It is probably now undeservedly neglected, but its use requires great caution, for its effects are very uncertain and dangerous, as it loses its virtues by keeping. Its medicinal uses are as purgatives in cases of mania, melancholy, lethargy, dropsy, and for worms. Snuff made from the dried leaves causes violent sneezing, while if smoked like tobacco it is a good remedy for the toothache.

The roots, however, are the part used in medicine, and consist of a black furrowed roundish head, about the size of a nutmeg, from which short-jointed branches arise, sending out numerous fibres about the thickness of a straw, blackish outside, white or yellowish white within, and of an acrid nauseous and rather bitter taste, exciting a sense of heat and numbness in the tongue, and having a nauseous smell. The root is used in the form of a tincture, but its effects are uncertain and dangerous.—GEORGE GORDON, A.L.S.

(To be continued.)

THE LOVE OF ROSES AMONG THE ROMANS.

THE love of the ancients for Roses was something fanatical. I do not so much refer to the poets; for probably the modern and the antique bards may vie with each other in the use of the Rose as a common-place of poetical illustration; but I allude to a strong passion for the visible, tangible, scent-giving Rose, as something to be enjoyed by all the five senses, scarcely excluding that of hearing, for a rustle of many Roses must have attended some of the more extraordinary manifestations of idolatry. A time without Roses was a contingency to be avoided at any cost; and the Romans, though the mildness of their climate allowed the adored flower to grow at an unusually late season, could not submit to the privations of a winter. Not only were whole shiploads of Roses brought from Alexandria in the inclement season, but various means

were devised for preserving the gathered flowers throughout the year with as much freshness as was attainable.

The wreath of Roses, of which one reads and writes about so often without any other image than that of a curved twig with a tolerably rich supply of floral ornaments, was capable of a high degree of elaboration; for the Roman florists looked upon an enlacement of whole flowers as an exceedingly meagre affair. For a grand work of art they took the Rose leaves separately, laid them over each other like scales, and thus produced a sort of fragrant sausage.

This refinement in the construction of wreaths will show that the luxurious ancients not only insisted on the constant presence of Roses, but were determined to have them in as large a quantity as possible. The anecdotes that illustrate this form of the floral passion could scarcely be surpassed in wonder by the wildest imagination:—"To enjoy the scent of Roses at meals," says Herr Wustemann, "an abundance of Rose leaves was shaken out upon the table, so that the dishes were completely surrounded. By an artificial contrivance, Roses, during meals, descended on the guests from above. Heliogabalus in his folly caused Violets and Roses to be showered down upon his guests in such quantities, that a number of them, being unable to extricate themselves, were suffocated in flowers. During meal times they reclined upon cushions stuffed with Rose leaves, or made a couch of the leaves themselves. The floor, too, was strewn with Roses, and in this custom great luxury was displayed. Cleopatra, at an enormous expense, procured Roses for a feast which she gave to Antony, had them laid two cubits thick on the floor of the banquet-room, and caused nets to be spread over the flowers in order to render the footing elastic. Heliogabalus caused not only the banquet-rooms, but also the colonnades that led to them, to be covered with Roses, interspersed with Lilies, Violets, Hyacinths, and Narcissi, and walked about upon this flowery platform."

As a source of artificial perfumes the Rose was employed by the ancients in other ways than in those oils and waters that are familiar to modern life. When the leaves had been pressed out for higher uses, they were dried and reduced into a powder, called "diapasma," which was laid on the skin after a bath, and then washed off with cold water. The object of this process was to impart a fragrance to the skin. As a medicine, Quinces preserved in honey were introduced into a decoction of Rose leaves; and the preparation was deemed good for complaints of the stomach. In the culinary art Roses had likewise their place of honour, and were put into many dishes for the sake of their pleasant flavour. For this end they were sometimes preserved—a delicate process, as they were very apt to become mouldy.—Rev. W. H. E.

GLEANINGS FROM ROCK AND FIELD TOWARDS ROME.—No. 12.

From the inn beneath the Susa mountains we began the ascent of Mount Cenis on foot, hoping to proceed leisurely a little in advance of the carriage, enjoying the pure air and the new flora. We had not proceeded far when a mountain storm overtook us, and we had to run for shelter to a soldier's hut. The soldier made us welcome in the most courteous fashion, giving us seats, and at the same time a great deal of weather wisdom in an unknown tongue. Presently a poor girl, carrying a fat baby, came in for shelter also, and never did I see a more picturesque pair. The girl was dressed in a brown dress, very old and very worn; but round her neck she wore a large gilt cross, and above that a large gilt heart, necklace and earrings. She had several rings on her hands, and on her head a cap of the coarsest linen trimmed with old point lace—very coarse but real, and scrupulously clean. And the baby? The baby, too, had a little white cap, and laughed and crowed at the strangers right merrily.

We had a grand journey up the old mountain amidst torrents of rain mingled with thunder and lightning, which broke at one moment above us, at another below, and again, as it were, in our very faces; while vast armies of cloud rolled majestically to and fro in the valley beneath or about the mountains around us, disclosing now snow-capped peaks glittering like diamonds; now waterfalls scattering their airy spray, across which sunbeams played at rainbow-making; and now a tiny happy valley adorned with beds of the brilliant *Gentiana acaulis*, *Primula marginata* and *longifolia*, with the little *Gentiana pumila* (?)

growing on grassy slopes beside huge walls of snow 12 feet high.

We passed fields full of the lovely white *Anemone sylvestris*, much like our *A. nemorosa* magnified half a dozen times its usual size; and then we came upon other fields one mass of a pale little *Crocus*, which rises into life and beauty directly the snow melts; while here and there the rocks would show beautiful tufts of *Primula marginata*, and the broken walls revealed masses of *Cystopteris fragilis* and *Ceterach officinarum*, with banks of *Polypodium dryopteris* waving at their feet. It seemed like a new world of flowers springing up from a grave of desolation, for nothing could exceed the savage morose look of the scene, saving when a temporary burst of light and sunshine fell on a chosen space. As we neared the top of the ascent the storm concentrated itself into one tremendous explosion, and then rolled away down to the valley beneath, blotting it out from creation, and leaving us a blue sky abiding down into a clear lake, which lies outspread on the top of the mountain close by the hospice where snow-trapped shepherds and travellers find refuge, and where there is a chapel and an altar at which the hardy mountaineers may meet in worship.

Every now and then, while making the ascent, we came on one of the twenty-three houses of refuge, built with its thick rock-like wall turning its sturdy back to the road, which in most cases made a sort of shelter for it. I looked in vain for the great dogs of St. Bernard, and yet the houses of refuge are in great request during the winter; but instead of dogs there ran out groups of little children with bouquets of wild flowers, and by never refusing to buy these I used to make a tolerable collection, even when the day was too wet or the roads were too good for flower-hunting.

What I saw of Ferns during this morning's drive gave me an exceeding longing "to do" Mount Cenis leisurely; for the few I managed to procure by making a dash out of the carriage, or by buying from the children, seemed but as the advanced guard of a whole beautiful army lying hidden, like riflemen, in their suit of green, in every nook and cranny of those glorious mountains. How I longed for roots of all I saw I could never tell. What my companions endured in the way of sundry halts after this or that treasure, from petticoats all dabbled in mud and water or fringed with ice, from bundles of cold clammy Ferns with dripping roots being unceremoniously poked into their warm hands with, "I pray you just hold these till I'm settled;" or, "Would you mind taking charge of them? for my bag is throttling me. And where are the trowels? Oh, here in my pocket, or there under you. And the knife? Why, bless me, I forgot to shut it! Do take care." All these pleasures and sundry others—such as cake (the delicious Milanese flat raisin bread which cannot be procured elsewhere), put unawares into the Fern-bag, or the Ferns put into the cake—I leave all this for their pens, not mine, to describe for me. Had I not my treasures, and was I not content?

Why do I thus linger on the mountain-top, seeing visions of the past in the clear waters of the lake? I am taking my last leave of Italy; for almost immediately after leaving the hospice you descend by Fir-clad slopes into Savoy—French Savoy now—so smiling and fertile, one wonders how Victor Emmanuel could ever have found it in his heart to give up such pleasant places.

By-and-by we passed fields literally covered with the *Gentiana pumila* (?) and *Primula longifolia*; and there in the bright sunshine I dug away at the roots to my heart's content, till the carriage was filled with perfume and the siftings of sandy clay, as if we had been navvies revelling in Cowslip tea.

After a while we came to a beautiful valley, through which the river Aar carries its rushing waters in a wild tumultuous manner, while snow-clad mountains rise on every side, only the snow was melted. All at once I heard, "Look up! there is the Mount Cenis tunnel." I obeyed and looked up. We were close upon the village or town of Ronmeaux, between Lana-le-bourg and St. Michel; and on the left-hand side, far up a giant mountain, I saw two square framed doors, while perched against the mountain side were the workmen's cottages. Near the square doors is a large semicircular hole, which every now and then vomits forth rocks and stones, which go rattling down the mountain's face. This was the Savoy side of the Great Bore which is to pierce through seven and a half miles of mountain, to make a railway, by which travellers will be taken that they may avoid the sweet air of heaven, laden with the breath of flowers, and be enabled to go rushing to and fro Italy and Switzerland during every month of the year.

A Piedmontese named Joseph Medail for ten years wandered about these mountains, seeking the best spot for this tremendous undertaking; but it was left for a Belgian—Mans, assisted by Sismondi the naturalist, to hit upon the place ultimately chosen. They spent four years in the interesting search.

The outlet, and inlet too, on the Piedmontese side is at Bardonecche, and the workmen are very gradually approaching each other. The two great problems were—how to supply the workmen with air, and how to ensure their meeting in the centre of the tunnel. To let down vertical shafts to ascertain the nature of the mountain and to supply fresh air for the workmen would have taken, it is computed, forty years! Most wonderful are the expedients resorted to for working the boring shafts and for breathing-material. The compressed air of six atmospheres is introduced in tubes—that intended for breathing, of course, expanding the instant it is released; the other forcing out the perforating needle or shaft, much in the same way as a popgun. For compressing the air the torrent of the Are is put into requisition. But my poor pen could never properly explain half of the wonders of this most gigantic work; but after gazing up at the perched cottages and inclined planes, I turned my longing eyes back up the valley, with its rushing waters and its fields of Primulas and Gentians; and if ever I go over Mount Cenis again, I think I shall choose the lesser bore of the mules to the greater bore of the tunnel. The cost of this undertaking is perfectly enormous. If finished by 1873, the share to be paid by the French Government alone is £1,287,000.

St. Michel, our next halting place, is one of the loveliest mountain villages I have ever seen. You do not look on the grand hills from afar off in mysterious unapproachableness, for they are close to your elbow, inviting you to scale them at every turn. Nor are they cold, and white, and glittering—too pure for aught but worship. They are rich and warm in colouring, not only courting the sun's rays, but, as it were, imprisoning them on many a glade and chosen spot.

On one of the lower rocks I found a mass of *Asplenium germanicum*, very dry and withered, but retaining sufficient vitality to repay me for my care by sending out new fronds. At first I mistook the withered fronds for *A. septentrionale*, they had been so fine and flourishing; but a little inspection proved differently. I fear for the life of the plants in England, for I have lost all but two in trying to persuade them to live out of doors. On the same group of rocks, but higher up, we found a very handsome orange-coloured Pheasant's-eye (*Adonis citrina*), the *Polygala alpestris*, and quantities of *Silene acaulis*, which gave a ruddy glow to many of the surrounding rocks, from the masses which trailed over them.

At the rambling old inn I found a parcel of alpine plants left for me by our pleasant railway companions of Susa. I wonder if they will ever read this little account, and my grateful acknowledgments with it. At St. Michel we took train for Geneva, changing carriages at Culoz.

Geneva—as I write the name I put down my pen and wonder. How was it that none of the numerous accounts I had read had given me the faintest idea of what Geneva was? For any true impression conveyed to my mind I might have read of Timbuctoo or Yucatan. Yet the clean little town, with the dark green waters of the Rhone for ever rushing through it, with its numerous bridges—its wooden pathways over the river, which laps up to the sides of the houses—with its sober-looking shops and its dark cathedral—has a life and individuality of its own, complete and utterly apart from that of any other place. "To be sure," you will say, "it's the lake, and the Castle of Chillon, and all that sort of thing." No, the lake of Geneva and Geneva are two separate things. I think it's Calvin. When I remember Geneva I feel cold and idle, and very clean and intensely dull. I feel as if I had suddenly passed from one hemisphere to another without crossing the line. The Southern Cross has set, and the northern lights stream up the cold pale sky. I miss from the shop windows the comely benevolent face of il St. Padre, which has given place to the sharp-visaged profile of Calvin. I miss the processions from the streets, the lights, the music, and the people from the churches. I miss the dear old dirty monks, the bells, the noise, the fulness and richness of the southern life; and it does not compensate me to hear that the Genevese are a hardworking set when they are not tipsy, and that life and property are respected, and safe as in England. Perhaps, too, I miss the little excitement of the dark passages and stiletto.

Yes, all this is gone—passed away from me, perchance, for

ever; but there is the lake and Mont Blanc just over the water. Mont Blanc, now clear and sharp in outline, frozen, and white; now grey and misty, looking unearthly in its robe of vapour; now golden red like a bank of lurid fire; and now nowhere. Yes, there is a tiny brilliant peak peering from the clouds: that is the Grand Mulets, Mont Blanc itself is to the right. A little watching, and the three-in-one mountain is visible, but only for a while. Presently all vanishes away, and sky and cloud look entirely innocent of its existence.

Must I speak more of Geneva, or will it be as if a foreigner were to describe Richmond or Hackney? Shall I tell of the wild flowers abounding in the neighbourhood?—of the snow-white *Melissa grandiflora*, the *Tragopogon major*, the *Orchis pyramidalis*, the *Dianthus asper*, and a lovely white *Orchis*-looking plant, with a stiff stem, and buds like closed Orange flowers, that I found in a Beech wood, and which in a smaller variety I once found in a Beech wood in Hampshire, when I was told it was an *Epipactis*, but I do not believe it. Then growing about a waterfall I found the *Pelargonium Robertianum*, and covering an old bridge a lot of *Cystopteris fragilis*.

I took my plants off in triumph to the Botanic Gardens, hoping to name them; but alas! for the system that prevails there, whether that of Professor De Candolle or other! I found obliterated names, dead plants, and disorder everywhere; and after many vain attempts I had to desist in despair, and returned grumbling to the lake and the mountains, which at all times answer every demand and satisfy every craving.

And so at length my little chaplet of Italian wild flowers is finished—my "Gleanings" gathered together and bound up. The sheaf is not large, and there may be here and there cockle with the barley, for there are innumerable difficulties attending even the naming of the commonest Italian wild flowers, from the lack of books and get-at-able botanists; but loving hands and willing feet have followed the reaper's track wherever it was visible. The harvest of the great field of nature is large enough for all. It cries out day and night for labourers. The more the reapers the more bountiful the store, for it knows no years of scarcity and famine, and the very wayside provides food enough and to spare for many gleaners.—*FILIX-FEMINA.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

In light dry soils progress may be made in putting in some of the principal crops. On stiff wet ground this should by no means be attempted. *Artichokes*, if the weather continue mild give them their spring dressing. *Asparagus*, make new beds with two-year plants, and fill up old ones. *Beans*, plant out Mazagans from boxes and pots. Earth-up the early-sown crops. *Cabbage*, plant out beds, and earth-up those already planted. *Cauliflowers*, plant out from frames or hand-glasses. The latter must have but three plants left in each. *Cucumbers*, the present mild weather will greatly conduce to the health of the plants, as it will allow of an admission of fresh air daily without fear of their receiving injury. Close the frames early in the afternoon, and let them remain shut down till the evening, when a little air may be given for the night. After linings have been renewed keep a constant watch on the state of the bed. *Leeks*, sow for a principal crop. *Onions*, sow main crops in drills or broadcast. Weed and thin out those sown in the autumn. The thinnings may be planted out in favourable situations. *Pot Herbs* should now be sown, or plantations made from cuttings. *Potatoes*, plant early sorts in a warm situation; for earlier crops a few may be planted in boxes in heat, and transplanted to the open ground when they have vegetated. Those growing in frames should have air given freely. *Parsnips*, now is a good time to sow a good breadth in ground deeply trenched, with the manure at the bottom. It is a very useful vegetable, and none better repays extra care in the cultivation.

FRUIT GARDEN.

Proceed with pruning and nailing when not too cold for these operations. If any planting still remains to be done, let it be performed as soon as the ground is in a fit state for that purpose. Do not, as is sometimes done, over-manure. It is a great mistake to induce the production of gross long-jointed wood in any state of the existence of a fruit tree, wood of this description never becomes thoroughly ripened. With stone-fruits, gum, canker, and premature death are sometimes the result; and in the case of Pears, anything deserving the name of a crop is never obtained till the gross habit induced by

planting in too rich soil is overcome. Ground intended for fruit trees should first be effectually drained and then trenched to the depth of 2 feet, and if the natural soil is found to be too poor for the health and growth of the trees, a sufficient quantity of fresh turfy loam should be added; but rich stimulating manures should not be used, for they are soon exhausted, and the trees are left to depend upon the natural soil for their support, and when treated in this way never give satisfaction.

FLOWER GARDEN.

As soon as the ground is a little dried it will be a good plan to have all the vacant beds in the flower garden forked over, so as to let the soil become properly pulverised prior to planting out the autumn-sown annuals. Preparation must also be made for a general sowing of the more hardy kinds, such as Larkspurs, Godetias, Clarkias, Nemophilas, &c., which should now be made on the first day the ground is sufficiently dry to admit of sowing them. Proceed with pruning shrubs and common Roses, but leave the more tender kinds until you are sure they will not be injured by frost. The thinning and pruning of young plantations should now receive attention. It is perfectly lamentable to see so many completely ruined from want of this necessary attention at an early stage of their growth. It was in times past totally neglected, and it is in no wise altered at the present day in very many instances. It is an error to plant very thickly of one common mixture, the consequence of which is, that the quick-growing useless sorts soon overtop the more valuable and what ought to be the permanent trees; neglect in thinning, following mismanagement in planting, soon carries them beyond recovery, and they become drawn up like whip-handles, useless either for shelter or profit. Had such been properly thinned in time they would have served the purpose for which they were intended—that is, shelter or ornament.

GREENHOUSE AND CONSERVATORY.

Many plants will soon be fit for repotting. When plants are removed to a higher temperature, examine their roots, and see if they are healthy, and if not, shake the old soil from them and repot them in fresh soil in smaller pots. This is a good mode of preparing plants for the one-shift system, which may be adopted as soon as the roots begin to spread on the outside of the new soil. The one-shift system should never be adopted until you are satisfied that the roots are in a healthy state and beginning to grow. Orange trees in tubs or pots should be carefully examined in order to ascertain whether or no their roots are in a healthy state, and those requiring more room should be shifted at once. In many instances, however, it may not be possible to afford large specimens a shift; in that case remove as much of the surface soil as can be done without injuring the roots, and replace it with a mixture of good loamy turf, broken bones, decayed cowdung, and sand, and see that the balls of the plants are in a moist healthy condition. Dispense with fire heat in the conservatory as much as possible, a temperature of 55° by day and 45° by night will be sufficient for general purposes. Do not allow the heat to rise much by sunshine. There is as much skill displayed in retarding certain flowers as in hastening their flowering in the first instance, and to this end a canvas screen of a thin character should always be at hand to throw over the roof during the mid-day hours of a bright day. Be sure to sow a little Cineraria and Chinese Primrose seed as soon as you can; this, with another sowing in April, will furnish a supply throughout the next autumn and winter, if high cultivation be carried out. Attend to your ornamental trellis plants, they should always be in fine condition, and, to accomplish this, attention is necessary. Forcing-bulbs, as Hyacinths, Narcissus, &c., should, after blooming, have their leaves tied up, and should be transferred to a cold frame, and, when the most severe weather has passed away, they should be turned out of their pots to feed in prepared beds.

STOVE AND ORCHID-HOUSE.

Continue repotting such Orchids as need that operation. Stanhopeas, Acroparas, Dendrobiums, &c., suspended in baskets or on blocks will now require syringing occasionally, or watering by some means. Many of these will have received little water since the end of October, and will have become excessively dry. Blocks may occasionally be soaked for a few minutes overhead in tepid water, also baskets, if very dry. If syringing is resorted to, choose a bright sunny day for the purpose. On such occasions keep up a brisk fire, and give air freely in the afternoon, for fear of the moisture lodging on the unfolding bud, which, in some cases, would prove injurious. The temperature should now be allowed to rise freely on bright

days, remembering that a rise by solar heat alone can do no harm for a few hours, even at this period, provided it do not exceed 75°.

FORCING-PIT.

Continue to increase atmospheric heat and moisture at fitting periods. Attend to plants for succession, watch for the worm in the bud of Moss Roses, fumigate for thrips, &c., and see that the plants are duly watered with tepid liquid manure.

PITS AND FRAMES.

Some little water will now be required here, give plenty of air all night in safe weather, and propagate stock for bedding out. Endeavour to keep the air of the pits and frames as dry as possible.—W. KEANE.

DOINGS OF THE LAST WEEK.

Fitness.—"Have a place for everything, and keep everything in its place," is a capital axiom and should ever be kept in mind by the gardener, though in these days there is scarcely one in ten who can carry out the principle. It does one good to go to a place and find a separate house for every particular section of plants, and in which, therefore, throughout the season they can receive that kind of treatment as respects temperature, moisture, &c., which their circumstances require. No such treatment can be given where in two or three houses almost everything must be attempted. Hence, the complaints of plants being drawn, unhealthy, troubled with insects, covered with mildew, &c. If a nice conservatory is to be kept gay all the winter, the stove, the greenhouse, the forcing-pit, must all be made to contribute their share; but the due health of the plants must be maintained by keeping them there only so long as they are at their best, and then removing them to the place, where they will have what they need most. Years ago we had fine displays in winter by means of *Justicias*, *Begonias*, *Poinsettias*, *Euphorbias*, winter-flowering *Heaths*, *Epacris*, *Camellias*, *Cinerarias*, *Chinese Primroses*, double and single, forced shrubs, bulbs, &c., but to keep these in one house required some care in grouping, and placing the hardiest where most air could be given; and even then the average temperature at night being seldom below 50°, and oftener nearer to 55°, with a rise from sunshine when it could be obtained, some of the hardier plants, as *Cinerarias*, required extra care to keep them clean and bushy. We think it but just to mention this, as some enthusiasts with little room, but who must try everything, complain very much that their plants are very much drawn this winter, which in most of the cases where any explanation is given, we would at once attribute to the plants being kept in too warm and close an atmosphere, and at too great a distance from the glass, and especially when the roof is at all cumbered by creepers. The winter, too, as a whole, has not only been extremely damp, but also very sunless, and that would occasion the spindling-up of plants under glass, when not neutralised by giving extra air, without allowing moisture to come in with it.

In such cases the injunction so often given, "Keep the plants near the glass," is all very well; but in the usual run of plant-houses, if a portion of plants are thus privileged, what becomes of those that must be on beds, or stages, many feet from the glass, and in many cases shaded, too, by creepers? One advantage as respects the latter is, that with the exception of winter-blooming plants the other creepers that chiefly bloom in summer may be pretty well cut-in in autumn, so as to allow all the light possible in winter.

Keeping Plants close to the Glass is also worthy of the consideration of those whose want of that success at which they aim is chiefly owing to their attempting to have two or three distinct crops of plants on different levels in the same house, one tier above another, like the floors of a house, whilst the sun through the glass lean-to roof can only admit full light to the top tier or storey. We have done as much with storeying and cramming in one house as most people, and from necessity, in order to effect certain results with little room; but no contrivance, except moving the plants, could prevent the lower shaded storeys or tiers from becoming weakly, if enough of heat reached them to cause them to grow. Some people seem to think that they can have tier above tier of plants in a house, just as they have tier above tier in a draper's shop. They forget, that though such soft goods are often the better of having but little of the sun, light for the generality of plants is the great essential for a healthy existence.

Keeping growing plants close to the glass is, therefore, of

more importance in pits and frames than it is in the case of lean-to houses with front glass. In the case of pits and frames there is no light, except what comes directly over the tops of the plants, no side light whatever reaches them, and, therefore, the tendency to be drawn up weakly will just be in proportion to the heat applied and the distance the plants are from the glass. The position of plants in a pit must, however, often be regulated by other considerations. If the pit or frame is shallow, the plants will be exposed to sudden extremes, just as they are placed close to the glass: hence, even on the score of safety, it is often desirable to have the bulk of the plants near the back fully a foot from the glass, and to place other plants near the front that would for a time rather enjoy the shade. There are fine-foliaged plants, too, which often enjoy a diffused rather than a shaded light, and these may receive what they want by standing farther from the glass. By acting on this principle shading may to a great extent be dispensed with.

An amateur, a thorough admirer of the "close-to-the-glass principle," informed us two years ago that in following our mode with his *Calceolaria* cuttings he put them in in a cold pit in October, and that they were not more than 4 inches from the glass. He was resolved to have them bushy, but the very proximity to the glass necessitated shading at first, which was rather against bushiness, and worse than that, the want of covering in a cold frosty morning caused them to be much injured by frost, so that he came to have doubts as to the "near-glass principle." Our correspondent, who will see this, will excuse our referring to it, merely as an evidence that a good idea may be carried too far. We generally put our cuttings out at a distance of from 12 to 15 or 18 inches from the glass. This season we did not insert them until the end of October and the first days of November. They are watered as inserted, but they seldom or never have any shading. In fine days the sashes are drawn off, in mild days tilted; and if a sudden unexpected frost should come there will be fully a foot of air beneath the glass to freeze before the cuttings be touched: hence, even for plants in pots that have to be pretty near the glass in pits, they will be less subject to sudden extremes if the pit is deep enough to permit of a platform being placed in it, so that there may be air below the plants as well as above them.

But if this old rule about keeping plants close to the glass should be followed with prudence, even in lean-to pits, it may be regarded as perfectly obsolete in all span-roofed houses with glass at the sides as well as on the roof. A stage or shelves in such a house is mere a matter of adaptation and convenience than of sheer utility, so far as light is concerned, more especially if large squares of glass and light bearers are used. In such houses plants will thrive as admirably on the floor as they will do on a stage, *if, in either case, there is nothing above them to intercept the light, and, in either case, ventilation is sufficiently under control.* Whilst, therefore, the advice about keeping plants close to the glass must be attended to in old dark houses and pits, it will become pretty well obsolete in the case of new light airy houses. Even in such houses pretty well all glass, if there are plants on the floor, a stage about 3 feet above the floor filled with plants, and the roof shaded with creepers or a fair crop of Grapes, we should expect the plants on the floor to become very spindly when they had enough of heat to make them grow. In a comparatively dormant state many plants could be kept there. To meet the case of many inquirers as to how to obtain Grapes and flowers out of their one house, and both good, and without interfering with each other, we shall have a few words to say ere long. Meanwhile, instead of lofty houses, we have no doubt that lower ones with light all round will become more general for plant purposes, unless where heat and fuel are primary considerations, for then the opaque wall of a lean-to house constitutes an advantage.

KITCHEN GARDEN.

Much the same as last week. Nothing could be done with advantage except wheeling on a frosty morning, followed as we expected by a drenching afternoon. On the same morning, the ground being a little hard, cleared away a few decayed and yellow leaves from Brussels Sprouts, Savoys, &c., as a few of them, especially in muggy weather, are sufficient to taint the atmosphere of the garden. Threw wood and cinder ashes over Lettuces, &c., to keep slugs from them, and hardened off with plenty of air Peas and Beans under protection, so that they can go out in good condition as soon as the ground is dry and friable. Cut off the heads of Turnips in store, and did

the same with Carrots, as the mild weather is causing them to shoot prematurely. Gave abundance of air to Radishes, young Carrots, &c. Radishes in the open air had better be covered every night, the weather is so uncertain. Gave a little more room to Kidney Beans bearing in pots. There is nothing gained by having them too close together. Kept up successions of Sea-kale, Rhubarb, and Asparagus. As we wanted the spare room in a heated pit for forcing and propagating purposes, placed soil in the bottom for Cucumbers, and then plunged in it large pots with strong bushy plants of Cucumbers showing fruit. They will fruit more freely and early from the cramping of the roots in the pots, and the hole at the bottom is sufficiently large to let out the roots ultimately. By this means we make better use of any part of the pit unoccupied, than if we planted out the Cucumbers in the narrow border. All plants turned out in a bed or border suffer less or more when other plants in pots are set on the surface, as the watering of these pots promotes an unhealthy state in the border beneath them. These matters are worthy of notice when every inch under glass has to be made the most of. Partly from necessity at first, and now from choice, whether in pits or frames, we now keep the roots of Melons and Cucumbers chiefly in a space of from 2 to 3 feet in width, instead of their traversing all the width of the bed, and we have less trouble and rather more fruit in consequence.

FRUIT GARDEN.

Much the same as last week; ground too wet and clammy to do much out of doors. Proceeded with dressing and tying trees in orchard-houses. The trees against the back wall are tied to nails driven in the wall at regular distances, and remaining stationary as so many studs. Tying is not so easily done as when wire trellis is used, but the expense is far less, and there is no trouble with sheets behind the wires. The studding with cast metal nails at once is far superior to using nails and shreds in the usual mode of fastening, as the shreds are a constant harbour for insects and their eggs, and every nail-hole becomes a nest for such enemies. In driving in the nail-studs, 6 inches apart every way is a good distance; and when metal nails are used a large space of wall can be done for little money. When we thus used nails as standing studs, we heated a lot of nails on an old useless shovel placed over the fire, and then turned the hot nails into oil, and when cool spread them out to dry. If these be coloured, when the wall is covered there will scarcely ever be any appearance of rust upon them. In all other departments allowed growth to come on slowly, so as not to be weakened in the dull weather (See remarks on temperature a few weeks back.) Planting fruit trees should be finished as soon as the weather will permit. A little frost will now do great good in keeping back the buds of fruit trees out of doors, and will most likely be accompanied with more sunshine to benefit what is further advanced under glass. A steady uniform heat should be maintained about Pines showing fruit. Plants in pits and frames should have linings well backed-up back and front, when dung is used for heat, so that the atmosphere may be warmed without the heat passing through the plunging material of the bed. Such dry top heat is of importance in all such moist dull weather. For Melons, especially early ones, much depends on having a nice atmospheric temperature at an early period, without running the risk of making the bottom heat too strong to be healthy. When dung heat, or that from any fermenting material, is used, this top temperature is easily supplied by banking fermenting material round the pit or frame. Will prune and nail trees out of doors as soon as we can.

ORNAMENTAL DEPARTMENT.

In dryish places proceeded with planting trees and shrubs, and this was better done on grass-covered ground than on that which had come under the influence of the spade or the plough, as the ground is still very wet. Gave plenty of air to *Calceolarias* and other half-hardy plants in pits. Filled vases, &c., with bulbs for the mansion. Did little with the lawn or walks. Notwithstanding care, some *Primulas* in the conservatory have damped and become unsightly, owing chiefly to drip from the roof. Violets in pots under glass required plenty of air. Auriculas that have become too damp from drip should have the drainage examined, a part of the surface soil removed, and its place supplied with rich fresh compost. Everything comparatively hardy, but under glass, should now be kept as robust as possible, by plenty of air in mild weather.

Air-giving.—Such a winter as we have passed through does much to show the importance of a heating apparatus in all kinds of plant-repositories, as a little artificial heat during the

day would dispel all damp, and insure a circulation of air. As already stated, when one house is made a flower-house, the plants requiring the highest temperature should be kept at one end, and no air given there, whilst air should be admitted close to such plants as Cinerarias and Primulas. In common greenhouses forced plants should be treated in the same way, at least until they are hardened to the atmosphere in which they are placed. In mere average-temperated greenhouses hard-wooded plants, as Kennedias, Boronias, Hoveas, Leschenaultias, Croweas, and the most tender Pimeleas require a closer and warmer atmosphere, and more direct light, and less direct air coming at once upon them, than would be agreeable to Acacias, Cytians, and softwooded plants, as Pelargoniums and Cinerarias, and the general run of Heaths. One reason why a collection of Cape Heaths is best grown in a house by itself, is that they require a very free circulation of air, even if not much above the freezing-point, which circulation at that temperature would soon be fatal to a Crowea or a Boronia. Many a fine hardwooded plant from Australasia has been destroyed from standing just behind an opening for air in front of a house in cold weather, when hardier plants would even have enjoyed the draught. We are quite well aware that such plants in their natural habitats often pass unharmed through a degree of cold to which they would be rarely subject in our greenhouses; but we must not forget that the fierce cloudless sun in such climates in summer gives a hardness and induration to the wood which it can hardly acquire under any circumstances in our more moist and clouded climate. Besides, we are too often led to forget the effects of a draught of cold air. It is a very different thing from exposure to the cold without the draught. We have known instances of delicate young ladies, aye, and young gentlemen too, who would pass from a heated ball-room, and with little more than a loose shawl or mantle in addition to ball-room clothing, and traverse the gardens and parterres of an evening, and with scarcely a perceptibly injurious effect; but, alas! we know of instances under such circumstances in which, when oppressed with the heat of the rooms, sitting for fifteen or thirty minutes in the agreeable coolness from the draught of an open window, has but too surely left its mark in the hectic consumption and the untimely death.

Had we again the chance of growing a good collection of the hardwooded tenderer Australasian plants, except in extremely mild weather they should never have air directly beating upon them from the front of the house, unless it was heated before it reached them. They would have all that would be necessary for them from top air alone. As a general rule, in ordinary circumstances, with all such tender hardwooded plants front air should be given sparingly in winter. A very slight opening at the apex will in general soon set all the air in a house in motion, and the heated air that escapes will heat and moisten the heavier and colder air as it passes through it. Some time ago we were asked to look at some nice cottages for labouring men. Strange, the windows that did not open from top to bottom were in two halves, the upper half a fixture, the lower half lifting up so as to give what air was wanted about 2½ feet from the floor. The hundred or so of windows, we are glad to say, were altered, so that the upper sash should pull down. An inch even in a cold day would soon change the atmosphere of a room, and if a person were at a respectable distance, he would enjoy the fresh air without being cooled by it. The throwing up of the lower sash admitted the cold air from without to mix at once with nearly the coldest air of the room. Hence for all glass houses we look upon top air in ordinary circumstances as more suitable, and especially in winter, than front air, which should always be admitted with care and caution. If the stimulus from expansion from heat is regulated by the presence of bright light, the whole theory and practice of ventilation will be reduced to its simplest proportions; unless in extreme cases, sunlight, and sun heat along with the light, will not make plants weakly or diseased. In such favourable sunlight the chief danger to be guarded against is scorching from the want of early air-giving; and make sure if a rather high temperature is reached, that it rises gradually, and after air has been given. The giving a little early is of more importance in every way than giving much at a time, and often when too late. Went on potting, &c., as detailed in previous weeks' notices.—R. F.

TRADE CATALOGUE RECEIVED.

H. N. Bransby, High Street, Alton.—Catalogue of Select Vegetable and Flower Seeds.

COVENT GARDEN MARKET.—FEBRUARY 17.

In consequence of the continued open weather, there is a constant and liberal supply of winter vegetables, and there is likewise a large increase in our importations, among which are some fair samples of Green Peas. Prices rule much the same as last week. Pines are more plentiful, and a few Strawberries are coming in.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½	6 to 4	Melons.....	each	3 e 5 0
Apricots.....	doz.	0 0 0	Mulberries.....	punaet	0 e 0 0
Cherries.....	lb.	0 0 0	Nectarines.....	doz.	0 0 0 0
Chestnuts.....	bush.	8 0 16 0	Oranges.....	100	4 0 10 0
Currants, Red ½	sieve	0 0 0 0	Peaches.....	doz.	0 0 0 0
Black.....	do.	0 0 0 0	Pears (kitchen)..	doz.	4 0 8 0
Figs.....	doz.	0 0 0 0	dessert.....	doz.	4 0 8 0
Filberts.....	lb.	0 0 0 0	Pine Apples.....	lb.	3 0 12 0
Cobs.....	100 lbs.	0 0 160 0	Plums.....	½	sieve 0 0 0 0
Gooseberries... ½	sieve	0 0 0 0	Quinces.....	½	sieve 0 0 0 0
Grapes, Hambro lb. ½		10 0 18 0	Raspberries.....	lb.	0 0 0 0
Muscats.....	lb. ½		Strawberries.....	oz.	5 0 7 0
Lemons.....	100	6 0 10 0	Walnuts.....	bush	14 0 20 0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	each	0 6 to 0	Leeks.....	bnch	e 8 to 0 0
Asparagus.....	bundle	8 0 12 0	Lettuce.....	per score	1 0 2 0
Beans Broad.....	bushel	0 0 0 0	Mushrooms.....	pottle	1 6 2 6
Kidney.....	100	3 0 4 0	Must. & Cress, punnet	0 2 0 0	
Beet, Red.....	doz.	2 0 3 0	Onions.....	per bushel	3 0 5 0
Broccoli.....	bundle	1 0 2 0	pickling.....	quart	0 0 0 0
Brus. Sprouts... ½	sieve	2 0 3 0	Parsley.....	½	sieve 1 0 1 6
Cabbage.....	doz.	0 9 1 6	Parsnips.....	doz.	0 9 1 6
Capsicums.....	100	0 0 0 0	Peas.....	quart	20 0 0 0
Carrots.....	bunch	0 4 0 8	Potatoes.....	bushel	2 6 4 0
Cauliflower.....	doz.	2 0 6 0	Kidney.....	do.	3 0 4 0
Celery.....	bundle	1 0 2 0	Radishes .doz. hands	0 6 1 0	
Cucumbers.....	each	2 0 6 0	Rhubarb.....	bundle	0 9 1 0
pickling.....	doz.	0 0 0 0	Savoys.....	doz.	0 2 1 0
Endive.....	score	1 0 2 0	Sea-kale.....	basket	2 0 2 8
Fennel.....	bunch	0 3 0 0	Spinach.....	bushel	3 0 4 0
Garlic and Shallots, lb.	0 8 0 0		Tomatoes.....	½	sieve 0 0 0 0
Herbs.....	bunch	0 3 0 0	Turnips.....	bunch	0 4 0 6
Horseradish ..	bundle	2 6 4 0	Vegetable Marrows dz.	0 0 0 0	

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

FERN MANUAL (G. G.).—There is no enlarged form.

MEALY POTATOES.—G. P. will be greatly obliged by "W. Ross" stating when and how he applies the alkalies he recommends. Should they be spread upon the soil and dug into the earth some time before planting the Potatoes, or should this be done just at the time of planting?

VINE-BORDER.—RIDGON-BORDER (X. Y. W.).—We would do nothing to your border. Leave the thatched covering, it will be all right. Where rabbits are troublesome a Geranium-border would look very well in four lines, with the sorts you name planted thus—Golden Chain. Flower of the Day, Tom Thumb, and Madame Vaucher and Mangles, mixed, for the back row. If Flower of the Day were small, and Golden Chain were large, we would transpose them, placing Flower of the Day in front.

RIDGON-BORDER (W. C. F.).—Of your two arrangements we prefer this—1st row next the grass, Cerastium tomentosum, white; 2nd, blue Lobelia dotted with Geranium Cloth of Gold, blue and yellow; 3rd, Flower of the Day Geranium, scarlet and white; 4th, Christine, pink; 5th, Stella Nosegay, scarlet; 6th, yellow Coleolaria; 7th, Ageratum, alternately with Zelinda Dahlia, blue and purple. This plan would look very well if the flowers were taken off Flower of the Day Geranium. For the seventh row, Ageratum or Zelinda Dahlia, would be more easily managed if only one of them were used for the row. The same remark will apply to the second plan. We like the first the better.

BOOKS (E. E. B.).—For the management of plants in the greenhouse, &c., Keane's "In-door Gardening;" for plants in the garden, Keane's "Out-door Gardening" will suit you. You may have either of them free by post from our office by enclosing twenty stamps with your address, or forty stamps for the two.

ORCHIDS FOR A NORTH HOUSE (S. L.).—When speaking of those at Mr. Low's nursery, I mentioned them as instances of cool-house growing, so that I cannot say whether such would suit "S. L.'s" stove. He might, however, try *Lycastis Skinneri*, *Barkeria spectabilis*, *Sophronitis grandiflora*, *Odontoglossum grande*, *gloriosum*, &c. If he apply to Messrs. Backhouse, of York, they would send him his catalogue, in which he will obtain a great deal of information, well and clearly put.—D., Deal.

ROSES (F. L.).—If true to name several are very good, but some are very old. Duke of Cambridge, William Jesse, and La Reine are Hybrid Perpetuals. Chénédiolé, General Allard, Madame Plantier, Duke of Devonshire, and Dauphine, Hybrid China, &c.; Shakespeare, and Alphonse Maille, Gallica; Eugene Hardy, China; and Da Candolle, Moss.

LAPAGERIA ROSEA COMMENCING GROWTH (W. A. O.).—Your plant will now, as it is pushing up new shoots the size of the little finger, require to have the soil kept wet (and it never ought to be dry), increasing the quantity as the growth may render necessary. Water, therefore, and encourage growth.

RENOVATING LAWN (Salterton).—About the middle of next month apply a dressing of rich compost, or very old rotten manure, so as to cover it from a quarter to half an inch thick, prior to which the bare places should be pointed over with a fork so as to loosen the soil. Distribute the compost evenly; and, as early in April as there is a prospect of rain, sow over it the following mixture, scattering a quantity over the bare places first, about double that given in other places:—*Festuca rubra*, 6 lbs.; *Festuca tenifolia*, 4 lbs.; *Festuca duriuscula*, 6 lbs.; *Cynosurus cristatus*, 6 lbs.; *Poa nemoralis*, 4 lbs.; *Poa pratensis*, 4 lbs.; *Lolium corniculatum*, 2 lbs.; *Trifolium minus*, 4 lbs.; and *Trifolium repens*, 4 lbs. As you have tried at various times having turf we give you this heavy seeding, and we think the result will be a good lawn of fine turf. The quantities named are for an acre; you will, therefore, have to take proportional parts of each Grass according to the extent of ground to be sown. After sowing rake with an iron rake, and roll well immediately afterwards. You must sow and roll on a dry day, and if rain fall at night or on the next day your lawn will soon be green. Keep well rolled after June, and do not mow before that time. If you have the bare places lightly scratched, sow the seeds, and then manure, the seeds will very likely be buried too deeply; they will grow much better here than covered deeply with soil, in which case most of them will perish. White Clover bears dry weather well, and, so far from its being the first to go, stands with us after the Grass has been burnt up. It, Yellow Suckling Clover (*Trifolium minus*), and Bird's-foot Trefoil (*Lolium corniculatum*), last year and the year before grew so well on our dry light soil over gravel, as to render the lawn quite green after the Grasses were apparently burnt up.

FORMING GRASS STEPS (An Old Subscriber).—We made some steps of grass in the autumn of 1864 in precisely the same manner as your gardener, and upwards of an hundred yards of the sides of a terrace, and the grass not only withstood the drought of 1865 without becoming brown, but now forms as green, firm, and close a turf as that upon the level. We think that the sides of the steps have been made perpendicular, and in that case the turves might bulge out, and, consequently, would not mite well to the soil. Had they been slightly on the slope, (our steps are 9 inches in height, and slope from the perpendicular from 2 to 3 inches in that height), been beaten firmly at first, gone over once or twice after the first rain, and watered occasionally in dry weather, we think the sods would have stood instead of crumbling down. We have steps green enough in which the risers are quite perpendicular, but these are not nearly so fine as where slightly on the slope. If you were to have a large enough to reach from the top of the step, beginning at the back, down to the next step, the soil being previously made rather loose on the surface, to lay them when the ground is moist, to beat firm, and to allow an inch or two of slope on the upright part. Our sods in this manner stand well and look well. If you make little holes, say a quarter of an inch deep and half an inch apart, scatter grass seeds in them, and then slightly scratch with a rake, afterwards beating, grass will probably cover the steps in time, but turling would be by far the best course to pursue. Our steps lead to a croquet lawn, and are subjected to much wear and tearing during the season. Allow a little slope and all will be well; it is the roots that hold the turf and keep the soil from crumbling down.

HOTBED ON VINE-BORDER (Tropicus).—You may make a bed of dung upon the Vine-border, and so far from injuring the Vines it will have the contrary effect. The only injury that can possibly result will arise from treading upon the border. There is no danger of burning the roots of the Vines. You cannot possibly make the bed so hot as to do that. Boards should be placed on the border to walk upon.

PROPAGATING-CASE (Idem).—The Bijou and Wardian cases are the best, and they may be had furnished with heating apparatus complete. They are very useful for raising plants from seeds and cuttings, and keeping them in winter. We do not know the prices of them. Mr. Gray, horticultural builder, Danvers Street, Chelsea, would furnish full particulars on request.

HARDINESS OF PLANTS (Idem).—Of the plants named by you, you cannot grow *Dracenas* in a temperature of from 35° to 40°, except *D. austris*, *D. (Cordylus) indivisa*, and *D. Veitchii*; or *Stephanotis*, *Caladiums*, *Eucharis*, *Hoyas*, *Gardenias*, and *Ixoras*; but *Mandevilla suaveolens* will do if not kept wet. The Orange tree will do well. The others must have a stove of not less than 50° in winter, 55° being more desirable. *Caladiums* require a temperature of at least 60°.

GRAFTING ORANGE TREES (H. M. L.).—From the middle of March to the end of April is a good time to graft Orange trees. The most eligible method is inch-grafting; but whip-grafting will also answer. In the latter case the stocks should be plunged in a hotbed of about 70° in the middle of March, and in ten days they will be ready for grafting. It was not necessary to pot the stocks, as doing so only makes them take up more room. The atmospheric heat should be from 50° to 55° at night, and the atmosphere close and moist. Leave on the stock a few eyes above the graft to draw the sap into the scion. Employ whip or side-grafting with a tongue, and in addition to covering with clay, cover with moss over the clay to keep it moist. The best soil for Orange trees is loam from rotted turves a year old, with one-fourth well-rotted manure, adding sand according as the soil is light or heavy, so as to render it friable. Keep in heat until the grafts begin to grow, then cut the head off the stock down to the graft, and loosen the matting, covering, however, again with moss, and after the growth has fairly commenced remove the plants to an airy greenhouse.

GUTTA PERCHA—INDIAN-RUBBER (A. A. Y.).—Gutta percha is obtained from the sap of a tree called *Isanodra gutta*, a native of Borneo and other islands its neighbors. The bark is wounded, the sap exudes, is collected, and soon hardens. Indian-rubber, or caoutchouc, is obtained chiefly from the sap of the *Siphonia elastica*, a tree found in Guiana and Brazil; but there are some other trees which produce it. It is obtained in the same mode as the gutta percha.

GROWING CUCUMBERS IN A FRAME (A Subscriber, West of Ireland).—We think you would have a good crop of late Cucumbers without more artificial heat by proceeding as follows:—Take out another foot of soil from the inside of the frame, and thus make it 3 instead of 2 feet deep, and in June place 2 feet of hot dung in the frame, cover with 3 inches of soil, and place in the centre of each light half a barrowful in the form of a cone with the top flattened. When the mounds of soil are warmed through turn out a couple of plants in each, watering, &c., and in a fortnight cover the whole of the bed 9 inches thick with soil. The linings against the brick wall would do little if any good. To husband the sun heat you must give air early in the morning, and close early in the afternoon; and if it be done so that the heat does not exceed 90° after shutting up, you have not closed too early. A sprinkling of water at the time of shutting up is advantageous, and keeps red spider in check. Keep well watered, but do not soak the soil.

VERONICA SPECIOSA TRAINING—HONEY-SUCKLE STRAGGLING (Idem).—The shoots of the Veronica should be thinned out, cutting away quite closely the weakest, those which have flowered, and the foreright shoots. Leave sufficient shoots to train-in, nailing or tying them so as to cover the wall evenly in every part, and keep them well tied-in as they grow. Do not overcrowd the branches by training them too closely, but allow room between each for light and air. After August the shoots, with the exception of the leaders, may be permitted to hang loose. The Honey-suckle should be trained to the wall, cutting out the old weak wood, and distributing the rest regularly, and not too closely together. In summer remove the straggling growths, and keep those required to fill vacant space neatly nailed or tied-in.

FORWARDING POTATOES FOR AN EARLY CROP (Idem).—You cannot do better than take a box about 3 inches deep and in it pack the sets closely together, eyes upwards; then place it in a corner of your hotbed, and cover the sets with a piece of cotton or old calico. They will soon make sprouts from half an inch to an inch in length; then remove the covering, and take the Potatoes to your dwelling for a few days to harden, and when hardened off plant in the open ground. Do not lay them on the dung and cover with soil; they will root, and be difficult to separate when required for planting, and, besides, it will not do to take them from a hotbed and plant at once in the open ground.

BOIS IMMORTEL (H. G.).—This tree, used so commonly with the Plantain to shade the plantations of the Chocolate nut, we believe to be *Erythrina umbrosa*. We never met with the name *E. coccinea* in any botanical authority. Steudel in his "Nomenclator Botanicus" has no such synonymy. We have no Borneese Flora.

DESTROYING WEEDS ON GRAVEL WALKS (W. H. C.).—As you have tried salt, and do not wish to have the walks tarred, we can confidently recommend the following as the best and cheapest known method of destroying weeds on gravel walks:—Dissolve 1 lb. of powdered arsenic in two gallons of cold rain water, put it in an iron pan over a fire, and stir until the liquid boils, then add nine gallons of cold water and 2 lbs. of crushed soda, stirring all the while until the whole boils, and then keep boiling slowly and stirring briskly for half an hour. Apply the hot liquor to the walks in dry weather by a watering-pot with a rose that will allow of its equal distribution. A good soaking is necessary, but the liquid should not be poured on so long as to run to the grass or Box-edgings. The quantity named is sufficient for thirty square yards. It should be applied before the weeds have grown much, in April or May. To keep it from the Box-edging a board should be laid against this, and inclined so as to throw any water that may fall upon the board on to the gravel, and the same on the other side next the grass, the boards being supported from behind. Where the walks are wide and extensive a water barrel with a tap behind may be used, and a perforated tube to distribute the water, and in this way the work is expeditiously performed. Care should be taken to protect the edging as already directed. Those employing this liquid should be careful to keep it beyond the reach of animals.

ARRANGING FERN CASE (D. Davis).—We do not know where miniature rockwork for Fern cases can be purchased; but you may make it yourself of pieces of porous limestone or sandstone, whichever you can obtain, cemented together. You may form the rockwork according to your own taste. You may have it high at the ends and again in the middle; but it should be confined to one side of the case, and it will then appear to form a background. You must provide a bottom of zinc or sheet lead to the case, and it should incline to one end. There should be a hole there, and a piece of lead pipe furnished with a tap to allow of water being drawn off. We have had a false bottom made of zinc, with a quarter-of-an-inch hole to every square inch. The edges of this false bottom were turned up an inch all round, and a strip of zinc an inch wide was soldered on in the centre. The false bottom being inverted left an inch cavity beneath it; and the water was let off by the lead pipe once a fortnight or so. We find that it answers nearly as well to place on the bottom an inch of sandstone in pieces about the size of a walnut, on these half an inch or so of moss or cocoa-nut fibre, and on this the compost for the Ferns. The water drains from the compost among the stones, and, passing to the lead pipe, is drawn off when necessary. The bottom may have holes in it, and it will answer as well; but to prevent the water dripping on the floor the closed bottom, lead pipe, and tap are necessary. In a miniature pond in the centre you may have a plant or two of *Vallisneria spiralis*; and have floating on the surface a few plants of *Lemna minor*, but not so many as to hide the water. A newt and a few water snails will make all complete.

PTERIS TRICOLOR CULTURE (An Admirer).—We think that your plants have not sufficient heat. In summer they require a temperature of from 65° to 85° to make anything like good growth, and they winter safely in a temperature of 55° from fire heat. In one of 50° they will live, and even in one as low as 45°, but such a low temperature is not good for them. However warm the plants are kept the old fronds will become brown in winter. Bottom heat is not needed, and that, if from 60° to 65°, will do no good, and may do harm by keeping the soil very wet. If you place the plants at the end of next month in a moist growing heat of between 60° and 65° by night, and of 75° and 80° by day, keep shaded from bright sun, and pot them when they require it, we think you will find a difference. Secure good drainage. Your compost is good, providing the peat is fibry brown peat and not dark brown, which when wet is like so much mud, and the loam should be turfy yellow loam. The proportions should be two-thirds of peat, one-third of loam broken or chopped with a spade, but not sifted, with the addition of one-sixth of silver sand.

EGG-PLANT CULTURE (N. B., Glasgow).—Sow the seeds about the middle of March in a compost of turfy loam and one-fourth leaf soil, and place in a hothed of from 70° to 75°. When the seedlings are sufficiently large to handle, prick them off singly into small pots, and continue them in the hothed, giving abundance of air after they become established, and keeping the soil and air moist so as to encourage free growth. When the pots are full of roots shift the plants into pots a size larger, and afford a temperature of from 60° to 75, with air daily, and a position near the glass. A shelf in ainery is as good a place as any. Continue to shift into larger pots as may be necessary, using a compost of turfy loam from rotted torves, and one-fourth rotten manure. Good drainage must be secured, especially at the last potting, which will be from six into eight-inch pots. The plants require plenty of air and a moist growing heat, and being kept clear of green fly and red spider, they will grow freely, flower, and set their bloom; the points of the shoots are then to be pinched out, and the fruit thinned to two or three on a plant. Supply with weak liquid manure at every alternate watering, and the fruit will attain the size of a hen's egg, and the plants may then be removed to a greenhouse, and, indeed, they may be grown there after being removed from the hothed, if kept in a light, moist, and airy situation. The main points are to keep them growing freely until a good plant is obtained, and to keep them free of aphid and red spider in all stages of their growth.

PRINCELA FILICIFOLIA RUBRA NOT FLOWERING (W. A. O.).—This variety is not a shy bloomer; it flowers quite as freely as the white variety, but is later, as the red-shaded varieties invariably are. Do not overpot, but give weak liquid manure in place of too much pot room. Never mind about their not flowering. You will have a fine plant and much finer bloom than were the plants to flower early and whilst small.

CUCUMBER LEAVES INJURED (E. C.).—We have examined narrowly and find no insects on the leaves, and yet we are almost sure that you have thrips on them—a very small insect, long for its width, and which will be sure to jump if you examine the backs of the leaves narrowly. Besides that, however, the leaves exhibit traces of scalding, or burning, which might be occasioned by too much heat in dull weather, and an hour's sun on the leaves whilst they were damp, and before being dried by air. The burning might be caused by the roots being too hot, or coming in contact with the hot pipes for bottom heat, which they might do on one side of your house according to the sketch given; or by a strong heat in the pipes for top heat and no air, as these pipes are coated with sulphur and lime. It is very possible to throw off too strong fumes from pipes thus encrusted with sulphur, and especially at this dull season. When so encrusted the water in the pipes should be rarely above 150°. We by no means infer confidently that this is the cause, as you seem to have abundance of heating power for an eight-feet-wide low span house. We feel sorry that you should have been so troubled after the care you have taken to wash and clean the house. We are still more sorry that we can hold out no prospect of cure, if the leaves generally are at all as bad as those sent. If the plants are strong, the best plan would be to cut off all the leaves and burn them, taking them off close to the stem, but hurting no buds. Daub the cut parts next the stem with a powder formed of lime and charcoal. Let the soil become rather dry. Do not syringe the stems, but keep a moist atmosphere and the usual heat, and give a slight smoking with tobacco, repeated two days after the first, and shade from bright sunshine. If the plants break strongly you may succeed in obtaining a good and an early crop; but there is just the chance that all your efforts will fail, and hence the importance of at once making another sowing. Of course, when the plants break afresh, they must gradually receive the usual quantity of moisture; but a very moist state of the soil, after removing most or all of the large leaves, would prevent the plants throwing out healthy shoots. It is better to feed the stems, as it were, through a moist atmosphere. We have found several times that Cucumbers appearing like yours would do wonders after being treated as above. The stems might be washed with a sponge and clear soft water at 80°. The sponge must be used carefully so as not to injure buds or incipient shoots at the axils of the leaves removed. Once we had a lot of Cucumbers with all the large leaves worse burned in appearance than yours, by means of the bursting of an old fire near them. By removing every leaf larger than a florin-piece, and treating as above, in less than a month the plants bore no trace of the disaster. It would be well, however, to secure fresh plants, as we did.

PRESERVING FLOWERS.—J. B. would be glad to know if flowers should be dried before dipped in glycerine.

APRILEXIS CULTURE (A Notice).—An article will be published shortly.

CHIMONANTHUS FRAGRANS IN POTS (G. S.).—We have flowered the *Chimonanthus* in a pot; but it requires a very large one, good loam, with a little peat, plenty of water in summer, and a warm sunny place in the autumn, and the water to be reduced then to harden the wood. It requires much the same culture as a spurred Currant tree would do, only that the young stubby shoots are what must be looked after and prepared for winter. If a plant has several stems now, and they are bristling with short shoots, these may all be cut in to a bud in the end of March. Ere long they will push; if the shoots come strong, pinch them back, so as to obtain two instead of one. If the shoots produced are of the size of from a crowquill to a goosequill they will be quite strong enough; and if these side shoots grow longer than from 8 to 10 inches nip out the points. Treat them much in the same way as Mr. Rivers treats his fruit trees in pots. If the shoots are too thick to obtain light enough, thin them out. Give all the best possible out of doors in autumn, and as much dryness as the plants will stand, to ripen the shoots. If the plants must stand out in winter protect the roots with litter. As the soil becomes damp and the weather is mild, the buds will expand. When done flowering, prune as before.

INSECTS (Watsonian).—Your larva is that of the well-known and most destructive weevil, *Otiorhynchus sulcatus*. We know no better remedy than that of carefully sifting the earth in your pots and picking out the grubs, which are easily seen from their pale colour. A careful inspection of every pot should be made, and the earth stirred round the base of the stems, as it will be too late to take these precautions when the plants show signs of being attacked, by flagging.—W.

TREES AND SHRUBS FOR A WET HOLLOW (Mrs. F. S.).—For the low-lying ground, formerly a pond, and filled up with stiffish soil, about a quarter of an acre in extent, and which will always be rather moist, backed now by trees on all sides except that fronting the house, which stands on a much higher level, the planting of the old pond must depend something on the trees already round it, and whether it would be desirable to make that harmonise with the other trees or to assume a distinct character of its own. In the latter case a quick and pleasing effect would be produced by using Willows and Poplars for light foliage, either without or in combination with some sombre-leaved Pines, and with an undergrowth of evergreens and other plants if desirable. Thus in such a place, first there might be planted three good plants of the Babylonian or Weeping Willow, one of the White and two of the Duke of Bedford Willow, or *Salix russelliana*; and mixed with these, one plant of *Populus alba*, *P. tremula*, *P. fastigiata*, and *P. balsamifera*. Then the whole undergrowth might be a mass of Laurels, Privet, and Box; or walks might be made through it, and the following arranged in groups, so as to be very attractive, the last-named sorts being kept most to the outside:—Evergreen Oaks, a few *Hellies*, common Laurels, Portugal Laurels, Boxes of sorts, *Aucuba japonica*, *Daphne laureola*, *Arbutus unedo*, *Atriplex halimus*; *Rhododendrons*, if a little peat can be given them, and there is little or no calcareous matter in the soil; *Hypericum calycinum*, or St. John's Wort, and *Laurustinus*, keeping the latter chiefly at the outside. 2nd, if the Willows and Poplars should be too light, you may mingle with them a few Pines, as Spruce Firs, (*Abies excelsa*), *Picea pectinata*, and *Pinus austriaca*, and *rigida*; but if these are encouraged to feather to the ground, nothing else must be planted near them. 3rd, the Spruce Fir, and *Pinus austriaca* and *rigida*, would flourish pretty well in such a place, and would soon form a thicket of themselves; but if the place were desired to look well from the house, and to be a place of resort as well, then if such sombre trees were planted from 30 to 40 feet apart, walks could be carried through the space, and the above evergreens thrown into groups in the open spaces, to which might be added such deciduous plants as Privet, Dogwood, &c. 4th, if the surroundings admit of it, and as economy is your object, we would plant with Willows and Poplars, say from 30 to 40 feet apart, including a few Spruce, and then use Laurels for undergrowth, with a belt of *Laurustinus* for the outside.

NAMES OF PLANTS (H. T. W.).—No. 1 and 2, doubtful; specimens sent insufficient—1, *Gymnogramma Mortensii* (?); 2, *G. ochracea* (?); 3, *Alloaurus (Pellea) rotundifolia*; 4, *Doodia caudata*. (N. W.).—*Theca chinensis*, var. *Bohea*. (J. D.).—We cannot name seeds at sight. 1, *Bauhinia* (?); 2, *Olea*; 3, *Vicia* (?); 4, *Hibiscus*. (W. B.).—1, *Doodia caudata*; 2, *Onychium japonicum*; 3, *Aspidium molle* (?); 4, *Mohria thurifraga*; 5, *Phymatodes peltata*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 17th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 11	29.162	28.702	47	36	47	46	S.W.	.50	Heavy rain; very boisterous, with constant rain.
Mon. . . 12	29.491	29.294	42	24	46	45	W.	.00	Fine; cloudy; fine; frosty at night.
Tues. . . 13	29.759	29.672	44	22	46	45	S.	.00	Fine; clouds; very clear; frost at night.
Wed. . . 14	29.657	29.331	46	24	43	44	W.	.18	Frosty; rain; wet and cold; frost at night.
Thurs. . 15	29.472	29.352	49	35	43	43	W.	.35	Hazy; cloudy; rain.
Fri. . . 16	29.351	29.429	50	32	45	43	S.W.	.24	Rain; constant rain at night.
Sat. . . 17	29.354	29.713	41	17	44½	43½	N.	.12	Overcast; cloudy and cold; clear; sharp frost.
Mean. . .	29.549	29.356	45.57	27.14	44.93	44.21	....	1.39	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

THE ROUP.

HUNTING after some new breeds and varieties, I passed through Germany last summer, and went to a poultry establishment belonging to a nobleman. In the course of conver-

sation I complained of that hane of the poultry-yard, the roup, causing so much heartache to us poultry fanciers in England. The overseer laughed. "Roup! We know nothing about such wholesale destruction as you complain of. Roup! Your fowls at their excrements, that is the most likely cause of it." This idea was new to me. I told him that I had my fowl-houses swept three times a-week thoroughly. "Not enough." "Shall I have it done once a-day?" "No, twice or thrice

a-day—as often as you feed them, and always before you feed them. Those fowls, chiefly, that receive grain will be attacked with roup unless the house, or at least the place on which the grain is thrown, be as thoroughly swept and cleaned as if you polished a looking-glass; otherwise grain may mix with their excrements and the mischief will be done, however little they may pick up with their food. It will be well to sweep the whole house every time, for, when hungry, your birds may begin to pick from the excrements any particle of food not thoroughly digested which may be found in these.”

I repeat the above as I heard it. I have tried the system, and it has answered. During the autumn my poultry yard remained free from the complaint; but, when in December I went on a journey, I saw, when returning, three hens suffering from the roup, and was informed that the person who had taken care of my birds during my absence had “taken it easy,” and frequently deviated from my instructions. I cured two of the sufferers, that had been only slightly attacked, according to the subjoined receipt, which I owe to the same overseer; the third died, its illness having been already far advanced.

He said, “If any of your fowls becomes ill, separate it immediately from the others, and place it in a run, the bottom of which consists of fresh turf. In wet or cold weather take a cage with turf in-doors. The fowl will recover in three or four days, unless the illness has been too long neglected. The roosting upon grass has in all cases the most beneficial effect.”

“A most pernicious effect upon the health of fowls,” he continued, “is produced by rich feeding after their having been on a long journey. Give them nothing by which they may satisfy their blind hunger too fast, no flour, no hard grain, only cut chicken-groats or a small quantity of crushed oats, but, above all, very, very little water on the first day.”—FRANCIS BROEMEL.

TESTING PURCHASED EGGS.

As you are now commencing the insertion of advertisements of eggs for sitting, will you allow me to advise those who purchase them to subject them to the water test before placing them under the hens?

Last season, wishing to have some new blood in my yard, I ordered eggs from an advertiser in your paper: some at £1 1s. per sitting, and others at a lower price. Not one of the highest-priced sitting hatched, although other eggs placed under the same birds did. Upon complaining to the advertiser, others were forwarded; but having my suspicions aroused, they were tried, and found to have been already sat upon, some having chickens in them, others being rotten; so I was saved the disappointment and annoyance of losing the hen's time, but did not think it would be of any avail to make another complaint.

If you insert this notice in your columns you may save others the vexations which always attend the unsuccessful sitting of hens.—A CONSTANT SUBSCRIBER.

[If our correspondent had sent us the name of the vendor of the eggs we would have published it.—EDS.]

WHICH IS THE BEST FOWL FOR THE TABLE?

ARE the Brahma Pootras good birds for the table? Since Dixon's Work (1857) I have seen no comment on degrees of quality of table fowls, which, whilst fit for show-purposes in their class, still may be very useful for the spit, when a defect would preclude their use for aught else. A Game bird is A1; Dorking is A2; but a black-boned Indian fowl (very rare?) for roasting, beats all in my opinion.

Pray give your opinion as to the comparative merits of Brahma Pootras as table fowls, in juxtaposition with their confrères.—PETERBOROUGH.

[The “Fowl of Fowls” for the table is the Dorking. Not only is its meat of marvellous quality, but it has the property of contributing more choice and less coarse meat than any other bird that we know of at present. It has more breast, and its thighs are delicate. The backbone of a well-fattened young Dorking is said to be the perfection of poultry food. It is hard to say which is the second, as opinions differ so much; our own is, that a young Game pullet is A2, but she must be killed in proper condition—i.e., she must not exceed sixteen weeks old; she must have run wild ever since she left her mother; and she must have been dead two days when she is

eaten. The amount of breast on such an one is wonderful; the meat is sweet and high-flavoured, and the only fault ever found is that there is not enough of it. The Spanish chicken is very delicate, and the meat is finer in the grain than any other we know. The Hamburg is also very good. We should put Spanish A3. Two noted breeds are the Cochín-China and the Brahma Pootra, both most useful; but in our opinion the latter the more so. As table fowls they are coarse, and have far too much offal meat about them. They are as a Leicester sheep compared to a nine-stone Southdown. The black-boned Indian fowl mentioned is the filthiest thing to look at as food that we have ever seen. It is by no means rare, being the Silky fowl. It has blue flesh and nearly black bones, and however good the flavour may be (we have many of them, but have never tasted one), we should consider the look so repulsive, that nothing short of starvation would make us eat it.

There are of late two French fowls introduced, both of excellent table quality, the La Flèche and the Crève Cœur. They are high-class birds, but they are not so hardy as the Brahma. They are better birds for the table. The table you ask for should stand thus in our opinion. We class them on their food merits, without reference to their delicacy or strength of constitution:—

- | | |
|----------------|-------------------|
| 1.—Dorking. | 5.—Spanish. |
| 2.—Game. | 6.—Hamburg. |
| 3.—La Flèche. | 7.—Brahma Pootra. |
| 4.—Crève Cœur. | 8.—Malay.] |

GAME BANTAMS.

HAVING read the interesting notes on Bingley Hall Show by our esteemed correspondent “WILTSHIRE RECTOR,” and also the letter of “GALLUS,” with “WILTSHIRE RECTOR'S” reply to it, in “our Journal” of January 30th, relating to these universal favourites, I beg to offer a few remarks on the subject.

Of the four principal varieties of Game Bantams, my experience teaches me that the Black-breasted Reds are the easiest to breed true to feather; next to them, perhaps, Piles; then Duckwings, and lastly Brown Reds; and of these last there is hardly a first-class pen to be seen at any of our shows. Indeed there is still much room for improvement in each of the varieties; and, as “GALLUS” truly remarks, “He may consider himself indeed a lucky fellow who can obtain one good bird from a hatch.” Now “WILTSHIRE RECTOR'S” reply is certainly open enough. I only wish he had not given up Game Bantams, and then he might have agreed with us who find it difficult to reach the higher standard which we now aim at. If he judges the birds he speaks of having seen at his friends' by a comparison with the best birds of some three or four years ago, they might easily be considered all good birds. It is certainly not easy to breed such birds as the Black Red winners at some of our recent shows, and they are very easy to distinguish from the so-called “Game” Bantams that come in flocks to every poultry show. Undoubtedly five-sixths of these birds would be better killed than kept.

With regard to profit I can confidently recommend Game Bantams as being equal to Blacks for producing eggs, both as to number and quality. During the last two years I have never been for a single week without new-laid eggs from my Game Bantams; and the birds when fed up, though small, are as delicious for eating as any variety of fowl. In one sense they are, as “WILTSHIRE RECTOR” says, easy to breed, for, unlike the Sebrights, nearly all their eggs are fertile, and with proper care the chickens are not more liable to death than many other varieties; and last, but not least, it is probable that the most perfect specimens will continue to command as high prices as have ever been paid for them. They are steadily gaining ground, and with “GALLUS” I sincerely hope that they may long continue to hold the high position which they have so justly gained.—W. F. E.

NAMES OF FOWLS.

WRONG names are sometimes given to poultry, and, even if corrected, people persist in using them, because they are adopted in the schedules of prizes of poultry shows. The French fowl “Padoue,” *alias* “Pouland,” is named Poland. So far well—the difference is trifling, but the name, so frequently used, “Polish fowls,” is decidedly absurd. They have as little to do with Poland and Polish poultry as Whitechapel with Cochín-China in Eastern Asia. Why another class of

fowls are called Hamburgs is a riddle to me. I lived fifteen years in Hamburg, and neither in that town nor in the surrounding country are fowls of this kind bred. They were quite unknown in that part of Germany up to 1859.

"Brunnen Pigeons" is another misnomer. The correct name is "Brucen Pigeons," from the town of Brucen, capital of the Austrian province of Moravia. The German word "brunnen" means "a well." The Poultry Club has certainly enough authority to fix the names of poultry, at least in truth to geography and nationality.—F. B.

"WILTSHIRE RECTOR'S" GRIEVANCE.

Do not think the above a sensational heading. It is in a certain sense—a poultry sense—true. Shows as a rule take place in winter, and as a rule (I wish it were rescinded), only in the midland and northern parts of England. Well, these things being so, I am debarred the pleasure of being present at the majority of these charming exhibitions. I like to be at shows, and I like to have my say afterwards. I like to notice where little improvements may be made; and I like to be counsel for the birds, and look after their interests. But how can I in winter travel so far, living as I do in Wiltshire? If I attempted to go to the distant shows there would be a domestic mutiny, perhaps even I should be locked up in my study. But to show that I have a real grievance I take up a Number of "our Journal," and read without alteration the "list of shows." First, Hanley, Staffordshire—too far off. Then Wentworth, Yorkshire—worse still. North British Columbarian Society (Glasgow)—fancy going to Glasgow for pleasure in December! Then comes Heckmondwike—queer name that, I wish I knew its derivation. My "Clergy List" tells me it is in Yorkshire. Yorkshire again! Sensible people live there, surely. Then, next Manchester, where it is said always to rain. Fancy facing smoke and drizzle after a journey of nearly two hundred miles! Then comes the Paisley Show—worse still. Then Fife and Kinross. I should like once more to see Kirkealdy, but—the distance. Aberdeen—well, the granite city and I are old friends, but no renewal of intercourse, please, in midwinter. Next the show at Skye—no, my eye is wrong; it is at Dumfries and Maxwelltown, the braes of which latter place we know are bonnie in summer and autumn, but not later. But what do I read next? Cork and South of Ireland. Fancy crossing the sea in a recent gale! it would have been no gala day to me. Then West Cumberland and North of England—why not South of England? I read then Walsall, Jedburgh, Kendal, and lastly of the Show at Nantwich.

It is clearly impossible for me to be present at any one of these shows. Have I not, then, a grievance? I am, in fact, reduced to Bath and West of England when not held in Cornwall, and a very few small shows near me. By a tremendous effort and screwing-up of courage I went last year to Birmingham, but that was an exceptional case. I heard a whisper of a show to be held at Cheltenham, but the whisper has died out. I know of several friends who would exhibit there, but Cheltenham makes no sign. On the Great Western there surely might be a show or two. Why not one at Windsor? The king of Light Brahmas lives near—Mr. Pares. Then the pens could be hired, as was the case at Calne, from Devizes, which 's on the same line of railway, and London fanciers would be sure to send their birds. There is also Swindon, easy of access, and abounding with fowl-loving mechanics. Or there's Reading. Or, again, why not have a show at Oxford? Numbers of the undergraduates would attend.

I hope this appeal will meet with a response. I do not myself exhibit, because my sense of fairness as a writer will not allow me to do so; but I will try and induce all my poultry friends to send to such show or shows, and shall be delighted to attend and record my impressions. It is too bad that the north-men should have all the pleasure to themselves. I am jealous, and feel myself a badly treated—WILTSHIRE RECTOR.

P.S.—Wherever there is a poultry show I plead that there be a Pigeon show as well.

EGGS HATCHING AFTER BEING CHILLED.—Some of your readers may be interested to know the following circumstances:—I set a White Cochins-China hen upon eleven eggs on the 9th ult.; she had been sitting eight days, when, by accident, she was shut off from her nest the whole of one night, upwards of twelve hours. On the 31st, she hatched eleven chickens.—H. J. Lucas, *The Rectory, Edith Weston.*

ROCHDALE POULTRY SHOW.

Your correspondent in the Journal of February 6th, gives such a favourable account of the Poultry Club's National Show, that those who were not lucky enough to be present, would naturally suppose that the Show was a great success. My impressions were not so favourable. The room was calculated to hold about five hundred pens of birds, whilst about one thousand were attempted to be exhibited. I say "attempted," because when one class is shown in as many as three different parts of the room, fair judgment seems hardly likely to be attained. Some exhibitors found their birds so unfavourably placed (owing to the overcrowded state of the place), that they were not surprised their birds were not noticed in the prize list, although they were breeders of many years standing, and certainly ought to know what birds should be considered up to the mark. Complaints of unfair treatment of pigeons have been sent to you. What steps have the Poultry Club taken to discover the perpetrators of this outrage? If the Poultry Club make themselves responsible for another show, it is to be hoped they will take care to have room enough for the fair arrangement of all the classes, and provide servants who can handle Pigeons without mutilating their feathers. There is only one feature in the Show which is at all to be commended—viz., making the pen consist in all classes of one bird of each sex.—AUDI ALTERAM PARTEM.

JUDGES AND JUDGING IN SCOTLAND.

Now that poultry shows are over for the season, allow me to make a few remarks on the above subject. Some time ago I asked an old exhibitor if he was going to show at Paisley. "No," he said, "I have been once too often there." Well, I did not think anything unfair would be done: so I entered a few pens, and sent them in due course—the very best I had; and those who happen to know my birds would speak of their merits in no disparaging manner, I think. After the show I received my birds and a catalogue, and found that I had not obtained a single notice. I thought I would see who had been judging, when I found such a host of names, that one would have thought they ought to have judged properly. To complete my surprise, I found that a pen which I had just sold, and which exhibited nothing like the size of markings or the quality of the birds which I had sent, had won a prize.

I may mention another Show (Jedburgh), at which the decisions perfectly astounded some old and experienced exhibitors from England; and I may also name that at Kelso. Some birds arrived too late for competition; but a gentleman on the spot ascertained what position one pen that arrived late would have held in the prize list provided it had been in time, when he was informed that it would have taken no position at all; for, said the gentleman writing (and I have his letter before me now), he (the Judge) prefers small-spotted, light hens before large spangled ones. If such is the opinion of any "Judge" of Hamburgs, the sooner he takes a look through all the principal Shows in England the better; and he should also obtain a copy of the "Standard of Excellence," that he may be better qualified next time he goes from home.

I write with all kindly feeling towards the Scotch fanciers, but my name for one will not appear in their catalogues again unless I hear of some better Judges being appointed. I am now like my friend, I have been once too often north, unless the change alluded to be made. If the Committees are not acquainted with good and experienced Judges, let them ask you or the Poultry Club, and I am sure you will give them every information in your power.—JUSTICE.

VULTURE HOCKS.

The letter of "Y. B. A. Z." on this subject deserves the most careful attention of all Brahma breeders. That there is a strong and growing objection abroad against any approach to the profuse feathering at the hock is very obvious. Though not a dealer, I have frequent applications for my birds, and almost every letter that I receive contains this strict injunction "Be sure not to send any that are vulture-hocked!" One correspondent, who has been a very successful exhibitor, actually remarked "A bird cannot be a true Brahma if it has the vulture hock!" If this objection be allowed to remain, and to sway the decision of judges at our poultry shows, then farewell

to the finest and most admired specimens of this rising breed.

I have recently visited the yards of some eminent Brahma breeders, where in former days I have seen some of the finest specimens of this class that were ever exhibited. Such size, colour, symmetry, abounding fluff, and withal legs remarkably short and profusely feathered, that amateurs like myself came from afar to see them, and their fame rang over the country. Great pains were taken, I know, that all the birds reared in these yards should be after this particular type. Had a cockerel then appeared with an exposed hock joint, and a scantily feathered leg, I knew his fate; he would have been summarily delivered over to the hand that holds the knife. Conceive my surprise in my late visits, at finding that in consequence of the strong prejudice against vulture-hocked Brahmas that has recently sprung up, nearly the whole of the magnificent stock in each yard had disappeared. A few poor cockerels remained in one place, like the last remnant of a once noble and illustrious family whom the hard hand of misfortune has struck down in the world, and I observed that they were in close confinement, evidently under capital law.

In their walks I saw another race moving about, looking very ragged about the legs, which to my eye appeared provokingly long, and as to the hock joint, instead of being gracefully begirt with feather, it was quite bare and rudely exposed, making the birds look exceedingly ugly, wretched, and beggarly.

I inquired for some of the splendid stock that I had seen before, and found that one was sold for a mere trifle, a second was given to a lady to run with some common hens, and a third, *horribile dictu*, was drawing near to his end, his death-warrant was signed. He was vulture-hocked! This was really a magnificent bird. I felt like the good, honest fellow who has the charge of the poultry, very sorry for it. Poor old John was almost in tears. "You cannot think Sir," he said, "how much it has put me about." "My master has a mind, I know, for them vulture-hocked, and he hates the sight of the new sort, but he says as how it's like this. You see it's the law, and he can't help it." "Well, Sir, it's a great pity, and master will be sorry enough for it by-and-by, that he will, and it will just sarve him right."

Some may be curious to know if the hock feathers of this bird that was doomed to die were long and stiffly set. By no means, they were rather soft, and curving about three parts of an inch.

With anxious concern I inquire, Must all the pains that have been taken, and the expense that has been incurred in bringing our birds to such high perfection, be set utterly at naught, simply because a new whim has possessed the brain of some "able judge, or judges?"

But may not this dire evil be averted? I feel confident that it may. I do not suspect that more than one or two of our able judges are thus prejudiced, and if a few of our most celebrated breeders would avail themselves of the open columns of this Journal to express their views upon the matter, I doubt not that the silly prejudice which has gone abroad would be arrested, and shivered and scattered to the winds. If, however, it be left to just two or three to wield their pen in defence of the true and the right, depend upon it nothing will be done. *Fox populi* will command the attention of the judge or the judges who have occasioned this grievance, and I have too much respect for their good sense to imagine for one moment that they will persist in setting our wishes at defiance.—JUSTITIA.

EXPENSES AND RETURN OF POULTRY KEEPING.

AT page 118 "C. E." solicits suggestions upon this subject. Now, in the first place, the statement shows the total number of birds fed in the year to be 5875=per week 113, and surely there must be some error in these figures, for the food expenses appear to be very much too little for the large number, and too large for the small number. The error appears to me to have occurred by not having divided the total 5875 by 12 (as each month's stock for the twelve months is separately stated); this would give an average of about 489 birds always on hand, and a number more likely to be maintained at the cost named. Are we to understand the £8 7s. 6d. is only for stock bought?—and does it include the value of the stock in hand at the commencement of the year?—and, as the wickerwork and pans no doubt are still in use, they should be brought to the credit of profits for whatever they may be worth. I am sure, from

my own experience with keeping poultry, that this, if we may so call it, balance sheet, does not fairly represent what are the real profits upon such a large stock, more especially if we have to add the charge of 1s. per day for labour; for that would then add £15 to the expenses of the year, and show a positive loss of £9, which, I am sure, was not "C. E.'s" intention. I have often proved, by accurate accounts, that with poultry kept either on a large or small scale, and properly managed, a profit of from 40 to 50 per cent. can be shown. I should like "C. E." to give us, what evidently was his intention, a statement that will show that poultry keeping is not only a pleasant pastime, but also a profitable one.—CADBURY.

CRYSTAL PALACE BIRD SHOW.

As regularly as the earth revolves on its axis, so do our national shows come round; among which, and of no small importance, is that of British and Foreign Birds at the Crystal Palace, which commenced on Saturday last. We have watched with interest the gradual development of this annual Show, and we have no hesitation in saying that it has reached a degree of perfection unequalled by any of its class. The present display is pronounced by the Judges to be unsurpassed by any of its predecessors, and such an one has never before been witnessed. We do not envy the Judges the onerous task which they must have had to award the prizes to such a collection.

The birds, with a few exceptions, are in magnificent plumage and condition, and prove with what care the respective owners must have attended them. Among the British birds some very splendid specimens are noticeable of the Bullfinch and Goldfinch. The Robin, Blackbird, and Thrush have praiseworthy representatives. In the varieties of British birds are a curiously pied Lark and a pied Linnnet. The Warbler class has representatives in fine specimens of our beautiful little songster—the Nightingale.

There is a goodly group of Foreign birds, among which are some fine Grey and other Parrots. All the known varieties of the Waxbills may be seen at this Show, as also several Java Sparrows, Virginian Nightingales, and Cardinals in unrivalled plumage.

With reference to the Canaries, the Norwich class is very good, but the Belgians are not so numerous as formerly, nor are they quite up to the standard with respect to beauty of form and condition. The Lizards are numerous and fine. The class of Jonque Goldfinch Males is very superb, and several groups of Canaries in cages containing six of each class must be seen in order to have any adequate idea of their beauty.

The management deserves the greatest praise for the excellent manner in which the exhibition is arranged and carried out.

CANARIES.

NORWICH (Clear Yellow).—First and Extra Prize, G. Y. Collinson, Thorp Hamlet, Norwich. Second and Third, J. Pullen, Shoreditch. Very Highly Commended, F. Willis, St. Martin's-at-Oak, Norwich; J. Pullen. Highly Commended, F. Willis; W. Walter, Winchester; G. Y. Collinson; J. Pullen; J. Judd, Newington Butts. Commended, F. E. Colman, Clapham Common; T. Newmarch, Old Street Road, St. Luke's; J. Judd; R. Mackley, St. Mary's, Norwich; O. Lipscombe, Westbourne Grove, Bayswater. (A very superior class.)

NORWICH (Clear Buff).—First, G. Y. Collinson. Second, F. Willis. Third, J. Pullen. Very Highly Commended, F. Willis; G. Y. Collinson; J. Pullen. Highly Commended, W. Walter; J. Judd. Commended, C. J. Ayre; W. Walter; O. Lipscombe. (A first-rate class.)

NORWICH (Variegated or Marked Yellow).—First and Second, G. Y. Collinson. Extra Prize, G. J. Barnesby, Derby. Very Highly Commended, F. Willis; G. Y. Collinson. Highly Commended, G. Y. Collinson; W. Walters. Commended, S. Tomes, Southampton; G. E. W. Rawlinson, Gloucester; W. Walter; J. Judd; R. Mackley; O. Lipscombe.

NORWICH (Variegated or Marked Buff).—First, T. Banfather, Norwich. Second, F. Willis. Very Highly Commended, G. Y. Collinson; W. Walter; J. Judd. Highly Commended, G. Y. Collinson; W. Walter; T. Newmarch.

NORWICH (Crested, or any other variety).—First and Second, G. Y. Collinson. Very Highly Commended, W. Walter. Highly Commended, T. Banfather. Commended, S. Tomes; J. Judd.

BELGIAN (Clear Yellow).—First, W. Phillips, Old Basford, Notts. Second, T. Roper, Lambeth. Third, T. Smith. Very Highly Commended, J. Butler, Sunderland; T. Roper; O. Nicholson; J. Judd. Highly Commended, H. Marshall, Durham; J. Rutter. Commended, H. Marshall; J. Rutter; J. Grimani. (A good class.)

BELGIAN (Clear Buff).—First, W. Phillips. Second, J. Doel, Plymouth. Extra Prize, W. Vie, Derby. Very Highly Commended, J. Rutter; L. Corti, Bath Street, City Road; J. Judd; W. Phillips. Highly Commended, L. Corti; J. Doel; A. Dalton; T. Roper. Commended, L. Corti.

BELGIAN (Variegated, or Marked Yellow).—First, O. Nicholson. Second, J. Rutter. Commended, T. Roper.

BELGIAN (Variegated, or Marked Buff).—First, A. Roper. Second, T. Roper. Very Highly Commended, H. Marshall; W. Phillips.

BELGIAN (Crested, or any other variety).—First, H. Ashton, Prestwich. Second, W. Walter. Very Highly Commended, G. J. Barnesby. Highly Commended, T. Newmarch; W. Williams; W. Walter. Commended, T. Newmarch; J. Baum, Crystal Palace.

LONDON FANCY (Jonque).—First, J. Waller, Tabernacle Walk, Finsbury. Second, J. Judd. Highly Commended, J. Waller. Commended, J. Judd.

LONDON FANCY (Mealy).—First, J. Waller. Second, J. Judd. Highly Commended, J. Waller; J. Judd. Commended, J. Waller.

GERMAN, OR ANY OTHER VARIETY EXCEPT NORWICH OR BELGIAN.—First, W. Walter (German). Second, W. Barnes, Cannon Street, E.C. Extra Prize, S. Tomes (Jonque, Variegated, Cinnamon). Highly Commended, W. Barnes; W. Walter. Commended, T. Newmarch; J. Pullen.

LIZARD (Goldeo-spangled).—First, G. Harrison, Canterbury. Second, J. Waller. Extra Prize, W. Williams, Nottingham. Very Highly Commended, G. Harrison; J. Waller; W. Williams. Highly Commended, L. Corti; J. Waller. Commended, H. Ashton; Rev. V. Ward; H. Wingfield, Horselydown; J. Pullen.

LIZARD (Silver-spangled).—First, G. Harrison. Second, J. Tarr, Thornhill Place, Caledonian Road. Extra Prize, W. Williams. Very Highly Commended, F. W. Fairbrass, Canterbury; G. Harrison. Highly Commended, G. Harrison; J. Tarr; P. Flexney, Caledonian Road; T. Newmarch; J. Waller. Commended, Rev. V. Ward, Canterbury. (Very good class.)

JONQUE CINNAMON.—First, J. Wynn, Northampton. Second, G. Y. Collinson. Very Highly Commended, S. Tomes; G. Y. Collinson. Highly Commended, H. Marshall. Commended, J. Wynn; W. Gamble, Northampton; J. Waller; C. T. Ayre, Sunderland. (A very superior class.)

BUFF CINNAMON.—First, J. Waller. Second, W. Walter. Very Highly Commended, J. Wynn. Highly Commended, W. Gamble. (A good class.)

MULE (Jonque Goldfinch).—First, H. Ashton. Second, J. Doel. Extra Prize, H. Marshall. Very Highly Commended, R. Marshall; J. Doel; W. H. Morgan, Plymouth. Highly Commended, H. Marshall; H. Ashton. Commended, J. Baum. (A first-rate class.)

MULE (Meady Goldfinch).—First and Second, H. Marshall. Extra Prize, J. Judd. Very Highly Commended, F. E. Colman; J. Doel. Highly Commended, G. Harrison. Commended, J. Judd; R. Mackley.

MULE (Any other variety).—Prize, H. Marshall. Extra Prize, O. Nicholson. Very Highly Commended, G. Moore, Havelock Terrace, Northampton; H. Ashton; W. Barnes; J. Judd. Highly Commended, W. Gamble; F. E. Colman.

SIX NORWICH IN ONE CAGE.—First and Third, G. Y. Collinson. Second, J. Judd. Very Highly Commended, W. Walter; G. Y. Collinson. Highly Commended, J. Grimani; T. Newmarch; J. Judd; R. Mackley. Commended, W. Walter; G. Harrison; T. Newmarch.

SIX BELGIANS IN ONE CAGE.—First, T. Roper. Second, J. Doel. Third, J. Judd. Very Highly Commended, J. Judd. Commended, A. Isaacs, Prince's Street Leicester Square; T. Newmarch.

SIX GOLDEN-SPANGLED LIZARD IN ONE CAGE.—First, F. W. Fairbrass. Second, T. Newmarch. Third, G. Harrison.

SIX GOLDFINCH MULES IN ONE CAGE.—First, H. Ashton. Second, W. Walter. Third, J. Doel. Very Highly Commended, J. Judd. Highly Commended, J. Doel. Commended, W. L. Chapman.

BRITISH BIRDS.

BULLFINCH.—Prize, H. Vide, Castle Street, East Cowes. Equal, W. Gamble. Very Highly Commended, T. Newmarch; C. Carver. Highly Commended, G. Moore; T. Newmarch; C. Carver; W. Walter.

CHAFFINCH.—Prize, J. Knibb, Northampton. Very Highly Commended, J. Palmer, Upper Norwood. Highly Commended, H. Ashton.

GOLDFINCH.—Prize, S. Hinds, Deanmont Street, Manchester Square. Extra Prize, H. Vine. Very Highly Commended, J. Grimani; J. Judd; Capt. C. H. Fisher; J. Pullen. Highly Commended, J. Judd.

LINNET.—Prize, H. Marshall. Very Highly Commended, D. Carver. Commended, W. Walter.

SKYLARK.—Prize, J. Judd. Very Highly Commended, J. Judd; J. S. Beaton, Rochester. Highly Commended, W. Walter; J. Pullen.

WOODLARK.—Prize, W. Walter. Very Highly Commended, J. Crew, Plumstead. Highly Commended, T. Newmarch.

ROBIN.—Prize, W. Miller. Very Highly Commended, T. Newmarch; J. Crew. Highly Commended, J. Crew. Commended, J. Palmer.

BLACKBIRD.—Prize, F. S. Vine. Extra Prize, W. Newman. Very Highly Commended, J. Knibb; G. W. Teasdale; D. Carver.

SONG THRUSH.—Prize, H. Vine.

STARLING.—Prize, H. Vine. Highly Commended, J. Judd.

MAGPIE.—Prize, W. Walter.

ANY OTHER VARIETY.—Prize, H. Marshall. Extra Second Prizes, T. Newmarch; O. Nicholson; J. Kennard. Very Highly Commended, J. H. Elliott, Sydenham Hill. Highly Commended, J. Pullen; J. Palmer.

BIRDS OF PASSAGE AND MIGRATORY BIRDS.

NIGHTINGALE.—Prize, W. Hawtrey. Extra Prize, H. Johnson. Highly Commended, Miss H. Maunder, Pinner, Middlesex; C. F. Johnson, Blackfriars Road.

SISKIN OF ABERDEVINE.—Prize, J. Judd. Very Highly Commended, W. Walter; H. Ashton. Highly Commended, J. Judd.

TITLARK OF TREE PIPIT.—Prize, J. Pullen.

ANY OTHER VARIETY.—Prize, L. Fraser.

FOREIGN BIRDS.

COCKATOO (Lemon or Orange-crested).—First, G. Boswell. Second, M. George. Commended, T. Newmarch.

COCKATOO (Lead-heater or Rose-breasted).—First, J. Judd. Second, A. Isaacs. Very Highly Commended, A. Isaacs; Mrs. M. Williams.

PARAKETS (Grey).—First, J. Judd. Second, A. Isaacs. Very Highly Commended, W. Walter; F. Rawlings, Dalston. Highly Commended, W. Wichelow, Mile End Road; F. Woodgate, Norwood.

PARROT (Green, or any other variety except Grey).—First, J. Baum. Second, W. Westbrock. Third, F. G. Dutton. Very Highly Commended, J. Judd. Highly Commended, A. Isaacs; J. Baum. Commended, A. Isaacs; A. W. Booker, Liverpool.

LOVE BIRDS.—Prize, J. Judd. Extra Prize, G. Billett. Very Highly Commended, T. Newmarch. Highly Commended, W. Walter.

AUSTRALIAN GRASS PARAKEETS.—Prize, Mrs. H. White. Extra Prize, W. Walter. Very Highly Commended, T. Newmarch; Mrs. H. White, Hyde Park; J. Judd. Highly Commended, T. Newmarch; A. Isaacs.

PARAKEETS (Ring-necked or Congo).—Prize, F. G. Dutton. Very Highly Commended, W. Williams. Highly Commended, J. Baum.

PARAKEETS (Any other Variety).—Prize, A. Isaacs (Turquoise). Very Highly Commended, Rev. A. Johnson (Stanley).

PARROTS (King's).—Prize, A. W. Booker. Very Highly Commended, A. Isaacs.

PARAKEETS (Rosehill).—Prize, J. Baum. Commended, J. Judd.

PARAKEETS (Pendant's).—Prize, J. Baum.

COCKATEALS.—Prize, J. Judd. Very Highly Commended, J. Baum.

LORY (Any Variety).—Prize, A. Isaacs.

SPARROWS (Diamond).—Prize, J. Judd.

SPARROWS (Coral-necked).—Prize, J. Baum.

SPARROWS (Java).—Prize, H. Vide. Extra Prize, W. Walter. Extra Prize, J. Judd. Very Highly Commended, T. Newmarch; J. Judd. Highly Commended, W. Williams; J. Judd.

NONPARRELS.—Prize, C. T. Bell.

INDIGO BLUE BIRDS.—Prize, J. Judd.

BISHOP BIRDS.—Prize, J. Judd.

WAXBILLS (Zebra).—Prize, Mrs. La Touche. Extra Prize, J. Baum.

Very Highly Commended, Rev. A. Johnson. Highly Commended, J. Baum.

WAXBILLS (Orange-checked).—Prize, J. Judd. Highly Commended, J. Judd.

WAXBILLS (Any other Variety).—First, W. Walter. Second, J. Judd.

Third, J. Baum. Very Highly Commended, J. Baum. Highly Commended, G. Billett, Southampton; Miss H. C. Brown, Forest Hill; J. Baum.

NIGHTINGALES (Virginian).—First, G. Billett. Second, T. Newmarch.

Third, Mrs. H. White. Very Highly Commended, T. Newmarch; Mrs. La Touche, Upper Brooke Street. Commended, T. Newmarch.

CARDINALS.—Prize, J. Baum. Very Highly Commended, J. Baum.

Highly Commended, G. Billett.

WHITAI BIRDS.—Prize, G. Billett. Commended, J. Baum.

PIPING CROWS OF AUSTRALIA.—Prize and Highly Commended, L. Fraser, Knightsbridge.

FIRE FINCHES.—Prize, J. Baum.

ANY OTHER VARIETY.—First, T. Newmarch (Brezben Finch). Second, J. Baum (Saffron Finch). Third, W. Walter (Madagascar). Very Highly Commended, Mrs. La Touche; J. Judd; L. Fraser. Commended, L. Coesers; J. Judd.

PHASANTS (Gold and Silver).—First and Second, L. Fraser.

PHASANTS (Any other variety).—First and Second, M. Luce (Chinese Ring-necked and White Phasants).

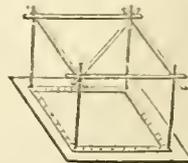
JUDGES.—*Canaries*:—Mr. T. Moore and Mr. A. Wilmore. *British and Foreign Birds, and Phasants*:—Mr. W. Goodwin.

HIVES—BEES' NIGHT EXCURSIONS.

BEFORE swarming-time, I had two Woodbury bar-and-frame hives, made of straw, on wooden frames, by our basket-maker, who, though not a hive-maker, had made me some of Payne's cottage hives (two or three years previously). I gave him my notions of how he should set about making them. However, he did not take my hints; and although the hives could be used, they did not suit me, for the corners were far from square at the bottom, indeed more than an inch intervened in some places between the frames and sides of the hives, so that I hardly thought of having any more made. However, after reading "M. D's." various communications on what he calls his "native hive," which seems to me to be exactly like mine, I thought I would have another trial this winter, and was determined that my own ideas of the mode of manufacture should be carried out; and as these hives have turned out to be greatly superior to those made before, I trust some details may be of use to some of our bee-keeping friends.

Have a frame made of wood fully 1 inch thick, exactly like the top of a Woodbury hive, and 2 inches deep, dovetailed and pinned. Let the bottom edge be made somewhat concave, so that the round band of straw, when sewn to it, will fit into the concavity. Have quarter-inch holes bored about half an inch above this edge, and straight through the wood all round for the stitches to pass through, and about 1½ inch apart. Then take a flat piece of wood, somewhat larger than the frame, place your frame on it, with the lower edge upwards; have four pieces of quarter-inch iron wire as straight as you can select, and about 15 or 16 inches long, square-pointed at one end; and drive one of these wires into the board close within each corner of the frame (this is not well represented in the engraving), and perfectly upright. Next make five laths of wood, boring quarter-inch holes at the end of each lath at proper distances, to hold the top ends of the wires apart; four of these laths go from wire to wire all round, and the fifth is made to go diagonally across. These laths will hold the wires rigid, and on this frame the hive is made. The wires keep the straw in its proper place, and allow it to be pulled sharply round them, so as to obtain a good square corner; the straw requires to be beaten a little at the corners to bring it into good shape at each turn. With this contrivance, a young man who tried to make a common hive, and produced a very sorry article, has made me three good square straw hives, fit to look at; indeed, little or no skill is required, excepting the keeping the band of straw of a proper thickness, for the wires make capital guides, and bear pulling at, so as to make the stitching very firm. The ring used to keep the straw of a proper thickness is a section of a cow's horn, about 2 inches long; this being slightly conical, is much better than a simple iron ring.

Almost any one, with a little patience, may by adopting the above plan make very good square Woodbury hives; and if the



bar hives are wanted, the holes in the laths may be a little closer together, so as to have the hive somewhat less at the bottom than at the top. This will facilitate the taking out of the combs, and also prevent any risk of their falling, if accidentally separated from the bars, the hive being like the Grecian, somewhat conical, only square instead of round.

So much for hives. Now for uniting bees. I have united bees many times, and have succeeded well; however, to my cost, I find that if you unite bees to a hive having a super on it in which there are bees and combs, a civil war will be the consequence; therefore, I say, never unite fresh bees to a hive having a super on it, or being in two or more compartments.

On more than one occasion I have heard great commotions in some of my hives late at night, when it has been only starlight: there being no moon above the horizon, and several bees have taken flight whilst I have been listening, but I never could make out the reason for it. Could it have been queen encasements? I find one such occasion in my note book on the 1st of May, 1862.—C. F. GEORGE.

MR. LANGSTROTH, THE INVENTOR OF FRAME HIVES.

FOUL BROOD IN CALIFORNIA AND THE ATLANTIC STATES.

It may be remembered, that in THE JOURNAL OF HORTICULTURE of January 24th, 1865, I expressed the opinion that Mr. Woodbury had unintentionally failed to do me justice with respect to my indebtedness to the German apiarian. Having recently read with care all the back Numbers of the Journal from 1859, I have now to thank him for his liberal appreciation of my apiarian labours, even when he supposed my hive to be only a modification of a German invention. If I needed any other evidence than this of Mr. Woodbury's intention to do me full justice, his manly and straightforward discussion of the subject of foul brood, under circumstances which would have prompted an unfair man to disingenuous courses, clearly shows him to be incapable of withholding proper credit from any one.

That Mr. Woodbury may have a more complete idea of the progress of my invention, I have sent him the first edition of my work on the "Hive and Honey Bee," published in the spring of 1853, and the second edition published in the spring of 1857. One of the most important features of my hive was invented and fully tested in 1850, and the whole thing was brought to such a state of completeness in 1851, that I applied for a patent in December of that year, which patent was issued in October, 1854. The frames of the Baron von Berlepsch are first mentioned in the "Bienenzeitung" (supplement to), November 5th, 1853, in which he claims to have had them in use since 1843, in a kind of hive which he calls his "Rahmenlutter (frame-ventilator). This hive he must have deemed of no practical value, or he would not, after his famous visit to Dzierzon in the disguise of a Bavarian peasant, have abandoned its use and recommended in the highest terms the Dzierzon hive. He does not say how these frames were made or used, but he certainly could not have considered them better than those which he subsequently introduced as an improvement on the Dzierzon hive; at any rate the public knew nothing of his prior invention, whatever it was.

It will be seen from these facts, that long before the Baron had announced his forthcoming hive, my own was both invented and patented, and the first edition of my work will further show that its essential features were there given, together with a very full explanation of the various processes by which I accomplished such important results in the practical and scientific management of bees. I may also add, that in 1852 a large number of my hives were publicly used by myself and others. That the Baron could not have copied from my invention, of which unquestionably he had not the slightest knowledge, will be evident, not only from his high character for honourable dealing, but from the widely different plan upon which he inserted his frames in the hive; some of the disadvantages of which plan I will venture now very briefly to describe:—

1. The Berlepsch hive opening on one side instead of the top, makes it impossible to examine or remove any frame without first loosening and removing all the frames between it and the side door. Having used hives with such an arrangement side by side with those opening at the top, I believe that at least three of the latter can, on an average, be opened and examined to one of the former.

2. The Berlepsch hive making no provision for adjusting

the distances between the frames at will, does not so readily as with mine allow the relative position of the frames in the same hive to be changed, or facilitate the free exchange of frames from hive to hive.

3. The Berlepsch hive by making the top bars of the frames too close-fitting to the case which contains them, and parts of both the top and bottom bars of the frames close-fitting to each other, causes them to be soon glued by the bees so fast to the case and each other as to interfere very seriously with their easy removal from the hive.

4. The Berlepsch hive making no provision for the removal of the surplus honey, except in frames taken from the main body of the hive, the purity of the honey is very often affected by being mixed with bee-bread, or being deposited in cells previously used for breeding-purposes.

In making these criticisms upon the hive of so distinguished a man, I have not the slightest desire to depreciate the eminent services which the Baron has rendered, by his writings, to the cause of practical and scientific bee-culture.

After Mr. Woodbury's woful experiences with foul brood, he will be glad to learn that a Pennsylvanian has discovered, as he thinks, a cheap and effectual cure for this pest of bee-keeping. If this remedy after the most thorough trial should prove efficacious, he will by communicating it to the public be able to confer upon bee-keepers a boon of priceless value, and we shall all be ready to hail him as the "Pennsylvanian Bee-Friend." In California, where bees were introduced only a few years ago, and where they found, as in Australia, a honey paradise, this terrible distemper has in many places nearly destroyed all pleasure and profit in their cultivation. Its ravages in the Atlantic States are increasing, as I frequently hear of its breaking out in places where, until recently, it was wholly unknown.—L. L. LANGSTROTH, *Oxford, Ohio.*

[In thanking Mr. Langstroth for the very high compliment he has paid me, I can with truth assure him, that he does me no more than justice in believing me to be incapable of wilfully withholding from any man that credit which is fairly due to him. I am in receipt of the two early editions of his "Practical Treatise on the Hive and Honey Bee," to which he refers, and which fully bear out all that he has above stated with regard to the time at which he gave practical application to the principle of the frame hive, whilst I can most cordially endorse all that he advances with regard to the superiority of his hive over that of the Baron von Berlepsch.

I much regret to learn that that fell destroyer, foul brood, is ravaging the hitherto prosperous apiaries of California and the Atlantic States, and most sincerely do I trust that the remedy of the "Pennsylvanian Bee Friend" may turn out a "perfect cure," and that he will worthily deserve his title by making it public. Should he do so, I hope Mr. Langstroth will at once communicate it to "our Journal," and by so doing add another to the many obligations which, by his writings, he has already conferred on British apiarians.—A DEVONSHIRE BEE-KEEPER.]

A CURE FOR BEE DYSENTERY.

I CAN neither agree with those who imagine that dysentery is caused by a large consumption of food during the winter months, nor with those who think there is no cure for the malady, bad as it is. Last winter I placed two stocks with their entrances towards the north, and the two consumed only 12 lbs. of honey, yet they had dysentery very badly indeed. Its cause was dampness, occasioned by the rain finding its way through badly-made covers. I tried different remedies, but to no purpose. At last I resorted to the remedy referred to by Mr. Everest, and the result was a complete cure.

This winter I placed three stocks, all in Woodbury frame-hives, in a bee-house with a southern aspect: one of them was left unventilated, and the result was dysentery. Upon examination no one could doubt the cause, which was evident from the quantity of condensed vapour on the glass and mildew on the combs and on the sides of the box. Upon removing the floor-board I found hundreds of dead bees upon it, many of them lying in a pool of matter which had, doubtless, escaped from their bodies upon bursting. This was on the 17th ult. I immediately gave them a clean floor-board, and applied the remedy. I was unable to look at them for eight days, when I found the floor-board in a very dirty state, but only about a dozen dead bees upon it; there was, moreover, scarcely any wet dirt, nearly all being dry, and some days old. I gave them another clean floor-board, and upon examining them two days later I found but

one dead bee, and a few, I think eight, spots of dysenteric dirt. My bees, therefore, which about a fortnight ago were in the worst possible state from dysentery, are now as well as ever, and more lively than either of the other stocks in the same house.—Z. B.

[We should be glad to receive information as to the nature and mode of application of the remedy you employed.]

BEE FOUNTAINS.

In one of the old hand-books is the suggestion that a tumbler filled with water, and turned upside down upon a plate, is a convenient and cleanly mode of watering bees; but that the water soon becomes bad, and must be changed every day. It at once struck me that this frequent change is quite unnecessary, and that a fragment of pondweed, especially if rooted, would keep the water sweet for any length of time. The time of year was not very favourable for an experiment of the kind; nevertheless, in the middle of November, I filled a tumbler with spring water, put into it a slip of *Chara vulgaris* unrooted, and, reversing the glass upon a plate, placed it in a window, and left it to take its chance. After rather more than two months, during which the loss by evaporation has been once supplied, I find the plate covered over with a beautiful confervoid growth (which of course would allow of the larger weed being removed), and the water is as sweet as on the day it was put in. This must be a much neater and more cleanly arrangement than the shallow pan, in which not only much dirt accumulates, but the bodies of many bees, which are drowned from time to time notwithstanding the pebbles. If the supply of water from under the rim of the glass is not sufficient, it can be increased by inserting a bit of straw or shaving. The confervoid growth should be allowed to remain, unless it increase very fast. A propagating-glass would allow of a larger body of water, and so would not require to be filled so often; and if the plan really answers in practice, there are many ways of making the little apparatus pretty and ornamental by those who are so inclined.

In connection with this matter, is it quite certain that the idea current in the Isle of Wight and elsewhere that the bees go down to the sea twice a-day to drink, is purely fanciful, especially in connection with the fact of their crowding to manure water and other saline deposits? I ask because in October last, when examining a large marine aquarium, I was surprised at the number of dead bees floating in it, and they, I imagine, must have been attracted to it by the saline matter. The room in which the tank stands is rarely used, or I should have noticed the circumstance sooner. I intend, however, in the spring to place a glass of sea water alongside the fresh water, in order to test whether the bees really have any preference of the kind. A glass of salt water which I placed in the window along with the fresh, and containing a fragment of seaweed, is perfectly clear, and a number of entomostraca, or water-fleas, are now rolling, and diving, and tumbling head over heels, as lively as if in a tide-pool. Indeed, the water in the tank just named, and which is as clear as crystal, has been unchanged for about five years, and it contains marine animals in perfect health, which have been prisoners during the whole of that time—a certain proof that with a little management water may be kept sweet for an indefinite period.—F. H. WEST.

BEES commenced carrying pollen here on the 26th of January, and on the 1st of the same month to breed, if they had ever ceased doing so, as I have seen young ones at many hives, and, amongst them, a few drones have made their appearance.—A LANARKSHIRE BEE-KEEPER.

TO MAKE BUTTER YELLOW IN WINTER.—Give your cows a little bruised gorse. The fresh juicy spines ground, or cut fine, will be much relished by them. It increases the milk, improves the colour of the butter, and does not impart the slightest disagreeable taste. I tried this in Wales with a dairy of seven cows, and we always had nice, sweet, yellow butter in winter.—HELEN E. WATNEY.

TRADE LIST.

J. Baily & Son, 113, Mount Street, Grosvenor Square.—*Fried List and Descriptive Catalogue of Poultry, Game, Pigeons, and Terrestrial and Aquatic Birds.*

OUR LETTER BOX.

FEDDING FOWLS FOR EXHIBITION (*H. M.*).—Good barley of malting quality, occasionally a little malt, and the yolks of new-laid eggs. Many give a few white peas for some days before exhibiting, and also feed on stale crusts steeped in ale or wine. The latter food must be given sparingly, and this dietary is apt to make them quarrelsome, even to their hens.

EGGS MISSING (*Beta*).—We have little doubt that the sitting hen ate the eggs placed under her. We advise you to examine your nests more frequently, and to ascertain whether the eggs are all right under the hen. If her good qualities are such that it is important to save them to the yard, be careful to secure some eggs from her, and then let the cock have her. If this was her first sitting, you may give her one more trial, but watch her closely, lest she should spoil or eat more eggs. If you can manage without her, kill her.

MAIZE (INOIAN COEN) FOR FOWLS (*Mr. T. S. A.*).—It may be given either boiled or unboiled. We consider it too fattening in any state for breeding-stock, unless they are out of condition, and then to be given sparingly.

DUNDING GAME COCKS (*R. D.*).—Take a curved pair of very sharp scissors—you may purchase them at Priest's in Oxford Street—cut the comb from over the nostril to the back of the head; close to, but not exposing the skull. If it bleed much, take a hackle feather and lay it on the wound, it stay the bleeding. You must also remove the gills and deaf-ears. It bleeds a great deal, but it is a small operation, and the birds are quite indifferent to it. The old cocks never cut up the comb and threw it down for the cock to eat—he never refuses.

PROLONGED INCUBATION.—I set a White Cochon hen on eleven of her own eggs on January 11th; not one of them was hatched out till the 5th of February, and then only two, five more during the following night, and the rest the next morning. Thus she was sitting more than twenty-three days. Is not this an unusually long time? I had ten hatch out altogether. One of my White pullets lays eggs the size of a Pouter's, with no yolk at all. What can be the reason of this variety?—M. E. B.

[It is not uncommon for hens to sit one day over their time; but we have seldom found them exceed that. Except when the eggs are carefully tended and soaked before hatching, they seldom come off altogether. A nest of eggs seldom hatches so closely together as is supposed. The eggs nearest the hen are hatched first, and the others in degree afterwards. We often have hens that begin hatching in the evening, and do not finish till the next day. The pullet will soon lay eggs of the natural size. It is not uncommon.]

SICK PIGEONS (*G. J. Dimingham*).—Your Pigeons are most likely suffering from diarrhoea; see that their house is dry and sheltered. If much affected give each patient a pill containing one grain of calomel, then for a few days pellets of cod-liver oil—you may mix it with ground rice, flour, or meal—a very little sulphate of iron in their water, and some old beans in their food. Some good breeding Pigeons under favourable circumstances will rear nine or ten pairs of young ones during the year, but there are so many casualties that few manage to bring up so many. Three or four pairs cannot be considered bad work for fancy Pigeons. One or two really good young ones ought to satisfy most fanciers. Very much depends on accommodation, breed, and season.—B. P. BRENT.

RABBITS (*J. F.*).—If you send seven postage stamps to our office, with your address, ordering "The Rabbit Book," you will have it sent free by post.

CANARIES DYING (*Canary Lover*).—I have opened the dead Canary sent, but without being any the wiser as to the cause of the poor bird's death. The bird was much emaciated and the intestines looked dark, but it was too much crushed to say if they had been inflamed. The symptoms you describe are just those of starvation. I am, therefore, inclined to think that there must have been something amiss with the seed—that the canary seed had been heated or in some way damaged, and, consequently, failed to nourish the poor birds. I cannot otherwise account for their deaths. You may ascertain this by biting and tasting the seed. You seem to have taken great care of your birds, but I think you make them too tender by not letting them enjoy fresh air; and covering them up at night is not a healthful plan. If sheltered from the wind and rain and not exposed to draughts the birds require no further clothing. Birds that have been kept in a heated place and forced into song, are necessarily in a very unnatural state and require great care in hardening them off. They may be expected to cease their song on removal, but with care will soon resume it at this season of the year. The spring is a good time to buy birds at any of the London shops, as then you can hear them singing. I do not think there is anything epidemic among your birds. If they do not seem quite well you may give them a few grains of hempseed, but this must not be made their constant diet. If the birds cough or are husky, put a little Spanish liquorice in their water; if purged, give them rice water to drink. In addition to cleanliness let your birds have fresh air and water to bathe in.—B. P. BRENT.

BEE FLOWERS (*M. E. F.*).—Mignonette and borage will be the best in your town locality.

HIVING A SWARM (*H. A. E.*).—When the swarm settled on the head of the old pollard oak, little more was required than to stand a hive over it. Had this been done the bees would probably have ascended into the hive of their own accord, although their movements might have been accelerated by a few whiffs of smoke. We had a swarm last summer which clustered among the large branches of a pear tree, just at their point of union with the trunk. In this case we merely supported a straw hive just over the swarm with the left hand, whilst we struck the trunk of the tree with the open palm of the right. The vibration thus produced sent the bees up into the hive with great rapidity, and the entire swarm was speedily hived in the most satisfactory manner.

SILKWORMS (*C. P. J.*).—The leaves of the common mulberry are the food they prefer and thrive best on. If you have Vol. X. of our First Series you will find full directions there for their management. It is in Nos. 245, 246, 247, 249, 250, and 252, all of which you can have free by post from our office if you enclose twenty-four postage stamps with your directions.

PEAT EARTH AS A DEODORISER (*Erecreta*).—All soils are deodorisers, but peat earth we should expect to be the least powerful. It is chiefly composed of silica and vegetable fibre. A dried loam, rather tenacious than light, we consider the most efficient earthy deodoriser.

WEEKLY CALENDAR.

Day of Month	Day of Week.	FEB. 27—MARCH 5, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
27	Tu	<i>Pimelea decussata.</i>	47.9	33.7	40.3	19	62 a 6	84 a 5	48 3	28 6	12	12 58	58
28	W	<i>Salvia gesnerifolia.</i>	49.2	35.3	41.3	14	50 6	86 5	55 4	59 5	18	12 46	59
1	Th	<i>Acacia grandis.</i>	47.7	33.8	40.3	14	48 6	83 5	3 6	25 6	○	12 35	60
2	F	<i>Acacia armata.</i>	49.0	35.4	42.2	15	46 6	89 6	8 7	51 6	15	12 22	61
3	S	<i>Acacia incarnata.</i>	50.0	32.4	41.2	12	43 6	41 5	12 8	14 7	16	12 10	62
4	SUN	3 SUNDAY IN LENT.	49.9	31.5	40.1	10	41 6	43 5	16 9	38 7	17	11 56	63
5	M	<i>Acacia rotundifolia.</i>	48.9	31.9	40.4	15	39 6	45 5	18 10	3 8	18	11 43	64

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 48.9°; and its night temperature 33.1°. The greatest heat was 70°, on the 4th, 1860; and the lowest cold 15°, on the 4th, 1852. The greatest fall of rain was 0.81 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

CULTIVATION OF CAMELLIAS.



AMELLIAS are, perhaps, more generally admired than any plants requiring the protection of glass. When in perfect health their dark glossy foliage and glorious flowers

render them the pride of the conservatory, whilst a single bloom is thought to heighten the charms of the most beautiful woman. Knowing from practical experience that no plant is more easy to grow than the Camellia, I have no hesitation in saying that none is more generally mismanaged. It is rarely indeed that we see Camellias in health, whilst plants with yellow unhealthy foliage, attenuated shoots, and covered with scale insect, may be seen in almost every greenhouse.

It is most remarkable that when so many new and beautiful varieties are being introduced, rendering Camellias more than ever worthy of cultivation, so few of our large nurserymen pay any attention to their propagation: but the reason is obvious, they do not pay. Thousands of young Camellias are introduced every year from the continent, nice-looking bushy little plants, well set with buds, and they are sold at a price for which they cannot be grown properly in England. Though a large proportion of these cheap plants die, and more become permanently unhealthy, the public still buy them, and their doing badly is attributed to the mismanagement of the gardener, or the conclusion is arrived at "that Camellias are tiresome plants to grow," and the attempt to cultivate them is given up. In proof of what has been advanced, we have only to take this fact into consideration, that whilst a young plant may be purchased for 2s. 6d., a bloom at Christmas is worth 1s. in almost any town in England.

The Camellia is nearly as hardy as a Portugal Laurel, and if it were planted in proper soil, and covered with a glass roof, no English winter would injure it; but, grown in small pots, its roots would suffer. If a healthy plant be examined, it will be found that its young roots are matted round the inner surface of the pot, and, of course, if that pot be exposed to severe frost such roots are likely to be killed. Artificial heat, therefore, is necessary to prevent the temperature falling below the freezing-point. I have no hesitation in saying, that all fire heat more than is requisite for this purpose is injurious to the Camellia. It is quite true that Camellias may be forced, and that to stimulate the vitality of an unhealthy plant a moderate damp heat may be advisable, but forcing in most cases is injurious to health and longevity; and it does not follow that the same treatment is adapted to health and disease. To grow a healthy vigorous plant of good constitution is a work of time, but Camellias may be grown, as razors are manufactured, "to sell."

PROPAGATION.—Though the improved double Camellias may be grown from cuttings, they rarely make healthy or permanent plants; they ought, therefore, to be grafted on the single Camellia japonica.

Those who raise many seedling Camellias with the hope of obtaining new and valuable varieties, often use those which prove inferior as stocks; these may be as good as the original single Camellia for the purpose, but they are often little superior in vigour to the double varieties which are worked upon them.

Cuttings of the half-ripened wood of the single Camellia should be taken in August; a pot properly drained, and half filled with sandy loam, should be filled to the brim with fine white sand, which, when watered and made solid, will be fit to receive the cuttings. These will require a gentle bottom heat and close atmosphere, and will be ready to pot off in the following January.

SOIL.—The roots of the Camellia will not grow in solid soil, it must be loose and open; knowing this, the continental growers use a rich fibrous peat, and if the plants be carefully shaded, the atmosphere damp, and everything else favourable, it is probable that no soil will grow young Camellias in less time or with better-coloured foliage, but I am convinced that plants so grown have no constitution. After many years' experience I have come to the conclusion that turf from a sandy loam is the only soil fit for Camellias, and that the addition of leaf mould, peat, manure, &c., is always injurious. Cut the turf as thin as if it were intended for a grass plot, chop it, or, what is better, pull it to pieces, and use it the same day it is cut: it will not improve by keeping. In using so fibrous a material considerable pressure must be employed in potting, otherwise it will be too loose; a little fine soil sprinkled on the surface will give an appearance of greater neatness. A short time after the plants are potted a few blades of grass will probably spring up in the pots, but one weeding is generally sufficient.

POTTING.—In potting cuttings a more sandy soil is required than for older plants. After having well chopped the turf place it in a riddle, and give it a shake to get rid of part of the soil, and add as much white sand as is necessary to make it look like sandy peat. Use small pots holding less than half a pint of soil, and pot firmly. A moderately damp and close atmosphere of from 50° to 60° is necessary till growth has commenced, but no bottom heat should be applied, as the roots of Camellias are easily destroyed if plunged in a warm bed. When well rooted a cool house, facing the north, would be the best place to which to remove them, and there, with the ordinary attention required by greenhouse plants, and no more heat than is requisite to keep out frost, they may remain for two years, when they ought to be fit for grafting.

GRAFTING.—This is best performed in the beginning of January, and requires some skill on the part of the propagator. The stocks should be placed in the propagating-house a fortnight before grafting, that they may be a little in advance of the cuttings. Grafting may be done in the usual manner by what is called whip-grafting, the top of the stock being left on; or it may be done by what is called

saddle-grafting, in which case the top is removed. The former has the advantage in one respect—that it can be repeated without much injury to the stock in case the first graft fails, if the operator has taken the precaution not to graft too low down the first time; but it is not advisable to repeat the operation the same season. The saddle mode is more sure, and makes the strongest and best plants, but a failure destroys the stocks. When grafted the stocks should be placed on (not in) a hotbed, and kept close and warm till the scions are safely united. A clever propagator will make nineteen out of twenty grow, whilst an inexperienced man will kill more stocks than he will make into plants.

AFTER-MANAGEMENT.—Treat the plants as half-hardy greenhouse evergreens—that is, give no more heat than is necessary to keep out frost. In watering use enough to soak through the pots, and never let them become too dry, nor give water till they require it. Keep the foliage perfectly clean; if necessary wash each leaf with a sponge dipped in warm water, or soap and water, this is far better than using the syringe. If the plants require potting, it should be done as soon as possible after blooming;—indeed, almost before they are out of bloom. Never turn the plants out of doors; if they cannot be placed in a house with a north aspect, use a shade in hot weather. Do not use the syringe except for a few days after they are repotted, when the house may be kept a little close to promote growth, at all other times give plenty of air. Treated in this way the *Camellia* makes strong vigorous shoots and healthy foliage, and there will be no complaint of falling buds, dead roots, unhealthy foliage, or miserable flowers.—J. PEARSON, *Chilwell*.

THE COILING OF VINES.

I HAVE derived much satisfaction, and have been amply repaid for the small trouble I took in transferring to your columns the opinion of my old French friend on this subject. If it had done nothing more than have brought out Mr. D. Thomson's opinion, as given in pages 83 and 84, I should have felt amply rewarded. Still I have a strong leaning towards the opinion of my old friend, a fruit-cultivator of upwards of three score and ten, with a Lard head and a constitution equally hard, for he was at Moscow with Napoleon in 1812, and returned unscathed, with the exception of being a "*toisseur* (congher) for life," as he says.

In the second paragraph of Mr. Thomson's sensible article, he alludes to coiling as having roused discussion many years ago. This was not coiling of Vines, but coiling of Vine shoots in pots, so as to have a crop from them. Mr. Mearns was, I think, the inventor of the system, which failed.

In his third paragraph, Mr. Thomson thinks that coil planting is opposed to the laws of Nature. To bury in the ground the stem of a tree, which will not put forth roots, is a sure way of destroying a tree. Wherever I have seen earth heaped to a depth of 4 or 5 feet round the stem of a tree, so as to cover a surface of, say, 10 feet in diameter, thus excluding heat and air from its roots, certain death has ensued; but what shall we say to the assertion of "T. T.," page 142, that it "has a very beneficial effect?" It is just possible that earth may be piled up close to the stem of a tree, so as not to cover the circumferential surface of the soil, without killing it, and that is all. If trees happen to stand near railway embankments, so that their roots are covered, they die. This is, however, very different to coiling a Vine, and covering it with 2 inches (misprinted "10 inches") of earth—every fresh root gives vigour. The vignerons of France would not constantly layer their Vines unless they experienced this effect.

In the fourth paragraph of Mr. Thomson's article, he confounds the coiling of the shoot of a Vine lightly covered with soil with the layering of a Vine deeply. The difference is most material. He layered his Vines, and covered them 8 inches deep. The shoots were too deep to receive any benefit from those grand sources of life—light and heat; consequently they put forth no roots, the sap circulated languidly, and the Vines suffered. If they had not been so deeply buried they would have put forth roots from every inch of stem, instead of having a bunch of roots only "close to their necks—near the surface of the soil," and if the numerous roots thus formed had a good compost to run into, they would have interfered with the original root, by leaving it but little to do; but they would have given immense vigour to the Vines.

In the fifth paragraph, the stems of the Vines alluded to were most probably too deeply covered, and shaded from the direct

rays of the sun by the front wall: under such circumstances they would not put forth roots. In old times, when Vines for sale in the nurseries were propagated by layers, I perfectly well remember a twist being given to the shoot before it was layered, which made it root more freely. This is an approach to coiling, the twist in which has undoubtedly been found, in France, to have the same effect.

Referring to the old system of propagating Vines for sale from layers, I well remember the long wall at the Brompton Park Nursery, in front of which the shoots of Vines from the wall were annually layered. I can recollect that here in a light sandy soil the layers rooted admirably close to the surface, at the collar, but the lower part of the Vine, which was buried 8 inches below the surface, was generally bare of roots.

In his sixth paragraph Mr. Thomson seems to have made a great mistake. One feels surprise that so clever a cultivator could have made such a *faux pas*. The roots of the Vines were buried to the depth of 15 inches below the surface; they, instead of imparting vigour to the "splendid Vines, with buds like nuts," ruined them by not moving, because they were out of the influence of light and heat, those essentials to life in everything.

It will, I think, be seen, that in no one instance has Mr. Thomson planted coiled Vines after the manner I endeavoured to describe in No. 248; still we owe him thanks for his kindness in saying what he has said, and in giving so lucidly an account of his experiments in Vine planting.

I have a strong idea that coil planting will be found better adapted for the pot culture of Vines, and for Vines planted in the area of a house (a vineyard under glass), than for Vines planted under rafters in the usual way. What occasion can there be for any change, when Grape culture is so perfect as it is under the management of our great gardeners? The planting of the area of a house, and training the Vines perpendicularly to rods, is equivalent to making a French Vine garden in England. I have a small span-roofed house planted with forty Vines trained after this manner. It was these Vines that brought out my old French friend, for he immediately laid hold of one and said, "You ought to have had double vigour in this Vine, and you might have had, if you had coiled it." This led to the description of how to coil a Vine, which your readers will find in No. 248.

As to my own doings, I have two dozen Vines in pots, placed on hot-water pipes. They were originally 8 feet in length: instead of reducing this length by cutting off the fine, plump fruit-buds at top, I have layered the base of each, coiling it round just inside the rim of the pot, and covering it 1 inch deep, so that my Vines are now a little more than 5 feet in length. With the exception of two or three, they are breaking well. I shall watch the coil as to its time of rooting, or not rooting, with much interest.

With regard to my "vineyard under glass," I intend to coil every Vine—this is the second year of their growth—and thus see if this very simple variation in the planting of Vines has any effect. I hope Mr. Thomson will visit London in May, to see the International, and I trust he will come here, so that we may "reason together." I always hail with delight the visits of our great gardeners, it is quite refreshing to contrast my eccentric ways with their sound and long-practised systems.—T. R.

MUSHROOM-GROWING IN POTS.

A CORRESPONDENT speaks of growing Mushrooms in pots; I have done so with very good success. Having some 18-inch pots I filled them with fresh droppings, and spawned them at once, setting them under a stage through which passes a hot-water pipe covered with a grating, and placing a mat over the pots. I find the Mushrooms so produced very useful when beds are perhaps longer in coming in than calculated on.—W. McA.

NEW HYBRID AZALEA.—I send you some blooms and foliage of what I consider to be one of the greatest acquisitions in the way of early spring-flowering greenhouse plants I have seen for a long time, and I shall be glad to have your opinion of it. The plant has been brought to me for inspection, and, as soon as I saw it, I told the fortunate owner of it that I considered it a novelty of first-class merit. The description which I received of its origin is, that it is a seedling from the pretty and useful Azalea named *amœna* crossed with *Rhododendron Princess Alice*; but, from the general character of the flower, I

should be inclined to think that it has more of the characteristics of *R. Gibsoni* than of *Princess Alice*, although the foliage favours the latter variety more than the former. The flower is of about the same size as that of *R. Gibsoni*, and the colour is a rich rosy peach; the foliage is about double the size of *Azalea amœna*, rather more elongated, and is covered thickly with short copper-coloured hairs on the upper surface of the leaf. The plant is all that could be wished in point of habit, and it appears to possess the free-flowering character of *A. amœna* combined with the large flower of *R. Gibsoni*.—**J. WILLS.**

[The bloom was much damaged, but not to the extent to prevent our being able to say that the flower is very large, of good substance, and of a deep rose colour. Mr. Wills's opinion upon the plant needs no confirmation.—**EDS.**]

TROPICAL PLANTS IN OPEN BORDERS.

CURIOSITY and admiration have been largely evinced at the recent experiments, so happily conceived and so successfully carried out, in the summer embellishment of a few of our London parks, by the employment of varied selections of plants which, until lately, were regarded by most English gardeners as only adapted in this climate to perpetual imprisonment under glass. Now, why should there not be a judicious selection and association of what are called "sub-tropicals" with our present florists' flowers? With this object in view a piece of ground favourable to their growth might be set apart in some of the extensive parks belonging to the nobility, or at least in our public gardens. The plants in question deserve the serious attention of all desirous of decorative improvement, particularly when their employment, in relation to our present system of filling up, would entail very little additional trouble or expense. The only serious objection to their general adoption in the more temperate and dryer parts of the country seems to be want of house-room for their winter preservation; but this is more seeming than real.

To many persons who visited Battersea Park during the last few seasons it would seem incredible that what garnished a vast portion of that extensive area with the varied and luxuriant vegetation of a sub-tropical garden, could be housed and preserved during the winter months in the little space provided for the purpose. That such a multitude of plants should be turned out in summer with means so limited as compared with their number, will not, however, seem so wonderful when we consider the extraordinarily rapid annual growth of most of them—such as *Caladiums*, *Cannas*, some of the *Malvas*, *Solanums*, and *Leguminosæ*, the different varieties of the Castor-oil plant, some of the *Compositæ*, *Aralias*, *Dracænas*, the different *Indian-rubbers*, &c.; and when we consider that the facility with which most of them are raised from seeds and otherwise propagated, renders it unnecessary, nay, unadvisable, to occupy much house-room in keeping through the winter many overgrown and deformed individuals, except a few which may be cut back and kept to furnish cuttings in the following spring.

The *Cannas* may be cut back on the appearance of frost, and the rhizomes stored away like the tubers of the *Dahlia*, or a great many of those with short-jointed rhizomes may be left out permanently, covering the beds with old hay, &c.; in fact, one of the finest beds of *C. Umbata* at Battersea Park last season was treated in this way. The *Caladiums* will take their sleep, either unpotted or in pots, in any place where they can be kept dry and protected from frost; and a great many other plants are here passing the winter in cold pits. Among such are the Rice-paper plant of China; *Solanum auriculatum*, robustum, and marginatum; *Nicotiana wigandioides*; *Senecio Ghiesbreghtii* in full flower; *Verbesina gigantea*; *Polynnia grandis*; *Ferdinanda eminens*; *Cineraria platanifolia*; *Acanthus mollis*, spinosus, and lusitanicus; *Dracæna indivisa*; *Grevillea robusta*; *Lomatia Bidwilli*, &c.; *Chamerops Fortunei*; *Berberis nepalensis*; *Melanthus major*; *Bambusa metake* and *B. aurea*, &c.; *Cassia floribunda*; *Phytolæca dioica*; *Erythrina ruberrima*, *E. crista-galli*, and *Marie Belanger*; *Gunnera scabra*; *Alsophila australis*, and *Dicksonia antarctica*, &c. The cold pits in which these are sheltered are only protected during the nights with mats, &c. It might not be safe to imitate this generally, but there is every reason to conclude that in pits well drained, and heated with a single small hot-water pipe, they would be perfectly safe, and would do well. The more delicate subjects serve to embellish and enliven the houses.

These experiments, I think, afford incentives to all—to those having some of these plants already in their houses, to put them out during the fine season—to those having the construction of houses in contemplation, to set a section apart for raising and cultivating some of the best.—**WM. KELLY, Battersea Park.**

IMPROVEMENT OF WILD FRUITS.

THE cultivated Apple having sprung from the wild Crab, the Pear, Plum, &c., from their wild progenitors, great encouragement is thus offered to horticulturists to devote attention to our wild fruits.

The Pear scion takes freely upon the White Thorn stock, and no doubt this Thorn will take as freely when grafted upon the Pear. There are great varieties in the size and quality of the haws in the present uncultivated state; but these circumstances evidence a predisposition to vary and improve, and if due cultivation and selection were given, it is impossible to say what results would follow. Last year I grafted the double and single scarlet varieties, and the American Thorn, on Quince and Pear stocks, but the season was unfavourable to the success of the careless mode which I adopted, and the dry winds destroyed most of the grafts; afterwards dogs and fowls completed their destruction, except one American Thorn, which took well and grew about 2 feet, the stock being the Quince. I propose to repeat the operation this season, and I now write in the hope of inducing some of your experimental readers to devote attention to the same or more extended objects.

I intend to graft the common White Thorn on the Pear stock, also upon the Quince already grafted with the Pear, as well as on the Quince stock, in the hope that an early state of fruitfulness may be induced, so that I may take scions from the seedlings from these grafted Thorns. At any rate, *Cratægus coccinea* and *lutea*, with *C. pyracantha*, if grown upon the Quince, and then cultivated upon Mr. Rivers's system of nipping-in and repeated removals, would, no doubt, be very ornamental as dwarf pyramids and bushes. I am informed by a very talented old gardener that the *Cydonia (Pyrus) japonica* takes readily upon the White Thorn, and, therefore, probably upon the Pear and Quince (*Cydonia vulgaris*), and thus it offers results both in ornamental and fruit improvements.

The *Pyrus sorbus*, or True Service Tree, may be propagated by grafting upon the Apple and Mountain Ash, and is said to take upon the Medlar and Hawthorn stock; but I am working it upon the Paradise, with a view of seeing the effects after years of cultivation upon the nipping-in and repeated-removal system. As far as I have gone I find the Apple when budded upon *Pyrus sorbus* does not grow freely, but grafting has done better. I really think that the *Pyrus sorbus* gives much promise of affording a very useful addition to our garden fruits, and the same with the haw, at least for preserving. Till careful trials have been made and attentive cultivation bestowed, we cannot say what may be done, and should the effect be only to induce any of these to cross with greater facility than they do, a new race might arise affording much interest.—**W. A. WOOLER, Sudbury Hall.**

MANURE FOR POTATOES.

I MADE an experiment on a small scale last season, which seems to me to prove Turnip manure to be likewise a good Potato manure. I staked off exactly one rod of my garden, which is a very light sandy soil, and sowed at planting-time 3 lbs. of Turnip manure (value 2½d.) At taking-up time I weighed the produce, and found it to be 20 lbs. more of large and good Potatoes than the same quantity of land on either side of the manured rod produced; and if I had measured the small and diseased tubers the difference would have been much greater, as, although there were less small ones on the manured rod, the diseased (and they were the largest), were much more plentiful. The price of the 20 lbs. of Potatoes in this part is about 6d., leaving 3¾d. balance in favour of the manured rod, or £2 8s. 9d. per acre.—**J. ROBINSON, Blyton.**

AMHERSTIA NOBILIS.—Those who have the interest of plant culture at heart, will be glad to learn that a splendid specimen of this rare Indian tree is now in flower at Chatsworth, where it is grown in a house especially designed for it.

PARADISE STOCKS.

I was much surprised at reading the letter of Mr. Pearson last week, condemning the Paradise stock for Apple-grafting, and I waited eagerly to see what would be written in reply, as I am laying out a new garden, and I intended to plant largely of the Apple on the Paradise stock. I am disappointed to find no one but Mr. Scott replies to the letter. What has Mr. Rivers to say on the subject? It was from his recommendation I took the idea, and I have his last catalogue before me, in which he very strongly recommends the Paradise stock, and after quoting prices, says in a footnote, "These kinds of trees will be planted extensively in gardens, and, in fact, revolutionise Apple-tree culture." Nothing is more puzzling to the amateur than these very contradictory opinions from leading and experienced men.—J. D.

There seems to be a great misunderstanding arising from Mr. Pearson's observations about the Paradise stock. What Mr. Pearson spoke of, and what Mr. Scott recommends, is the *Pommier de Paradis* of the French, a very different tree from the English, the Dutch, and the French Paradise stocks which are used in this country, and one or other of which Mr. Rivers alludes to in his catalogue and "Miniature Fruit-Garden," wherein he recommends plantations of Apples grafted on the Paradise. What we call the French Paradise is by the French themselves called the *Doucin*; but all these three are entirely different from the *Pommier de Paradis* that Mr. Scott recommends. Our own experience of the last is, that it is tender, impatient of cold and wet, and subject to canker. We have cultivated trees grafted on it successfully in pots, for which purpose it is well adapted; but unless in a light warm soil and a very favoured situation, we should not be disposed to place any reliance upon it.—Eds. J. or H.]

VINE CULTURE.

I SHOULD have been better able to have replied to "T. S. W.'s" criticisms in No. 230, page 24, and should have felt more pleasure in doing so, had he put his name in full at the bottom of his article, instead of taking shelter under initials.

It is true I invited a discussion on the Vine, and should have been very much pleased to have been corrected, and would not have been slow to have acknowledged an error if it had been pointed out to me in a friendly spirit, and according to the rules of courses. "T. S. W." seems to have forgotten this. He says, "Vine culture is a subject that has been so often and so thoroughly sifted of late years, that it would be difficult indeed to broach any new or profitable idea upon it—a fact which your correspondent seems to have been unable to overcome."

In reply to this—1st, I ask "T. S. W.," Is the cultivation of the Vine to stop at the point of perfection at present gained, whilst everything else is progressing?

2nd, "T. S. W." is wrong in assuming that I was attempting to introduce any new system of cultivation for the Vine. What I preach I practise—none of my articles are copied from other works, but are simply descriptive of my own everyday experience.

As to the red spider difficulty on which "T. S. W." lays such stress, I maintain that the insect may be easily kept under if the proper means are adopted from the beginning of the forcing season to the fall of the leaf. "Prevention is always better than cure." With regard to the proper mixture to be used for painting the Vines, &c., "T. S. W." seems to have been brought up in an age when none of the old-fashioned plans of our forefathers were ever heard of. If I saw any of my Vines undergoing such a severe process as that described by "T. S. W." (with the hard spoke-brush), I think I should want a stimulant rather stronger than water to prevent me from fainting.

As regards lowering the tops of the Vines, I still adhere to what I stated in No. 242, page 398. I have grown Grapes which have been deemed worthy of a first prize at the metropolitan exhibitions; they have been cut from the middle of the Vine. I also noticed that the wonderful bunches of Grapes exhibited by Mr. Meredith during the past and previous seasons had been principally produced about the centre of the Vine. If the hot-water apparatus has been properly fixed, there will not be a very great difference in the temperature of any particular part of the house. What I mean by properly fixed is to have the pipes equally distributed over the floor of the house, or above the vine-border, instead of having them principally at

the front and back of the house, as was usually the case in days gone by.

In late vinerias I consider the regular breaking of the Vine may be attributed more to the approach of its natural season of growth than to any other cause at that period. The difficulty to contend with is how best to keep the Vine back. Fire heat will seldom or never be required in a late vinery while the Vines are breaking, unless the weather be very cold, which is sometimes the case.

I admit "T. S. W.'s" to be a good plan—I mean the laying the Vines horizontally along the front of the house. It is a plan which I formerly adopted myself, but have discontinued for this reason—in bringing the Vines into their proper position, many of the finest and most prominent buds are often sacrificed.

With regard to temperature, my experience teaches me that it is better to err by subjecting the Vines to a moderately low temperature, than to force them into a premature growth before there can be a reciprocity of action between the roots and foliage. I consider a high night temperature quite contrary to all reason—all plants should be at rest during the night; and in forcing a plant of any kind into growth before its natural season of growth arrives, I maintain that every precaution should be used to bring this about as gradually as possible; and I have found in the course of my practice, that Grapes will colour much better in a temperature of from 70° to 75° than they will if subjected to a higher temperature. I have often had the thermometer in my vinerias down as low as 46°, where the heating apparatus has not been sufficient to do the work properly, without noticing any ill effects resulting from it. I have also frequently seen a good crop of Grapes nearly spoilt by being subjected to a high temperature.

For the above reasons, therefore, I hold that the system of treatment which I have given is the safest one to go by, for that class of readers of THE JOURNAL OF HORTICULTURE for whose guidance my series of articles on the cultivation of the Vine were intended.

With all due respect to "J. S. S.," No. 248, page 519, I must beg to be allowed to differ from him in opinion as to the use of the pruning scissors. I still maintain that it is impossible to make a clean cut with them; and that, however careful the operator may be in using them, the wounds never heal so quickly, and in many cases not at all.

I trust that these pages may yet be enriched by articles from some of our champion Grape-growers; and I am sure that the Editors will not refuse to insert any articles on the above subject, written in a friendly spirit, and for the general edification of that class of readers of the Journal who are not slow to acknowledge the benefit they obtain from conning over its pages, and who anxiously watch for its arrival by post.—J. WILLS.

THE ESSEX RIVAL PEA.

At page 66 of THE JOURNAL OF HORTICULTURE, is an inquiry from a correspondent who signs himself "NICKERBOR," as to the parentage of the above valuable Pea, and Mr. Eley, who has spared neither pains nor expense to introduce it to the public, has replied with the honest spirit of a true Englishman, to the effect that if "NICKERBOR" will give his real name, he will answer his inquiries: but your correspondent has not thought proper to do this either privately or publicly. He, also, under the disguise of his *nom de plume*, charges Mr. Eley with sending out a Pea as a new variety which has long been known in Nottinghamshire and Leicestershire. I happen to know that Mr. Eley has been indefatigable in his exertions to prove the Pea in question identical with any known variety, and the principal seed merchants, who send representatives all over the country, and many eminent gardeners, have failed to recognise it, but have furnished ample testimonials to prove its superiority.—T. J. S.

SUSSEX FLORA.—Mr. W. B. Hemsley, assistant in the Kew herbarium, is engaged in collecting materials for a Flora of Sussex, and solicits the co-operation of resident botanists and others interested in the issue of such a work. Local lists, especially of the extreme west and north-west, also information relating to critical species and specimens of the same, would be of great service. It is intended to include lists at least of the lower Cryptogamia. Names of intending subscribers will be

received, as the success of the undertaking depends upon securing a certain number. Communications may be addressed to The Herbarium, Royal Gardens, Kew, W.

CULTURE OF HOYA BELLA.

Of the several species of this genus, none is more worthy of careful cultivation than the subject of the present notice. It requires a free, porous soil, composed of loam and turfy peat, the latter chopped up with the spade, or broken with the hand, but not sifted, one-fourth leaf mould, and as much white or silver sand as will give the whole a greyish appearance. In this compost the plant will grow luxuriantly, and produce its lovely wax-like flowers in profusion. The pot must be carefully and efficiently drained, as a sour soil occasioned by an undue retention of moisture is extremely detrimental to the plant; bits of broken bricks and lime rubbish form a superior drainage, and if a handful of the latter is mixed up with the soil at the time of potting all the better.

During its season of active growth the Hoya bella delights in a moisture-laden atmosphere, and a temperature of 70°, and upwards; with plenty of moisture in the air, only a very limited supply will be required at the roots, and hence the moist atmosphere of the plant-stove or Orchid-house is that most congenial to the habits of the plant. In a well-managed vinery, however, the plant may be pretty successfully cultivated. If grown in the stove or any other glass structure where a high, moist temperature is steadily maintained, the plant should be removed to a drier and somewhat cooler atmosphere—say, one with a temperature of 65°, when the flowers are on the eve of expanding; the blooming season will thus be very much prolonged, the high, moist temperature of the stove speedily causing the flowers to drop off.

In order to secure a proper ripening of the wood, a late autumn growth should not be encouraged, but if the plant has been kindly treated during summer, this important result will, in general, have been pretty well accomplished by the time its blooming season is over. In winter it should be accorded a dry shelf pretty close to the glass, where the temperature ranges from 55° to 60°.

When grown as a specimen pot plant it is not unfrequently trained to a balloon-shaped wire trellis, and for certain purposes it suits very well. It is also occasionally used to cover the end wall of a stove; but if we are desirous of showing flower and leaf to the greatest advantage, it should be plunged in a wicker basket of moss, and suspended from the roof of the stove or vinery. It here assumes a semi-pendant habit, and has an extremely graceful appearance.

Almost the only management which the plant requires, is to pinch the points of the leading shoots or branches during the growing season, so as to induce the production of laterals, and thereby secure a bushy habit. If this pinching be duly attended to, a severe knife-pruning will rarely be necessary. Early in spring the plant should be top-dressed or repotted, as may be necessary, and then be placed in moist heat and treated as above directed. It is propagated from cuttings, which root freely in moist heat.—J. DUNN.

NOVELTY AND EXCELLENCE ARE NOT TWINS.

BEFORE reading Mr. Robson's remarks it had often occurred to me that after all the novelties duly trumpeted forth year after year, in reality little improvement had been made for say the last ten years. Since reading the article above referred to, it strikes me that it would prove interesting to many of your readers were you to set up in your pages a kind of tribunal, and bring before your court fruit, flowers, and vegetables. Let them all give some account of themselves—what they have been doing, or rather what has been done for them during the period stated, taking evidence *pro* and *con*. In fact, let there be a day of reckoning. After all, what is the use of going on year after year, trade excepted, saying this or that is better than so and so? To my mind the proof of many things besides the pudding lies in the eating. Give me in the way of Pears a Jargonelle, in Apples a Cornish Gilliflower, and in Peas the British Queen. Can any new kinds be advanced that will beat them? If so, the information will greatly oblige.—AN OLD BIGOR.

[If our most inveterate enemy were permitted to afflict us in any way he chose, he could not devise a more effectual torment than to compel us to be judges of such a tribunal as you sug-

gest. We humbly decline accepting the appointment, and transfer it to the Committees of the Royal Horticultural Society.

You are worthy of your adopted name if you admire none but the three specialities you have named. You cannot have even a succession of them.

Of Apples, just try the Kerry Pippin, Cox's Orange Pippin, and Sam Young; of Pears, Marie Louise, Winter Nelis, and Williams's Bon Chrétien; of Peas, Advancer for an early crop, Champion of England and Ne Plus Ultra for later crops; and then, instead of "An Old Bigot," we shall have you in our pages as "A Young Convert."]

SYRINGING VINES—INFECTED CLOTHES.

THE syringing of Vines is a subject respecting which much discussion has taken place, and it has even been considered possible to modify, if not altogether discontinue its use as a preventive of red spider in forcing vineries, and thus save much valuable time.

For several years I have been endeavouring to find a substitute for syringing, as I never observed that the Vines derived any benefit from it. On the contrary, the results are often the reverse of beneficial, from the fact that if air is not given early next morning the sun is sure to burn or scald the tender leaves of the Vines, by its action upon the water adhering to them.

In houses of small dimensions, constructed without ventilators at front and top, burning of the foliage will frequently be your reward.

Here, last season, we never used the syringe, and its discontinuance was attended with entire success. The Vines had nice clean foliage, short-jointed wood, and were free from red spider.

I think that by keeping the walls, flues, and floor constantly damp, the necessary amount of moisture may be produced to hold the red spider in check.

Previously to commencing forcing, pruning being done, I would have the Vines carefully painted with sulphur and Gishurst compound, and the walls with lime, Gishurst compound, and sulphur; the flues might also be washed. These applications, repeated several times during the forcing season, will be found effectual in preventing the attacks of red spider, should the insect not be carried to the vinery from other places. For instance, when the person in charge has been attending to Melon or Cucumber-pits, where the red spider frequently abounds, he may carry the insects on his clothes and deposit them in other structures. I would suggest that such introductions be prevented by having the clothes carefully brushed before entering the vinery. I would also warn the young gardener of the possibility of carrying mildew into the vineries, which might be done if he went there after having gathered Peas or other vegetables affected by that pest of the garden, and if it be true that the same fungus appears on the two plants.—JAMES REID.

POT VINES ATTACKED BY THE VINE WEEVIL.

I FORWARD for your inspection a one-year-old pot Vine which has been attacked by what I suppose to be the Vine weevil. I have hitherto been very successful in growing pot Vines, but this year I find they will be a total failure through the ravages of this pest. It is during the time they remain in the grub state that they feed upon the young roots of the Vine; and as the spring or forcing advances they assume the beetle state, and come out of the pots by hundreds.

Our Strawberry plants, too, have suffered very much from the ravages of this insect, both those in the open quarters and others potted for forcing; it was by this means they were taken into the forcing-houses.—J. B.

[The bark on the specimen sent was entirely eaten off from the roots of the Vine down to the wood, and from its stem, also, as far as it was beneath the soil's surface. The insect is the well-known *Otiorhynchus vastator*, and if not carefully hunted for and destroyed (as recommended in last week's answer to "WATSONIAN"), it will in a short time gnaw off every bud as it appears on the stems. A sheet or white cloth should be spread beneath the Vines, and the beetles hunted for at night with a light. They will fall to the ground and feign death on the slightest alarm.—W.]

MILDNESS OF THE SEASON.—The weather here (Welwyn, Herts), has been so extremely mild as to induce some of our

roses to bloom. We have here, on the side of a hill, a fine *Rhododendron* in full bloom, which has been expanded since the 6th of January, and on the 10th followed numerous patches of Snowdrops and Crocuses, exhibiting their early blooms. Peaches and Nectarines are swelling their buds and promise a good crop. Gooseberries are pushing into leaf, and, in fact, vegetation is, here, in an active state, and, as Mr. Record stated in your Number of the 13th inst., every gardener should keep a sharp eye to the weather, and be in readiness for any of those severe frosts and winds which so often prevail in March.—H. OGLE.

ROYAL HORTICULTURAL SOCIETY.

FEBRUARY 20TH.

FLORAL COMMITTEE.—Considering the cold and frosty day, this meeting may be considered a great success. Had it not been for the intense cold many other specimens, we are informed, would have been sent. Mr. John Graham, Cranford, exhibited a large collection of The Czar Violet, which maintains its character, and was universally admired both for the size of the flower, its sweet scent, and the noble foliage. Mr. Graham sent another seedling from this variety named Dagmar, but very inferior. A special certificate was awarded for the collection. Mr. Young, Highgate, sent a small collection of *Dracaenas*, and a specimen of *Bryophyllum calycinum*. Mr. John Watson, St. Alban's, sent plants of *Cyathodes oxycedrus*, vars. *alba* and *rubra*. These plants appeared to be novelties. The foliage was similar to that of the Juniper; but as the merits of the plants consist in the berries they produce, not bearing any they could not be noticed. Mr. Smally, Norton Hall, exhibited a seedling *Primula sinensis* with large bright flowers; and Messrs. Garraway, Bristol, five seedling *Hippeastrums*—Nos. 1, 2, and 4 very showy flowers, but not equal to many reared. From Mr. Bull came three varieties of *Camellia japonica*—*Reuziano*, pale bluish flower, good shape, but small; *Archduke Carlo di Toscana*, bright red, with occasional white centre petals, giving a very pleasing character, flowers small; also *Countess Novello*, white flowers, with pale bluish blotches. Messrs. Cutbush, Highgate, exhibited a large and interesting collection of *Azaleas*, *Magnolia Soulangiana*, *Primulas*, *Prunus sinensis*, *Hycinths*, *Narcissus*, *Tulips*, *Crocuses*, &c., for which a special certificate was awarded. Mr. Lacking sent a nice specimen of *Peperomia urifolia*, one of the plants collected by Mr. Weir, and which has been previously noticed. From Messrs. Waterer & Godfrey came three specimens of *Aucuba japonica* *vera* in full berry. One specimen was extremely ornamental. A special certificate was awarded them. W. W. Saunders, Esq., exhibited a group of very small-growing Orchids, among them some curious and interesting species, some of them highly scented, and others of botanical interest: a special certificate was awarded them. From the same gentleman came *Peperomia species nova*, with bright green, small, ovate foliage—a trailing plant, useful for baskets and wall decoration. This curious *Peperomia* was much admired, and was awarded a first-class certificate. This is another of Mr. Weir's plants. Also *Tillandsia bulbosa*, a great curiosity, growing on a small branch of a tree, and producing from the scaly stems long roundish leaves, which become bright scarlet at the part where the purple flowers are produced. Although an old and well-known plant, few persons present had seen it in such a state of perfection. A second-class certificate was awarded it. Several very excellent specimens were sent from the Society's gardens, among which were *Dracaenas*; *Cineraria populifolia*; a terrestrial Orchid, *Petesia bicolor*, with broad spotted foliage; and *Libonia floribunda*, a beautiful and decorative winter plant, with dark orange and bright yellow flowers. To this a first-class certificate was awarded; also to a *Cattleya* collected by Mr. Weir, a beautiful variety of *C. Trianaei*, having a bluish flower with a deep purplish lip, differing from *C. labiata* and *Mossii*.

FRUIT COMMITTEE.—On this occasion there was an excellent, it might almost be said extensive, display of fruit, collections being furnished by Mr. Ford, gardener to W. E. Hubbard, Esq., St. Leonard's Lodge, Horsham; Messrs. Rivers & Son; and Mr. Lynn, gardener to Lord Boston, Hedsor. Each of these exhibitors received a first-class certificate. Mr. Ford's collection comprised a dish of Limes (*Citrus limetta*), one of Oranges, and a seedling Apple, which the Committee requested might be sent again at an earlier period of the season, as it appeared to have been kept too long to be at its best; also, many different kinds of Apples and Pears. Among the former were good dishes of Norfolk Bocking, London Pippin (very well coloured), Pearson's Plate, Keddleston Pippin, Shepherd's Seedling, New Rock Pippin, Dutch Misanne, Golden Harvey, Court-Pendant-Plat, Blenheim Pippin, Scarlet Nonpareil, Adams Pearmain, French Crab of 1864 and 1865; Mannington's, Royal, and Herefordshire Pearmain, Cornish Gilliflower, Bess Pool, very highly coloured, under the name of Black Jack, and several local varieties, one of which, called Elstead Pippin, was handsome in appearance, and was said to be useful both for dessert and culinary purposes. Mr. Ford had also some good Uvedale's St. Germain Pears, Bequine Musque, another stewing variety, March Bergamot, and Estor Beurré, well kept.

Messrs. Rivers's collection consisted of Apples, chiefly American, grown on dwarf bushes worked on the English Paradise stock, and

was exhibited to show the effect of the warm season on the colouring and smoothness of their skins. They comprised Calville Blanche, to the merits of which attention was drawn last week; Calville St. Sauteur, Melon Apple, high coloured and very showy; Esopos Spitzenberg, Rhode Island Greening, Boston Rosset, Baldwin, Newtown Pippin, Allen's Everlasting, and some others.

Mr. Lynn sent Black Hamburg Grapes, plump and in excellent preservation; Hedsor Winter Prolific Cucumber, of the Sion House race, and from the cluster of young fruit accompanying it apparently justifying its name; and a collection of Apples, consisting of Cox's Orange Pippin, Lewis's Incomparable, Bess Pool (very sound), Sturmer Pippin, Scarlet Nonpareil, Cackle Pippin, Dumelow's Seedling, French Crab, &c.

Mr. Watson, St. Alban's, sent a seedling Apple, supposed to have been raised from a seed of Wheeler's Russet, but the Committee wished to see it again earlier in the season before passing an opinion on its merits.

Mr. Hill, gardener to R. Sneyd, Esq., Keelo Hall, sent remarkably fine fruit of the Madras Citron, along with the foliage, likewise preserves made from the green and the ripe fruit, of which the former was declared by the Committee to be the better. This exhibition well merited the first-class certificate which was awarded to it. Mr. Hill also contributed bunches of Lady Downe's and Golden Lady Downe's Grapes, to show their excellent keeping properties.

SCIENTIFIC MEETING.—Lord Henry Gordon Lennox, M.P., in the chair. The awards of the Fruit and Floral Committees having been announced, the Rev. M. J. Berkeley proceeded to remark on the subjects exhibited. A beautiful variety of *Cattleya Trianaei* first came under notice; then plants of the common *Hycinths* and *Narcissus tazetta* imported from Persia, and sent by Dr. Hooker to show the difference between the improved garden varieties and the species from which these have been derived. *Libonia floribunda*, with Correa-like flowers, from South Brazil, was next referred to, and the account of it given by Professor Morren in "La Belgique Horticole," where it is truthfully figured and described. The next subject which came under notice was a male catkin of *Wellingtonia gigantea*, from the Marquis of Huntley's, Orton Longville, near Peterborough, where there is an avenue of *Wellingtonias* upwards of 2000 yards in length, and from a tree in which the specimen shown was cut. Mr. Berkeley remarked, that although this noble Conifer had borne cones in various parts of England, this was the only instance which had come to his knowledge of its having produced male catkins, and there was now, therefore, a chance of its seeding in this country. A Gourd grown in Mr. Berkeley's garden in Northamptonshire then occupied attention; it was stated to be a variety of *Cucurbita maxima*, of which the seed had been imported from Valparaiso, to be excellent for *puces*, and to far exceed *C. ovifera* in quality. He trusted to be able to make up a considerable number of packets for distribution; and whilst on the subject of Gourds he would mention that among the Society's collections of flower and vegetable seeds to be distributed this spring, was one called the Portmanteau de Naples, a large sort, very distinct from others, and requiring the assistance of a wall to ripen it. A mould infesting the stems of Dahlias was then exhibited. This was stated to be the *Botrytis profusa* of Greville, and to be very beautiful under the microscope when the threads were freed of air-globules, which might be done by the aid of alcohol. Attention was then directed to the fungus attacking the leaves of the Pear tree, from which almost every cultivator suffers more or less, and which had been figured by Sowerby many years ago. This, which is known as *Ecidium cancellatum* or *Rustella cancellata*, had been identified by M. Ersted, a Danish professor, as being only a form of the Savin fungus (*Podosoma Sabini*), and M. Ersted had succeeded in developing the sporida of the latter on the leaves of the Pear. It was further stated that M. de Bary had found that in a similar way the Wheat Rust (*Puccinia graminis*) and the Berry Blight (*Ecidium berberidis*) were forms of the same fungus, and that therefore there was some foundation for the popular notion as to the connection of the last two. (Some account of the experiments on the identity of the above funguses was given in the "Florist and Pomologist" of October, 1865.)

Mr. W. Wilson Saunders then offered a few observations on the small group of Orchids mentioned in our Floral Committee report, and which, some, he said, might call "miseries of Orchids." Although their flowers were minute, these Orchids were not altogether devoid of some points of interest—perhaps to others as well as to botanists, and it was the duty of all Fellows to bring such subjects to the meetings. Among them was a *Leochilus*, the blossoms of which possessed the merit of exhaling a delicious scent like that of the *Heliotrope*, especially when the sun shone on them; those of another, *Epidendrum hornidum*, had a delicate perfume like that of newly-gathered Primroses; whilst *Pelecia triloba* was remarkable for the beauty of its structure. Mr. Saunders stated, that from great experience in the culture of these small species he had found them succeed best on thin slabs of wood or cork, and that these should be constantly wetted with the syringe on both sides, so as to afford a supply of moisture in addition to that which the plants obtain from the air of the house in which they are growing. With respect to *Tillandsia bulbosa*, which some found a difficulty in growing, it was merely necessary to place it on a little piece of wood, surround it with moss, and hang it up in the centre of a stove. Another *Tillandsia*—*usneoides*, hung down from trees like tufts

of moss, and would be an interesting plant for our stoves could it be brought across from the West Indies; but doing so always desiccated it so much that it would not grow. A small species of Peperomia, which had accidentally come along with some of Mr. Weir's Orchids, though but a stove weed, being of creeping habit, would run over soil or cover blocks of wood, in fact, would take any shape, and therefore might be useful for hanging-baskets and similar purposes.

No less than thirty new members were elected—a cheering sign of the increasing prosperity of the Society, and of the progressive interest taken by the upper classes in horticulture, and this increased prosperity and interest cannot fail to redound to the benefit of gardening and gardeners. The Society has passed through many vicissitudes, but now that there is so manifest a desire to extend its sphere of usefulness, if all classes will but unite harmoniously in its support, it may be made second to no other scientific body. It will then become capable of working out great results—results not of interest or benefit to a class only, but of importance to the whole community.

A PRETTY exhibition of forced spring flowers was made on Saturday, Messrs. Cuthsh & Son again contributing most liberally to the general effect. These gentlemen sent a collection of miscellaneous plants very similar to those we have noticed as being at the last two meetings, a fine collection of forced bulbs, one of forced Hyacinths, and one of forced Tulips, to all of which awards were very properly made. Besides these, they had a group of finely grown plants of the double white fringed Chinese Primrose. Mr. Young, gardener to Mrs. Barclay, of Highgate, had a first prize awarded him for a collection of six miscellaneous greenhouse plants; and Mr. Bartlett, of Hammersmith, received the second prize. Mr. Young also exhibited a collection of cut Camellia blooms, which received an extra prize; and Mr. Bartlett received a similar prize for a collection of forced bulbs.

Mrs. B. Hooke, of Fulham, sent a basket containing a group of well-grown plants of fringed Chinese Primrose, with Hyacinths in the centre, which received a first-class certificate; and the Rev. George Chere, of Papworth Hall, received a similar award for a tray of excellent blooms of Anna Boleyn Pink.

Mr. Lynn, gardener to Lord Bosten, Hedsor, near Maidenhead, exhibited a collection of fifteen varieties of Apples in an excellent state of preservation, to which a first prize was awarded.

Messrs. Lucking, Brothers, of Notting Hill, received a first-class certificate for a fine collection of forced flowers.

POTATOES.

SOME little time back I saw in THE JOURNAL OF HORTICULTURE, among the requests of correspondents, an expressed wish to know where the hybrid between the Ashleaf and Lapstone could be procured. I therefore wrote to H. Taylor, Esq., of Fencote, Bedale, Yorkshire, (who kindly sent it to me) for information. The following is his reply:—"I have made inquiry about the Potato you mention, which without doubt is the very best flavoured Potato in England. It combines many other good points. It is handsome for exhibition, smooth, a good cropper, second early, and the top not particularly large, but very handsome. It is distinct and highly spoken of by all who have tasted it. It keeps well until August. I mean new ones at midsummer, as well as old ones. It can be procured from Mr. Thomas Almond, Great Fencote, Bedale, Yorkshire, at 2s. 6d. per stone, bags included, under the name of the Yorkshire Hero Kidney. He has great demand for it, and has only fifteen bushels of it left."

Mr. Taylor supplies the following:—"Mr. Almond has another Potato, which he is increasing for sale in the spring of 1867. It is particularly early. He has it regularly in May in this cold part. It is a good cropper, smooth, free from disease, of handsome shape, distinct, top very handsome.

"We have another Potato here, most excellent. It is for winter. The flesh is white, and in flavour in my opinion slightly better than Yorkshire Hero. If you will accept a few of both the above I will send them to you, and a boiling into the bargain, so that you may taste and judge for yourself."

I will now tell you how Mr. Almond grows his early Potatoes. The land must be pretty good, and in good heart. He opens a trench, puts in long manure, sprinkles on this pigeon-dung, then gives a sprinkling of carbonate of soda. It appears that carbonate of soda has a great effect in producing earliness, and pigeon-dung forces the plant away. If this cannot be procured, substitute a sprinkling of guano.—W. F. RADCLYFFE, *Tarrant Rushton*.

INTERNATIONAL HORTICULTURAL EXHIBITION.—Dr. Seemann, having to visit immediately a portion of Central America, has been obliged to resign his Secretaryship of this Exhibition. Dr. Masters has been appointed his successor.

ROOTING VINE BRANCHES.

THE question as to whether it is judicious or injudicious to bury the stems of Vines in the border, with a view to their thus rooting more extensively and giving stronger wood than if the roots alone were covered, is certainly of importance. I planted Vines in both ways in inside borders, and observe no difference in the aftergrowth, the plants having done well in each case, and I have not courage to dig up the stems of those buried to see if these have rotted off or not.

Last spring I received some Vines from Mr. Rivers, to grow in pots standing on hot-water pipes. The rods would average, say, 9 feet each; but as the best wood and buds were near the tops, and I only wished to fruit the plants for one season, I coiled about 5 or 6 feet into each pot, and thus left only about 3 or 4 feet of the tops of each rod above the soil. The eyes broke well, and gave abundance of bunches, which ripened perfectly. By early stopping I compelled the eye next the earth in each Vine to form a cane for a future crop, and each of these canes had to be stopped many times to prevent the span-roofed house being darkened too much. I have now, from each pot, as fine bearing-like wood of these Vines as need be desired; and the pots being large, I shall be surprised if I cannot this year take a dozen good bunches from each Vine.

Is it likely I should have had such Grapes, and such wood, if the coiled stems of the Vines had died, and the plants had to depend for support on a new set of roots from a collar near the surface?—J. MACKENZIE, M.D.

[There are no rules without exceptions. If you have the chance again, would you repeat the experiment, and in the case of similar Vines, merely disbud the lower part of the stems, with the exception of one or two buds near the bottom? Choose one of these for a future stem, take a similar crop from the Vines treated in both ways, give the same treatment to each, and then let us know what difference there is in the appearance of the fresh shoots for next season.]

THE VERBENA DISEASE.—We regret to notice that a great number of the stock plants of this very favourite flower have died during the present season from some unknown cause, which has baffled the most successful and experienced growers. It is our intention to prepare a list of those sorts which have escaped, for the benefit of our readers; by this means we hope to ascertain which are the hardiest and most vigorous. We have filed a list from a grower who has lost upwards of a thousand plants since October, and we invite similar lists from those of our readers and friends who have had the good luck to preserve any Verbena plants alive. In Mr. J. Peacock's (Hough Green) collection—Velvet Cushion, Mont Blanc, Lord Raglan, Defiance, General Jackson, Pink Queen, Foxhunter, Lord Craven, Beauty, Princess Alexandra, Grand Boule de Nieve, Purple King (has struggled hard through), Mrs. Woodroffe.—(*Cheshire Record*.)

WEST MIDDLESEX GARDENERS' MUTUAL PROTECTION SOCIETY.

WE have seen how the London mechanic has raised his position in spite of the opposition of his master, but what has been done for the gardener? I hailed with delight the rise of wages in nurseries, and it was hoped that the gentry or the proprietors of gardens would follow the example; but they have not done so. Surely it must be from want of consideration; for how can it be expected that young men will always be contented to live in a state of semi-starvation? It cannot be otherwise at the present rate of provisions. The prospect of an uncertain future has lost its effect. Young men are looking more and more to the time present, and it is sincerely to be hoped that something will be done to elevate their position. They ask not the wages of the mechanic; but surely they ought to receive as much as a bricklayer's labourer. But to keep more to the point, I will describe as briefly as possible what is being done for the benefit of the journeyman gardener.

There have been three meetings at the Workman's Hall, Portland Road, Notting Hill. The first of these took place on the 4th of December, 1865, Mr. Gardiner being in the chair, and the following resolutions were put to the meeting:—

1st, It is the opinion of this meeting that the time has arrived when an advance of wages ought to be made. 2nd, That a deputation be appointed to wait upon the employers to ask for the same. 3rd, That a committee be formed with a view to take into consideration the best means to form a society.

The second meeting took place on the 18th of December; there were upwards of 150 gardeners present. The Chairman (Mr. Burley) addressed the meeting, saying that it was a fact beyond contradiction that gardeners were not paid according to their services, and he said that he, as an employer and a nurseryman, would do all in his power to raise their position, and that he would thenceforward give £1 1s. per week to every man in his employment.

After several discussions the meeting came to this conclusion—viz., "That no journeyman, from the 1st of March, would work under £1 1s. per week."

The third meeting took place on the 5th of February, a large number being present. Mr. Burley (the chairman) commenced by reading the rules (which were framed previously by the Committee). The rules are these:—

1st, That this Society bear the name of "The West Middlesex Gardeners' Mutual Protection Society," and be composed of gardeners employed by nurserymen, those in gentlemen's establishments, and jobbing and market gardeners. 2nd, That the Society's object is to raise the journeyman gardener's pay to not less than 3s. 6d. per day. 3rd, That no one be admitted a member of the Society but through the introduction of two members. 4th, That a list of members be kept in the Hall, and a list of those who are out of employment, so that employers may apply to the Hall for such. 5th, That a Committee of not less than five meet at the Hall weekly (Monday evening, 8 p.m.), to transact the business of the Society. 6th, That each member shall pay 6d. on entering, and 2d. per week afterwards, to meet the expenses of the Society, and each member to have a printed copy of the rules. 7th, That all members are requested to meet at least once a-quarter. 8th, That a Secretary be appointed, who shall receive pay, the only officer of the Society who shall receive such. 9th, That a Treasurer be elected, who shall receive and pay all sums for the Society. 10th, That advertisements be inserted in the *Gardeners' Chronicle*, *JOURNAL OF HORTICULTURE*, and *West London Observer*, inviting employers to apply to Mr. Odell, Workman's Hall, Portland Road, Notting Hill, for competent gardeners.—J. W. B.

BOILERS.

I AM glad to see that the subject of boilers for heating horticultural buildings is being discussed in your columns. I have no doubt that it will tend to throw light upon the subject, and be the means of enabling the amateur and gardener to arrive at correct conclusions, detect the faults and failings on the one hand, and discover the advantages on the other, and then, after weighing the whole, to fix upon that form which will prove to be both durable and efficient.

Each kind of boiler, perhaps, has some advantage peculiar to itself, but it sometimes happens that these advantages are gained by sacrificing others of more importance. I have, as a gardener, had many years' experience with the most popular forms now in use. I have worked the old saddle, the cylinder, the conical, the upright and the horizontal tubular, the double-decker, and one called the mushroom in consequence of its shape somewhat resembling that fungus, and, last of all, I have had fixed one of those called the terminal saddle, which I see is now being advertised in your paper.

The general result of my experience leads me to confirm what McIntosh has previously said: "The more whimsical the form the greater the expense; the more intricate and complicated the more likely it is to get out of order, while such forms are not calculated to stand the wear and tear of those which are of more simple construction."

To judge rightly of the merits of any boiler it is necessary to have certain distinct ideas impressed on the mind; for instance, the amount of surface *over* the fire, which is of much greater importance than the surface exposed to the fire. The largest amount of heat ascends, and its greatest effect will always be produced on that part which is immediately over the fire.

The position and arrangement of the flues are seldom taken into account, but it is a matter of great importance. The flues should be so arranged as to prevent as much as possible the escape of heat into the chimney. The fact that heat will rise, quite convinces me that the opening for the flue should not be at or near the top of the boiler. If so, the heat and flame ascend to the highest point, then escape through the opening and are lost.

The easy access for cleaning-purposes to every part of the

boiler exposed to the fire is very important. This must be patent to every gardener, for when the iron is coated with soot very little effect can be produced upon it by the fire.

Then, simplicity of construction should be secured, for it best enables a boiler to bear the wear and tear of a hard winter's work, and yet remain sound and good.

Any one bearing in mind these four conditions will have a good guide for the selection of an efficient boiler.

For my own part I do not like the tubular boilers. I admit that they will heat a great length of piping, but that is only accomplished by a tremendous consumption of fuel. They are very wasteful; the furnace being formed of brickwork absorbs a great amount of heat, and the flame seems to glide up the vertical tubes without producing a proper effect, passes into the flue, and is lost. The conical is open to the same fault; the opening for the flue is just at the top, and I have seen the flame come out and reach nearly a yard up the chimney. The loss of heat must have been fearful. The cylinder has just the same faults as the above. The two-decker requires a strong fire, and a constant flame must be kept up to wrap round the lower part and come in contact with the top, otherwise it is ineffective. The mushroom is not worth further mention.

Among the many boilers which I have tried, I certainly prefer those of the saddle shape. This comes the nearest to my ideas of a good boiler, and, if properly set, is not easily beaten. If after three months' trial I am justified in giving an opinion, I should say that the terminal variety of saddle is a decided improvement on the old form. This is very simple, of great power, and very moderate in its consumption of fuel as compared with the amount of work done by it.—A HEAD GARDENER.

In your impression of the 6th inst. I observe that Mr. G. Cooper has expressed a desire for information as to the experience of those who may be possessed of tubular boilers. As he has referred to my name in connection with a few observations I made about three years ago relative to the merits of Clarke's water-jacket boiler, in justification of those observations I am glad to be able to affirm that my subsequent experience of its capabilities tends to justify the anticipations which I entertained as to its efficiency and durability. Its exemption from the peculiar fissure, which appears to be incidental to those tubular boilers instanced by Mr. Cooper, is calculated to render it a boiler of superior merit—that is, as regards non-frangibility.

As a preventive of soot or other matter accumulating on any portion of the boiler, I found that the simple application of an occasional extra brisk fire effectually prevented that evil, excepting in one instance, about two years ago, when I found it necessary to examine and scrape off a substance resembling coal-tar, which I attributed to the nature of the coal, in conjunction with the foul state of the flue which conveys the smoke along the back wall of one of the vineries, with the view of making up for the deficiency of hot-water piping in that house. I do not, however, absolutely advocate the system, as a more effectual draught is secured by conveying the flue vertically over the boiler. It also precludes the inconvenience of cleaning, and the dangers incidental to flues, crazy ones especially.

It is not my present purpose to discuss the comparative merits of boilers nor improvements on them—with one exception—that is, my objection to water-bars, the employment of which I believe to be wrong in principle, inasmuch as they tend to obstruct the thorough combustion of the fuel, owing to the rapid conduction of the metal; and, further, I believe they prevent the air supplying the oxygen necessary for combustion entering the fire as hot as possible; but the evil may be somewhat remedied by keeping the water-bars as clear of ashes as may be practicable, hence I doubt the advantage of water-bars.

At some future time I hope to be able to offer a few observations on the merits or demerits of another kind of boiler which it is in contemplation to employ here. In the meanwhile, like Mr. Cooper, I trust that others may be induced to favour us with their experience of boilers.—W. GARDNER.

WORK FOR THE WEEK.

KITCHEN GARDEN.

The operations recommended here periodically cannot, perhaps, always be pursued with propriety at the precise period indicated; the position of the garden, as well as the nature of the soil, must be considered, and if these circumstances are unfavourable, they may be permitted, as exceptions, to modify the general rules. The preparation of the various quarters

designed for main crops must be persevered in whenever the soil is dry enough to admit of being trodden on without being too much consolidated. This is of great importance on heavy stiff soils, and those who have such to deal with should take advantage of every dry day that occurs. On such soils, too, it will be quite advisable to defer sowing main crops for a week, and even a fortnight; but on light dry soils the sooner the main crops are sown the better, because such soils are most liable to suffer from drought should it occur, and, therefore, the sooner the crops can be well established the better will they be able to resist its effects; if, on the contrary, the season is a wet one, they will still be in the best possible condition to profit by it. *Beans*, sow the main crops, regulating the quantity by the demand. *Cabbage*, make a first sowing of the true Drumhead Savoy; also, a small sowing of the true Grange's Early White Broccoli made now will come in useful by-and-by; sow another patch of early Cabbages. *Celery*, the first sowing must be pricked out as soon as it can be well handled, and another sowing made of both Red and White. *Cauliflowers*, prick out the young seedling plants, as also plants of Lettuces, either on a warm border or a gentle hotbed, and shelter them for a time with hoops and mats. *Cucumbers*, add fresh soil as the roots of the plants appear at the outside of the hill, lay it close to the side of the frame for a few days before it is required that it may become warm. *Kidney Beans*, if there are any in the vinery or Peach-house, keep them frequently syringed to prevent, if possible, the appearance of the red spider; if already attacked, the better plan will be to remove them to a pit or house where no injury can be done to other plants. *Onions*, the principal crops may now be sown, the Deptford, old Brown Globe, James's Keeping, White and Brown Spanish, are good sorts; sow them in beds 4 feet wide, and in drills 9 inches apart, and, if you can obtain it, sow some charred refuse along the drills previous to covering in. When the beds are raked smoothly over, and the surface is a little dry, pass a wooden roller over them several times, as Onions will bear a considerable amount of consolidation in the soil. *Peas*, sow the main crops of the summer sorts, together with a few of the later kinds. The ground on which Peas are sown comes in well for Celery. The rows, as advised, should be 6 feet apart; this distance might be increased with great advantage, and the intervening spaces sown with Spinach, early Turnips, Radishes, and Lettuces, all of which would come off in time for the Celery. *Parsley*, sow a good breadth of the best Curled, the finest is obtained by transplanting it at 1 foot apart on rich, deeply trenched soil. *Potatoes*, plant more early sorts, and reflect whether it would not be advisable, under existing circumstances, to plant both early and late varieties earlier than hitherto. Those who plant earliest will stand the best chance of ultimate success. We would also recommend whole tubers in preference to cut sets. Persevere in hoeing, forking, or otherwise surface-stirring among advancing crops.

FRUIT GARDEN.

Pruning should now be quite finished in every department, and whatever nailing is left undone must be completed immediately. See that newly-planted fruit trees are properly staked and mulched, and, after high winds, it is necessary to look round them, and press the earth gently round the base of the stems. All danger of very severe frost being over, Figs may have the coverings completely removed, and be neatly pruned and nailed; do not crowd them with wood.

FLOWER GARDEN.

The digging of flower-borders must now be commenced in good earnest; in performing which, use the fork in preference to the spade. All kinds of herbaceous plants may now be planted, either to fill up empty spaces or to make new plantations in borders which have undergone a course of preparation. Pay particular attention to the arrangement of these as regards height, colour, and succession of flower. Proceed with the planting of hardy Roses. If the plants be strong, prune their heads according to their classes, as advised last week; if weak, cut them back to two or three eyes, shorten all long and straggling roots, and prune away such as may be bruised or broken. If the ground has not been prepared as previously directed, we would recommend pits to be made, and to two pits give a wheelbarrowful of rotted dung and good loam well mixed. By all means avoid deep planting. Have a quantity of stakes and tarred twine close at hand, and stake each plant whether it be a dwarf or standard; many losses are incurred, or much injury sustained, when this is neglected. Continue the pruning and nailing of climbers, also the arranging and tying of such as are against trellises, verandahs, &c.

GREENHOUSE AND CONSERVATORY.

The Poinsettias done flowering in the conservatory should be removed to other houses at work to make nice wood from which cuttings may be made. The *Euphorbia jacquiniiflora*, too, may be removed to heat, but not pruned if cuttings be an object; they will break better without pruning, being liable to bleed. The routine here will now be a constant exchange with the other houses or forcing-pit. Nothing should be allowed to remain unless in blossom or in fine health. Let the heat be moderate. Secure, if possible, a small amount of atmospheric moisture without drip. Those who follow up the cultivation of Pelargoniums should have their plants duly attended to in regard to staking out, &c. They will bear shifting the moment the blossom-bud is formed in the terminal points. Water very moderately after shifting until the pot is half full of roots; those not shifted will take water freely. *Epacris*, *Heaths*, and others of the more hardy plants in or coming into flower, should be kept near the openings for ventilation; while *Roses* and other forced flowers in the conservatory, and fresh from the forcing-pit, require the warmest end of the house, and ought to be kept free from currents of air. This is a good time to make memoranda of the best varieties of forced bulbs, especially Hyacinths and Tulips.

STOVE.

The fires should be kept sufficiently lively in the early part of the day to allow of a free circulation of air. Every leaf in the house should be dry for an hour or so at midday, after which period the air should be gradually withdrawn, and atmospheric moisture renewed. This treatment will be found to suit the majority of stove plants.

FORCING-PIT.

This is a good time for propagating many plants by cuttings, seeds, and grafting, and the forcing-pit is the best place for this work. Seedlings already up ought to be potted off as soon as they can be handled. Let every shelf and corner of this pit be filled with plants as others in flower are removed from it.

PITS AND FRAMES.

Those who have not yet attended to the propagation of plants for bedding out must now begin with all possible speed to put in cuttings of Geraniums, Petunias, Verbenas, Fuchsias, Salvias, &c., so as to have good plants for bedding out in May. Pay due attention to shading, watering, and to topping back weak and straggling shoots, so as to form robust bushy plants. They will give a greater amount of satisfaction when they come to be transferred from the pots to the flower garden, and will amply repay all the little extra care and trouble. Have any snails or slugs found snug quarters in this department? If so, they will do much mischief during the mild weather if you do not look for and destroy them as soon as possible.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Did very little here as yet in the open ground, as our soil is still too wet to be dug or moved nicely. Proceeded with raking together a few tree leaves, which are very scarce this season. Placed a little old rough hay that we saved from some parts of the pleasure grounds over the heads of Broccoli coming in nicely. A few heads that were overlooked were injured in the sharp frosty mornings.

Ice.—The frost was severe enough in the mornings in the beginning of the week to have given employment for the iccart if the days had been dull; but the very bright sun following the frost dissipated all the ice that was formed in the previous night, so that we could collect none beyond what was needed for filling the receptacles for present use. In Mr. Robson's observations on storing ice, &c., there is much room for thought and inquiry. It often happens that theory and practice do not quite agree; so much so, that the result is very different from that which we should have expected from the general theory. We own that we have sometimes been non-plussed with ice-houses, some of the roughest and simplest-keeping ice well, and others constructed with great care scarcely ever keeping the ice any length of time. There can be no doubt that moisture or vapour, considerably above the freezing point, melts ice very rapidly. We recently alluded to ice in wells sinking more rapidly after it had fallen below the level of the door-way. We may mention two facts as recollections of ice-houses. One house, by our own recommendation, and chiefly for sanitary purposes, was dug out of the side of a hill, former

chiefly of softish chalk stone. There was a drain from the bottom that prevented anything like stagnant water; but the rains trickling through and down the hill so moistened the chalk that the ice, amounting to twenty-five or thirty loads, well packed, was all gone by July. The place altogether was small. The circumstances of the benevolent gentleman did not warrant a large outlay; but it took very little labour to widen the place to take out more chalk, and as there was a lot of old stnds, and tarred boards from an old barn, fit only for firewood, with these the sides and top were covered, 1 foot from the chalk. Any holes were daubed-up with thick clay, mortar, and chopped straw, and, the door being left open, when all was tolerably dry a thin coating of hot tar was given to the old boards, and all was quite dry before winter. For several years the house was capable of keeping ice until January and February. We afterwards learned that when the boards would stand no longer the ice did not keep so well, though packed round with straw. The straw became damp, and then the ice melted, leaving only a cone in the centre. It was found that the top of the house, formed of the natural chalk, with a covering of earth and rough herbage on the surface, seldom showed signs of damp inside, whilst the side walls of chalk always became moist in the spring. It was suggested to run up inside a double-sparred fence of old hurdles, &c., with a space of 8 inches between the two sides of this fence, and this space was stuffed firmly with dry fern and straw, the inner fence being fully a foot from the wall. Here, again, the ice kept fairly when thus isolated from the damp wall. It would be well if any person disposed to try a hole in a chalk hill were first to make sure whether the chalk would remain dry in winter and spring.

The other fact came under our notice on our last visit to Trentham, when staying for the night at the admirable hotel at Stoke station. On going round the grounds of the hotel in the morning, admiring the fine sheet of water, and noticing a picturesque mound in the garden, the housekeeper informed us that it was their ice-house, that it had been made at a great expense, that due care had been taken to keep it dry, to ventilate it, &c., but that the ice could not be kept in it for any length of time in summer, and that a large sum was spent every year in obtaining ice from Liverpool and other places. We were very anxious to examine the house, but the time-table of the trains could not be trifled with, and as yet we have no more light on the subject, than just the idea that from the proximity of the fine piece of water, damp might have been the chief cause of the failure, and that a double-walled house, all above ground, with at least a foot between the walls, either left open or packed with dry sawdust, and a thick-thatched roof reaching nearly to the ground would have been more likely to have answered. As the subject is of some importance, it would be well if some of our gardening friends in the vicinity would ascertain if the ice-house at the hotel is still so far a failure, and if so try and trace the cause, as if we knew the cause of failure, or the remedy found effectual in such circumstances, it would be useful for future guidance.

Prepared an earth-pit for receiving as soon as possible some fermenting material for early Potatoes, &c. Gave air in sunshine, and when mild, to Potatoes in pots becoming ready for use, and to successions in frames. Did the same with young Radishes, Carrots, &c., protecting them at night with a little rough hay saved from the shrubby parts of the pleasure ground. Gave abundance of air to Peas under protection, as our ground is not fit to receive them out of doors, and we do not yet choose to turn out any of the dwarf Tom Thumb into the orchard-houses, where they did so well last year, because we are keeping these houses open night and day, when it is safe to do so, from the absence of wind, in order that the frosts may nip the trees a little, and keep them back. As yet we have only noticed a few buds of Peaches beginning to show colour, and we want none to open in these unheated houses for some time yet. Put some unused iron rails on the top of pots in the front of the Peach-house, covered them over with moss, and on these set a row of 12-inch pots, furnished with nice stubby plants of the Tom Thumb Pea, and when, some time hence, they are removed to the orchard-house to perfect the fruit, the same improvised shelf will come in for Strawberries or Kidney Beans, though we generally keep the latter out of our houses. Sowed more Kidney Beans in five-inch pots, to be ultimately planted out or transferred to larger pots. Had to shut up a cat in the Mushroom-house, for, after pretty well clearing it of snails and slugs, a colony of mice found the small sweet Mushrooms more palatable than any bait we could give them.

Kidney Beans, Cucumbers, &c., rejoiced in the sunshine that attended the frosty mornings. Cucumbers needed a little shading in the brightest hours of the clearest days, the sudden transition from cloudy foggy weather to clear sunshine affecting plants very much in proportion to the high temperature in which they are growing. Hence the importance of keeping the temperature as low as to be safe in dull weather, as heat without bright light leads more to mere expansion than addition of substance; and the thinner and more delicate the foliage, the less can it stand at once a sudden demand of evaporation in sunshine, and the roots cannot at once meet that sudden demand. A slight shade, or even a syringing overhead, is generally better in such circumstances than any root-deluging, as either will prevent an excess of evaporation until the reciprocal balance between roots and leaves is restored. For all tender plants in heat a slight shade is more important in these sudden changes from dull weather to bright, than at any other time.

Scorching.—In the middle of a fine Cucumber leaf on a plant growing in a pit, we noticed yesterday a piece about the size of a two-shilling-piece as thoroughly scorched as if a hot cinder had been laid on it, and it was some time before we could find out the cause. At last we found a blister on the glass, near the front of the sash, and a long way from the scorched leaf, so that from its position the one could have no influence on the other in the middle of summer, but on holding a pole in a line with the blister on the glass and the scorched piece of the leaf, we found the line to be identical in position with the rays from the sun a short time after noon. The blister being daubed with a little paint, will act no longer as a concentrating lens. Much of the cheap plate glass is well studded with these scars, and hence scorching and burning are often attributed to the wrong cause.

Went on with other forcing much the same as last week.

FRUIT GARDEN.

Vine-borders.—We intended to have fresh-bordered a part at least of a viney, but found we could not obtain the necessary material in time, and, therefore, must defer it. Meanwhile scraped off the black exhausted soil from the surface. Gave a surfacing of nice fibry manure, and covered with litter to keep out the cold, placing the warmest next the new soil, and using a depth of about 15 inches altogether. We generally do this in the autumn, or at least much earlier; but as we do not mean to force much, the covering will do in the meantime. The buds are beginning to show from having been forced earlier previously. In the present case we could not help ourselves as to material, having had nothing on the border but a little stubble to keep frost out, and that is now laid on the surface of the litter again.

With Vine roots wholly out of doors we prefer covering the border, so as to secure a temperate heat in it before we begin to excite the tops in early forcing, and more especially if the roots are near the surface. We do not conclude, however, though we have had scores of hotbeds and frames or Vine-borders, that there can be no danger from such hotbeds if not looked after. We know that heat from such beds goes down slowly, but it does go down—so much so that, perhaps, three times in the course of our lives we knew of roots of Vines being burned, and rendered useless, from a huge bed of fermenting material on the border. When much of this heating is done it is a good plan to have trial-sticks and thermometers at different depths in the border. In early forcing we have several times resorted to a mode which we first saw practised by Mr. Daniel Judd. Iron pipes were laid longitudinally along the border some 2 or 3 inches from the surface, with ends open outside the border, the openings being stuffed with a ball of moss or a plug. In this piping a thermometer was placed, fixed firmly to a long slender pole. On pulling out the pole so as to see the thermometer, you could always see the degree of heat at that depth from the surface. If that stood at from 70° to 73° there would be no danger, as from 8 to 12 inches deeper the heat would be reduced 5° or so. Where such attention cannot be given it is much safer even for early forcing, when practicable, to cover the borders early in the autumn with about 15 inches of dry litter or fern, and so as to throw off a good deal of the wet. If covers or canvas can be used for the latter purpose so much the better. This will secure a temperate heat in the border, with no danger of overheating. To secure such an advantage, however, from mere dry litter, the covering must be applied before the ground is cooled, so as to retain a portion of the summer heat—that is to say, put the covering on the border from the middle to the end of September.

Strawberries.—In sunny days drew a brush and a dry hand

over plants in bloom and setting. We had the most of our outstanding pots in an earth-pit, set on or plunged in leaves, and so that we could protect them with old sashes or hurdles, &c. We have escaped pretty well until the other night, when the mice began on the crowns in earnest, rendering from twenty to thirty pots useless. There being a considerable quantity of litter for covering, and the pots being set with tree leaves packed between them, it was very doubtful whether we could exterminate the mice before doing more damage, so that we have moved the plants out and set them in the orchard-house, without anything to protect the pots, but if the weather prove very severe, we can throw a little rough hay over them. The Strawberry plant will stand a good amount of cold, but plants in pots to be forced should never have the pots hard frozen, as it greatly injures the roots. If the pots are plunged they are not so apt to be injured. The above hint as to mice may be useful, especially if severe weather come. One gentleman told us last season, that out of eight hundred plants in pots fully five hundred were rendered useless by the nibblers in a few days. Both mice and rats will commence on the best and hardest crowns. Plants protected from frost and bad weather are more liable to be thus attacked than those grown in the open air.

Took in more plants into pits and houses, where room could be found for them near the glass. This is the only mode by which many of us can produce early Strawberries; and though good Strawberries are always useful and desirable, the make-shifts to secure them are often attended with a great amount of labour, and not unfrequently with injury to the permanent plants of the house. We have seen Strawberries taken from a series of shelves in an early Peach-house, that would have much more than paid the labour and fuel in forcing the house, without the value of a good crop of Peaches in addition; but though the shelves were removed before the Peaches began to ripen, the shade of the shelves in the earlier part of the season did nothing to add to the vigour and robustness of the trees. A good Strawberry-house, such as that at Enville, or the kind recommended by Mr. Ingram, is very desirable when it can be obtained. Such houses could be used for many purposes when the Strawberry season was over.

Orchard-houses.—Kept them open night and day when we could do so without dread of winds. The trees on the wall have been tied to the nail-studs, and most of those in pots have been staked and set in their places. Few buds as yet are showing signs of opening, and they will be early enough. It is easy to bring them on rapidly, if wanted, after the fruit is set, by early shutting up. An enthusiastic amateur told us the other day that his trees were coming into bloom. We would rather that rude March would show a little of the temper he was in before the blooms in unheated houses opened. If the weather should continue mild, or no more frost occur than we have had, he will be all right with his early-blooming trees. If a severe frost, say of 20° below freezing point, should come in March—and that has been the case in times gone by—the only safety for such trees would be a close, still atmosphere at night, and, if danger were apprehended, a few small charcoal stoves in the house. An Arnott's stove, a small flue, or even a hot-water pipe in such houses, will be useful in such an emergency, if used at no other time.

The first quiet dull day that we can spare the time, the trees will all be syringed with the sulphur-and-lime mixture alluded to the other week. Very often these precautions do away with being troubled with insects much during the season. Prevention in all such cases is ever better than cure. The way in which insects come to a place, or make their appearance, is often as inscrutable as the breaking out of the dreaded rinderpest. We recollect sometimes visiting two gardens about ten miles apart. In one you could scarcely go through, especially in the tropical houses, without getting mealy bug on your clothes if you brushed accidentally against the plants. The other garden was singularly free of this and of other insects. All at once the mealy bug appeared in this second garden too, although no new or fresh plant had been introduced for more than a twelvemonth. One or two young men had gone from the first to the second named garden in the course of the year as visitors, and it is possible they might, quite unintentionally, have carried a brood with them on their clothes.

The rough-growing Figs in a low house are scarcely forward enough yet to enable us to prune them, which pruning will chiefly consist in taking out the worst-placed and most barren of last year's shoots, and stopping with the thumb and finger nails, or a sharp knife, the terminal bud when it is from ½ to

1 inch in length. Went over trees in the Peach-houses, removing the foreright and other shoots, and merely stopping a number more, so as to give no sudden or severe check to the growing powers of the trees; we prefer removing these extra shoots at several times instead of at once. The fruit being set, we use a few evaporating-pans on the pipes now; but in the dull weather we use little fire heat, being content with an average temperature of from 50° at night to 55° during the day, with a rise of from 10° to 20° from sunshine in bright days after a little air has been given. When the day promised to be sunny after frost, put on no fire in the morning, and thus a minimum of cold air was only necessary to be admitted. There is nothing more trying to early-forced plants of all kinds than the meeting together of a fierce sun heat and a strong heat in the heating apparatus. Letting in a large amount of cold air under such circumstances subjects the plants to another extreme. Labour and cost may often be saved from a careful noting and forecasting of the weather, which most people can do pretty accurately at those places with which they are long and intimately acquainted.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Little doing as yet out of doors.—R. F.

DEATH OF MR. ROBERT OSBORN.—We regret to have to announce the death, on Friday last, of Mr. Osborn, at the Fulham Nursery. He was in his 84th year.

COVENT GARDEN MARKET.—FEBRUARY 24.

SUPPLIES continue abundant, and the demand is good but not brisk. Importations from abroad are kept up, and consist of the same articles as mentioned in previous reports. Black Grapes consist almost entirely of Lady Downe's and Barbarosa; White, of Tokay, Trebbiano, and a few Muscats. Pears for the dessert are scarce and confined to Bourré de Mance and Easter Bourré; Apples to Cockle Pippin, Nonparcils, Golden Knob, Fearn's Pippin, and one or two others. Of Asparagus there is a rather short supply; but Rhubarb and Sea-kale are plentiful. It is seldom there is any fluctuation in the price of Garlic, but the demand which has sprung up for it as a remedy for the cattle plague, has trebled the price and rendered it difficult to be had. Potatoes still pour in in large quantities, and there is a heavy stock on hand.

FRUIT.

	s.	d.	s. d.		s.	d.	s. d.
Apples..... ½ sieve	2	6	to 4	Melons..... each	3	0	to 5
Apricots doz.	0	0	0	Mulberries.... pnnnet	0	0	0
Cherries..... lb.	0	0	0	Nectarines..... doz.	0	0	0
Chestnuts..... bush.	8	0	16	Oranges..... 100	4	0	10
Currants, Red ½ sieve	0	0	0	Peaches..... doz.	0	0	0
Black..... doz.	0	0	0	Pears (kitchen). doz.	4	0	8
Figs..... doz.	0	0	0	dessert..... doz.	4	0	8
Filberts..... lb.	0	0	0	Pine Apples..... lb.	8	0	12
Cobs 100 lbs.	0	0	160	Plums..... ½ sieve	0	0	0
Gooseberries. ½ sieve	0	0	0	Quinces..... ½ sieve	0	0	0
Grapes, Hambro lb. }	10	0	18	Raspberries..... lb.	0	0	0
Muscats..... lb. }	10	0	18	Strawberries..... oz.	5	0	7
Lemons..... 100	6	0	10	Walnuts..... bush	14	0	20

VEGETABLES.

	s.	d.	s. d.		s.	d.	s. d.
Artichokes..... each	0	6	to 0	Leeks..... bunch	0	3	to 0
Asparagus... bundle	10	0	14	Lettuce... per score	1	0	2
Beans Broad. bushel	0	0	0	Mushrooms... pottle	1	6	2
Kidney..... 100	3	0	4	Mustd. & Cress, pnnnet	0	2	0
Beet, Red..... doz.	2	0	3	Onions..... per bushel	3	0	5
Broccoli..... bundle	1	0	2	Parsley..... ½ sieve	1	0	1
Brus. Sprouts. ½ sieve	2	0	3	Parsnips..... doz.	0	9	1
Cabbage..... doz.	0	9	1	Peas..... quart	20	0	0
Capsicums..... 100	0	0	0	Potatoes..... bushel	2	6	4
Carrots..... bunch	0	4	0	Kidney..... doz.	3	0	4
Canliflower..... doz.	2	0	6	Radishes . doz. hands	0	6	1
Celery..... bundle	1	0	2	Rhubarb..... bunch	0	9	1
Cucumbers..... each	2	0	5	Savoy..... doz.	0	9	1
pickling doz.	0	0	0	Sea-kale..... basket	2	0	2
Endive..... score	1	0	2	Shallots..... lb.	0	8	0
Fennel..... bunch	0	3	0	Spinach..... bushel	3	0	4
Garlic..... lb.	2	0	0	Tomatoes..... ½ sieve	0	0	0
Herbs..... bunch	0	3	0	Turnips..... bunch	0	4	0
Horseradish . bundle	2	6	4	Vegetable Marrows dz.	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

RABBIT TRAP.—R. T. would be obliged by the description of a trap to catch rabbits. He finds Miles's vermin trap of no use for catching rabbits.

MIRTLTON (J. Fenwick).—The berries are ripe in December. February and March are the best months for sowing the seeds. They succeed best on the Apple tree. Your best chance for obtaining seed would be to apply to some one in Herefordshire, or Devonshire, the orchard districts.

COLONIAL CULTIVATION (A Gardener).—The journal you mention must not be transferred to our columns. We will take an early opportunity to publish some information on the other subjects you mention.

MARKET GARDENING (Chester).—There is no doubt that "first-class fruit will sell well in London at the right time," but you must go to Covent Garden Market and arrange with some of the fruiterers there for its sale. If you could find a market for your produce near home, you would avoid risks and carriage expenses.

LEAN-TO GLAZED HOUSE (P.).—For your house, 45 feet by 12, a saddle-back boiler costing from £3 10s. to £4 would suit you, and from two to four rows of four-inch pipes, according as you merely wished to keep out frost, or to force moderately, or early.

ANGLE OF Vinery ROOF (E. C. Dyon).—For general purposes, and as combining most advantages, the roof at an angle of 45° would be best, then the height of the back wall above the front wall-plate would be the same as the width of the house. Such a house will do for Grapes at all seasons. Sir Joseph Paxton's plan answers very well if the ventilators between the sashes are in two or three pieces instead of one.

GROWING MEALY POTATOES.—Will "W. Ross, Herefordshire," be good enough to inform me when, and the manures named by him at page 128, are to be applied? The ground on which I might try them has, some of it, been manured. In naming "manure" gardens, does he mean vegetable or kitchen gardens. Also, the cost of the manure per acre, and does it retain its properties for more than one season?—L. G. H. "In reply to 'G. P.,' I do not give much importance to the fact of how the alkali is applied, provided a sufficient quantity be within the reach of the plant. If sown broadcast more is required, and the alkalis being very soluble, in a wet season they would soon be carried beyond the reach of the plants. Impressed with these views, I have used as much dung as available, and then when planting ordered a handful of the mixture (the alkalis named, with guano or superphosphate), to be placed between each set. The last two dry seasons I have found the alkalis, &c., not all dissolved when the Potatoes were raised, but enough to insure mealy Potatoes. Our stock of Flukes being nearly used up, I ordered that the Skerry Blue should be cooked. It is rather a coarse, round, deep-eyed Potato, but upon the table, two days ago, the Potatoes were as mealy, white, and fine as any Hibernian could desire—I should say, perhaps, vegetarian, for I have for nearly twenty years avoided the use of flesh as an article of diet, and of all vegetables the Potato is my greatest friend; therefore, I have made it my study how to grow healthy, fine, mealy Potatoes. That I have succeeded is proved by the fact, that if I have any to sell the dealer near will give a much higher price for my Potatoes than for those of any one else; and in the dry autumn of 1864, my cart, loaded with fine Dalmahoy's, was run after as a striking sight by people who were taking up Potatoes not much larger than boys' marbles. To save further trouble, I may state that the alkalis at the prices named have been supplied to me by William Hunt & Sons, Lea Brook Alkali Works, Wednesbury, Staffordshire.—W. Ross."

PLANTS INFESTED WITH INSECTS (S. E. E.).—Neither on the *Aceratum* nor *Geranium* leaves is there any trace of insects beyond the after-effects of red spider on the former, and of thrips and red spider on the latter. The air of the house must be exceedingly dry and hot, and much too close. Give air daily in mild weather, and employ no fire heat except to keep out frost. A good syringing or two daily for a fortnight will make the *Aceratum* all right. Fill the house with tobacco smoke on two consecutive evenings, and syringe the plants in the morning. Be careful to have the foliage dry before fumigating the house.

CYBERIARIS FOR BEDDING OUT (E. S. W.).—The seed, sown in the end of January in a greenhouse, may grow. It would have been better placed in a hotbed. When the rough leaves appear the seedlings should be pricked off an inch apart into pans, and when they fill these, pot them off into 48, or 44-inch pots, and when established in these harden off, and finally plant out in beds of good rich soil early in June. If kept well supplied with water, and the surface mulched with an inch of rich compost in the beginning of July, they will, as we have proved, flower in autumn.

PLANTING (H. J. Jackson).—The nurseryman you name we consider quite trustworthy.

FLEELESS STOVE (Dalestonia).—There is no stove without a fine that can be used in a greenhouse without injuring the plants.

RICINUS—FERDINANDA EMINENS—YUCCA OLORIOSA—WIGANDIA CARACASANA SEED SOWING (Zeta).—The seed of all should now be sown in pots, or pans, well drained, and three-parts filled with a compost of turfy loam two-thirds and leaf mould one third, with a free admixture of sand. Sow the seeds thinly, and cover with a thickness of soil equal to their diameter. Give a gentle watering, and place the pots in a hotbed of 70°, and maintain an atmospheric temperature of from 60° to 85° by night. Keep the soil constantly moist but not wet, and when the plants appear admit air and keep near the glass to prevent their being drawn up. When sufficiently large to handle, pot them off singly in small pots and grow on in the hotbed, shifting them as they require it, and finally harden off and remove to the greenhouse. The *Ricinus* will be of sufficient strength by the end of May to plant out in sheltered situations in the flower garden; but we question whether the others will be sufficiently strong to plant out in the first year. They should be continued in the greenhouse until they are so, and planted out from May to October.

CUTTING-IN INDIAN-RUBBER TREES (S. S.).—You may cut back the trees as far as you like and they will shoot again, and now is a good time. We have cut them back and found no difficulty in respect of their bleeding. We do not know what will prevent their doing so.

WIRE NETTING TO EXCLUDE RABBITS (W. M. G.).—Netting 24 inches high is sufficient to keep rabbits from gardens so far as height is concerned, but they soon find or make a way under it. We have some netting 2 feet 6 inches high, and also some 2 feet, and the rabbits never jump over either height. The main point is to fix the wire so low that an inch or two may be covered with soil, for they soon scratch a way for themselves when the wire is a little above the surface; but when it is below this they try to make a way beneath the netting, but finding the wire they give up the attempt.

BOOKS (A. M. T.).—If you send twenty postage stamps and your address to our office, and order Keane's "In-door Gardening" you will have it sent free by post. It details the work to be done in the greenhouse each week in the year.

WEEDS ON GRAVEL WALK (F. H. L.).—The best plan would be to have the walks turned next month, picking them up and turning the surface down as deep as the gravel will allow; from 4 to 6 inches is a good depth. A good salting would destroy the weeds; but if this were done in April they would re-appear by autumn, if not sooner. The chief cause of weeds appearing on walks is these becoming covered with soil on the surface. Walks should be turned at least every other year, and this will do more towards keeping them clean than continually disturbing the surface with a Dutch hoe, and much hand-weeding is saved. For further remarks on the destruction of weeds we refer you to what was said at page 151, in answer to another correspondent.

IPOMEA LEARNI PRUNING (J. Bayley).—The new shoots would start much more strongly if the old were cut down to within two or three eyes of the old wood or stem. Your plant having three or four stems, we should cut back two of these to two or three eyes, and reduce the others by one-third of their length.

GESNERAS POTTING (Idem).—The tubers, potted in March after having had a rest, would flower in September. We have them now finely in bloom, and as we wish to have them in bloom earlier next year, we shall withhold water altogether, and this you may do without injuring the roots. They will now be formed. The single-flowering *Hibiscus* most commonly met with is *Hibiscus rosa-sinensis*.

MEDAROMA TELIPERUM CULTURE (H. N. B.).—Yours being a young plant it should be potted early in April, using a compost of three parts of sandy peat or heath mould, and fibry loam and silver sand each one part. Provide good drainage, and do not give a large shift. Water carefully for some time after pottling, giving a sprinkling of water through a fine syringe on sunny afternoons. Stop the shoots if the plant grows straggling, but do not after June if it is to bloom in the following year. After May it would do better in a cold pit, tilting the lights back and front, and should be removed to the greenhouse in good time—say about the end of September, placing it near the front lights and not far from the glass, at all events with no creepers between it and the glass. It likes air, but as with all or most New Holland plants, cold frosty currents are prejudicial to it; and, therefore, in frosty weather it should be given at the back of the house. If your plant is old and showing flower, do not pot it until the bloom is over, after which it should be kept rather dry and cool for a fortnight, then cut it back pretty closely, leaving, however, enough of last year's shoots for new growths. Keep rather close, and when it has made new shoots a couple of inches long, pot it, picking away any old soil, but without injuring the fibres, and affording efficient drainage. Do not give a large shift, and pot with the neck of the plant rather high. After pottling keep close and shaded until the roots are working in the fresh soil, then gradually remove the shade and give more air. Slight shade may be given on bright days up to August, when air and light are necessary to ripen the wood well before winter. It blooms from the points of the shoots, and must not be stopped after June.

WOODLICE IN FERN CASE (H.).—Take some large sound Potatoes, cut them in two lengthwise, and with a knife scoop out in the centre of the cut part a cavity of from half to three-quarters of an inch. The pieces being laid on the flat or end side, there will be a hollow into which the woodlice will find their way, and there they will remain till after daylight. The Potatoes thus prepared are to be laid within the case at night, and in the morning the woodlice will be found secreted in the hollow of the Potatoes, from which they may be scraped off into a basin of boiling water, or chickens will make short work of them. The baits will last a long time, and by perseverance in their use the case will be completely cleared of woodlice, or a small toad placed in it will soon effect the same object.

HELLEBORUS—BEGONIAS FOR WINTER-FLOWERING (A Lover of Winter Bloom).—*Helleborus atro-rubens* with purple flowers is a handsome species blooming in February and March. *H. purpurascens* has smaller flowers of a darker purple. We have not seen the variety to which you refer. Of *Begonias*, *Dierswelliana* is excellent for winter; so are *nitida*, *incanata*, and *parviflora*. *Mancata* and *hydrocotyliflora* are very serviceable for spring. They require the temperature of a stove or intermediate-house during the season of growth, but when in flower may be removed to the conservatory.

VINES IN A GREENHOUSE (G. M. F.).—You may manage three Vines in your small house, 12 feet by 7, two Black Hamburgs and one Royal Muscadine, planting one 2 feet from each end, and one in the centre. For such a house a border 4 or 5 feet wide would do. If you use pots we would have them on the back stage, but we decidedly prefer a border outside, and taking the stems through the front wall as you propose. If you thus establish three Vines in the house, they will interfere with your keeping many greenhouse plants there in summer; but you may keep your general collection there from the time the Grapes are out and the leaves turn yellow, until the Vines break and begin to shade the house—say from October to May, if you do not force. The way to combine such a viney with a general collection of plants will appear shortly.

BACK NUMBERS (J. C.).—The Numbers can be had from our office if you enclose eleven postage stamps. Specify again the Numbers you require, and state your full direction.

VINES IN CHICKEN-HOUSE (B. J. C.).—If we understand aright, the glazed house for your chickens will be 80 feet long, have a sloping roof of glass 10 feet, resting against a wall at back, and a six-foot fence of wood in front. It will do very well for Grapes trained 15 inches from the glass; but it would be better still if the front were also partly glass. Of course, for chickens and Vines alike, you would have to secure ventilation. The Vines would do in boxes 2 feet square, and the same in depth, but you trouble yourself with boxes at all, when you can plant outside and take the stems of the Vines through the boarded wall? If the soil is light, add a little somewhat stiff loam if you can obtain it; if not, some rotten dung and lime, and some bruised boiled bones. If the soil is dry you need not trouble about draining, but it is safest to have a drain in front. You could have eight Vines—four Black Hamburgs, two Espérons, one Royal Muscadine, and one Buckland Sweetwater, or more Muscadines if you like a white Grape. A small stove might help the chickens in spring. Any of the nurserymen who advertise in our columns would supply you.

REMOVING OLD VINES (W. Sheridan).—We presume your employer has power to take up the Vines next season. If so, and they can be lifted with care in October, and be taken and planted carefully at once, they will be better than young Vines. If this cannot be done, then we would prefer good young Vines. If you resolve on lifting them, then your proposed plan of treatment is very good—that is, taking the crop this year, but stumping-in or shortening all the shoots above the fruit, and bringing up one single shoot from the bottom, and cutting all but that shoot away at planting-time.

GREEN PEAS (J. C. P.).—The Peas you saw had been preserved through the winter. Those which are brought to the London markets from Algiers are worth about 10s. per peck, but are only fit for soup, and for that purpose not equal to those preserved in tins. The best Peas are now worth 20s. per quart.

PINERY (A. Burge).—We have published full particulars, with drawings, in "The Pine-Apple Manual." You can have it free by post from our office for thirty-two postage stamps.

KIDNEY BEANS' BLOSSOM FALLING (T. J.).—What are your dwarf Beans? If Kidney Beans, the temperature by day is rather too high in dull weather; but if all else is right, we should think that the dropping off of the blossoms must result from dryness at the roots. Our Beans do not drop a bloom until it is shovelled off by the young pod. Temperature at night from 55°, and by day from 60° to 65°, with 10° more in sunshine. Very rich heavy soil over-watered, will also sometimes cause them to drop their blooms prematurely. Of course, you do not mean dwarf garden

Beans, or Broad Beans, for none of them will stand anything worth the name of forcing, nor yet will they agree with a close atmosphere.

NAMES OF PLANTS (H. C. L.).—Your *Acacia* is *A. decurrens var. mollissima*, a native of Van Diemen's Land, and may be called the Very-soft *Acacia*. The other is an *Eucalyptus*, or Gum tree, native of New Holland, but we cannot determine the species without seeing a flower. (W. R. J.).—The fruit-bearing *Acocuba* is the common *A. japonica*. It never bore fruit until recently, because none but female plants were in this country. We believe your *Jasmine* is *Jasminum heterophyllum*; it is deciduous if grown against a wall, and may be, as you say, evergreen in a greenhouse. (An Old Subscriber, Surrey).—We cannot usually name plants from seeds, but the scarlet black-tipped seed you enclosed is so well known as forming a necklace for children, that we have no difficulty. It is *Abrus precatorius*, a native of the West Indies (J. Jones).—Your *Calanthe* arrived in such a crushed condition, owing to the box having been smashed in passing through the post office, that though we endeavoured to compare it with the *Calanthe* you name, we could make nothing of it. (W. S.).—1, *Platyserium aleicorne*; 2, *Phlebodium aureum*; 3, *Pteris cretica*; 4, Probably *Pteris heterophylla*. (D. D. M.).—1, *Scindapsus pictus*; 2, *Nephridium*; 3, *Selaginella cæsin*; 4, *Aspidium molle*; 5, *Adiantum trapeziforme*; 6, *Phymatodes*; 9, Fruit of a *Clematis*; 10, *Erica carnea*. The others insufficient for identification. (T. C. Hove).—It is impossible to say what your plant is from the scrap sent. (M. D.).—1, *Asplenium dimorphum*; 2, *Adiantum macrophyllum*; 3, *Pellaea hastata*; 4, *Selaginella*; 5, too young.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending February 24th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 18	29.962	29.904	41	20	43	42	N.	.00	Frosty; very fine; frosty.
Mon... 19	29.496	29.589	42	20	42	43	N.W.	.00	Frosty; clear and fine; overcast; frosty.
Tues... 20	30.021	29.960	44	25	40½	42	N.E.	.00	Frosty; fine; cloudy and cold; slight frost at night.
Wed... 21	30.298	29.179	45	25	41	42	N.E.	.00	Uniformly overcast; cloudy; fine; slight frost.
Thurs... 22	30.160	29.992	52	26	41	41½	S.W.	.02	Overcast; slight rain; overcast; slight frost.
Fri... 23	29.833	29.677	53	27	42½	41½	S.W.	.00	Overcast; cloudy and boisterous; fine; clear.
Sat... 24	29.924	29.271	46	36	42	42	W.	.01	Very clear; dusky clouds, and cold; overcast.
Mean...	29.956	29.853	46.14	25.57	41.71	42.00	....	0.03	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RAILWAY CHARGES.

ONCE more, then, on this subject. There are some who are said never to touch a subject without adorning it. At any rate this is not my present object, I wish not to adorn, but rather to annihilate; and really, although my first thoughts on the subject were penned somewhat doubtfully, these shall be written cheerfully and hopefully. I received a communication from the Honorary Secretary of the Poultry Club, that after their Rochdale Show he would be prepared to take up the subject of railway carriage. Doubtless, without any joke, we, exhibitors, all trust that the Club will not take it up without putting it down. Then the Club will have earned the good wishes of all exhibitors, and ought largely to increase its ranks. In my last, however, I wrote that independently of the Club's efforts, I thought that exhibitors collectively should endeavour to influence railway authorities, and I now suggest the following form of requisition to be signed by exhibitors and forwarded to the various Boards:—

"TO THE DIRECTORS OF _____ RAILWAY.

"Gentlemen,—We, the undersigned, being breeders of exhibition poultry, desire to bring the following facts under your notice:—

"1st. That poultry exhibitions have largely increased passenger traffic on railways.

"2nd. That all exhibitors cannot be successful, yet the expenses of entry are large, and the addition of railway carriage tends to diminish the number of exhibitors, and thus indirectly passenger traffic.

"3rd. That railway expenses form a very heavy item to exhibitors.

"4th. That in the case of a crate, or hamper, containing goods being returned 'empty,' the charge is merely nominal, although it cannot have added to the passenger traffic of the line.

"Lastly. That exhibitors consider that their poultry hampers, if not carried free on the return journey when unsold, should at most be charged only as 'empty,' and they believe that with an abolition of the return charge altogether railways would be gainers, as distant exhibitors would send more specimens, and, in consequence, probably attend themselves, whereas, now, they are often deterred by the double railway expenses.

"We, therefore, beg you will give the matter consideration, and give such orders that in future all poultry returning from exhibitions may be carried free.

"We are, Gentlemen, &c."

This, it appears to me, embodies the matter in as few words

as we can, but I throw this out merely as a suggestion, and it depends on exhibitors themselves whether such requisition would be successful. It requires to be, like that presented to me when I was a visionary "railway king," influentially signed.—Y. B. A. Z.

Provided the means are forthcoming, I should advise the printing of some fifty copies or more, with the names of those signing the requisition, which I am now quite ready to receive, if the requisition is considered to meet the circumstances of the case. One of these copies, with the printed signatures, I will then forward to the head quarters of every large railway company, requesting a reply, and the names of those responding favourably can at once be published in "our Journal," perhaps in "letters of gold."—Y. B. A. Z.

P.S.—I have only to add, that since the matter has been mooted some of our most successful exhibitors have expressed their willingness to assist—a proof, were any needed, of the fact that the grievance is deeply felt even by those who have been supposed to show successfully. It needs not much consideration to determine how the shoe must pinch the unsuccessful class.

The following breeders have communicated with me, and I shall be happy to add others, and will, as time serves, communicate with others.

- Viscountess Holmesdale, £1
- Sir St. George Gore, £1
- J. Rodbard Rodburd
- J. K. Fowler
- Charles Pease
- R. B. Postans, 10s. 6d.
- H. Beldon
- E. Pigeon, £1 paid
- G. Mann'g, 10s. 6d. paid *
- Rev. C. Spencer, 10s. 6d.
- Rev. J. Ellis
- Rev. J. G. A. Baker
- Rev. A. K. Cornwall
- Rev. W. Shaw, 10s. 6d. paid
- H. Lane

- "Cactus"
- John Rhodes
- Miss Milward
- Mrs. Pettatt, 10s. 6d. paid
- Mrs. Seamons
- Charles Cork, 10s. 6d.
- E. Shaw, 5s.
- F. P. Edwards
- H. Yardley, 10s. 6d.
- S. Lang, jun.
- C. Jennison
- F. King
- Capt. Heaton
- T. Stretch, 10s. 6d.
- Joseph Hinton, 10s. 6d. paid

Most of these have also signified their intention to help in the "sinews of war," but have not mentioned any amount. I must apologise to many for apparent neglect in not answering their queries. I feel I must do this chiefly through "our Journal" as a public print, for the time I am able to devote to the matter is but limited; still, now that we have set the wheel going, I hope we shall not let it stop till we have completed our work successfully.

* Guarantees £2.

Some have asked for what purpose the money is required. Well, I propose when we have decided on a form of requisition to print off a certain number with the names appended, acquainting the various companies that the authority to append such names is in my possession. Besides this, there will be the postage of the letters to various breeders, &c. Possibly, too, the amount would be sufficient to pay the expenses of any amongst us who would offer to form a deputation to the various leading offices. On this point it would be well to have a list of those who could give up the time to the purpose.

I have only to add, that as it has been St. Valentine's time of year, possibly some of the replies to me may have miscarried; and if any exhibitors are unnamed who have done so, they will kindly accept this explanation, and, I hope, will communicate with me again.—JOSEPH HINTON (Y. B. A. Z.), *Hinton near Bath*.

INTER ALIA.

CONCERNING RAILWAY CHARGES.

I AM not fond of railing. I beg the "WILTSHIRE RECTOR's" pardon for indulging in one of his veins, when I am about to forget another—namely, christian charity. I have something of the Game Bantam in me, and hence it may be supposed that the Rector's sermonettes on my favourites have tried my forbearance. The defence of pets is already, I perceive, in abler hands than mine, and, therefore, with this preliminary crow I will proceed to my main subject.

I say again I am not fond of railing, nor am I in poultry matters fond of the rail; but for three years I have been sorely tried, and I must now have my say. I live on the Great Eastern line, which may be deemed sufficient reason for my complaints, yet I do not think that this company in these matters is much worse than any other. For a long time I have grumbled in solitude, and now I am willing to go in with "Y. B. A. Z.," and all the letters of the alphabet, to bring about a change in railway charges, and the carriage of birds.

When I began to exhibit, about three years ago, a bird on his road to an exhibition was indeed a *rara avis* at our station. Now we have not only had a poultry show of our own, but on the eve of any great exhibition, and of many small ones, "the cock's shrill clarion" drowns not the "echoing hoin," but the shrill whistle of the railway guard. By the way, our poultry show was a surprise, for we had not only a balance sheet, but actually a balance in hand—a nice little nest egg for this year.

Now to my main point—namely, railway charges. From our station, with some few exceptions, we are unable to prepay with certainty for the carriage of birds, although poultry shows very properly require this arrangement. In fact, until I made a great fuss about it, the prepayment was entirely refused, except to stations on the direct line. The reason of this is obvious—it saves trouble to the officials. I have known a basket of my birds prepaid to its destination, whilst within half an hour the same application was refused to another person, and the last hamper was only prepaid to London. Although, for the most part, I now have my baskets prepaid, yet the inaccuracy and uncertainty to which I am subjected involves me in endless trouble. For example, to take a few out of many similar instances, I sent four baskets of birds to the Poultry Club's Show at Rochdale. For these I paid 6s. at our station. On their return I was charged 7s. 10d. for three only of them. I cannot prepay when I send to a friend who lives near Hitchin, in Hertfordshire, although he always prepays when he sends to me.

I prepaid to Fareham, in Hampshire, and to Chippenham, the year before last, when the receivers were charged with the carriage, which, however, was refunded in both cases.

I have on the day I write this a charge from our station for a basket which I wished to prepay, and sent to Chippenham on the 9th of August last. I cannot now ascertain whether the receiver has also paid that.

I have a charge from the Midland Railway now on my table, incurred during the last Wentworth Woodhouse Show.

Of the four baskets from Rochdale mentioned above, two of them of the same weight, and both of them marked distinctly *via* Peterborough, one came back by the London and North-Western Railway, with a charge of 3s. 6d., and the other by the Great Northern, charged 1s. 6d. A neighbour was involved in extra expense and trouble in a similar manner. I received my four baskets in the following order:—One basket on Wednesday night last (7th inst.), by the 9.50 train. My man was there to receive it. Another, for which by the way, I was not

charged at all, and for which probably some six or seven months hence I shall have to pay, came on the following morning by the 8.55 train. The two others, by different routes, both reached me by the 12.40 train on Thursday. I was put to the expense of a telegram, and the trouble of writing letters to the Secretary of the show, and I am instructed that although the railway company had been informed of what would be required, and that although every bird was at the station of the Lancashire and Yorkshire Railway by the afternoon of Tuesday, yet that they were left at the station a whole day for want of carriages and servants to dispatch them.

The neighbour to whom I have already alluded sent a pen of birds to Whitehaven Show, prepaid to London. In London it was met and then prepaid to Whitehaven. He received his prize money, less 3s. 2d. carriage. This, however, has been refunded.

Once more. At our station the carriage of parcels from the station was once contracted for by an individual, and then we had almost as many deliveries as trains. Now the company have, for reasons of their own, taken the matter into their own hands, and we have only two deliveries—namely, about 10 o'clock in the morning, and between 3 and 4 o'clock in the afternoon. I am bound to say that my birds are sent up frequently from the station by special porters; but this means a gratuity, which is not fair to others, and might become a mischievous custom.

With these few out of many instances which might be given, I think I have made out in my own case alone a sufficient ground of complaint against railways.

What I should wish to see, would be a fixed and uniform rate for exhibition poultry, higher than ordinary parcel rates, but not the exorbitant charges we have now; more carefulness in ascertaining the weights of baskets and birds, and in filling up the details of freight notes, which I always require as a receipt, and every facility of carriage offered by lines of railway on which shows are held, by which both the line and the town would derive even more advantage than they do now. I do not care for any half-price measures. I do not want my birds sent back from shows as empties, which last, from my experience, do not always reach their destination. I want a plain, straightforward, common sense charge, uniform throughout the kingdom, known at every station, and as fair to the railway as to the exhibitor.

I must apologise for this lengthy communication, and its *inter alia* ramblings, but I cannot drive the "WILTSHIRE RECTOR" out of my head. I thought a little while ago he was on for chapters on Pigeons, and scarce books; but, no, he dropped that, and took to reporting shows, till finding himself at Birmingham, and feeling, I suppose, there, a very Malay of critics, he went into our poor little Game Bantams. Why did he do this just as I was being dunned for little railway bills incurred in August last, just as I had found out that I was paying a variety of prices for carriage, and just as my Game Bantams had been delayed at Rochdale for a whole day?—EGOMET.

GAME BANTAMS.

BEFORE answering "WILTSHIRE RECTOR's" reply to my letter, published in your Journal of the 30th ult., I was anxious to see if others would take up the defence of the much-abused Game Bantams. I have not been disappointed; and am much obliged to "P." for his letter in your Journal of the 13th inst., and also to "W. F. E." for his in your last Number.

"WILTSHIRE RECTOR" judges the entire class of Game Bantams by a pen he has bred and others that he has seen in his own immediate neighbourhood, with the single Birmingham exception: is this fair? Like "W. F. E.," I wish he had not given them up. If he had kept them on and exhibited them, he would certainly not have written that "they are easy to breed good." He says, "In poultry, popularity rests upon two bases—usefulness and fancy: the former a permanent basis; the latter anything but permanent." Now, I should like to know in what respect his favourite Blacks and Sebrights are more useful than Game? From experience I say the latter are much better layers, and are infinitely better for the table than either of the former, and I have yet to learn that they are less courageous, or more given to ramble. Can "WILTSHIRE RECTOR" explain what else it is than fancy that makes any variety of exhibition poultry sell for the fancy prices we daily see and hear of? If ever the poultry fancy die out, fancy prices will die out too.

"WILTSHIRE RECTOR's" comparison with the tulip mania, as "P." very properly observes, has nothing to do with the Game Bantam question. In the latter a judge sees and knows what he is buying; in the former he did not. I had a large superfluous stock of birds at the beginning of last season, they met with a ready sale. If I had had twice the number I could easily have disposed of them; I could not supply half the demand. It is true the eggs of Game Bantams are very fertile, but that is the only sense in which "WILTSHIRE RECTOR," or any one else, can say they are easy to breed. With "P." and "W. F. E." I again aver that no variety of fowls is more difficult to breed than really first-class Game Bantams, be they Reds, Duckwings, or Piles.—GALLUS.

P.S.—Like "AUDI ALTERAM PARTEM" I visited the Poultry Club's Show at Rochdale. The room was much too small (as is Bingley Hall) for the number of pens that were crowded into it; but, nevertheless, especially when we know how hurriedly it was got up, like your first correspondent, I thought it "a very great success." If "AUDI ALTERAM PARTEM" had read your Journal he would easily have ascertained what steps the Poultry Club had taken to discover the perpetrator of the Pigeon outrage. I fervently hope the Poultry Club will again, ere long, "make themselves responsible for another Show."

"WILTSHIRE RECTOR" has received a letter from Mr. John Crossland, from which the following is extracted:—

"I quite agree with you respecting Game Bantams and their breeding. I believe I am one of the oldest breeders of them, and it is well known to all that if a man understands the breeding of Game fowls he can breed Game Bantams. I have bred them for upwards of twenty years, and I every year breed a large number of first-class birds, and supply many prize-takers in England. As a proof: if a breeder has a thoroughly good breed he has no need of a cross, (as although Bantams are required to be small, yet Game Bantams need not be so small as other kinds). From a single yard in Yorkshire there have been sold upwards of £180 worth of Game Bantams in twelve months, and the greatest part of these fowls were sold to our well-known exhibitors in the Game Bantam classes. The breeder has also taken himself, I see from this Journal, from December 1864 to December 1865, four silver cups, cup and second at Darlington 1864, cup at Thorne for two years, 1864 and 1865, cup and second at Darlington 1865, cup at Birmingham, given by subscribers, 1865. This breeder, I should say, has won about £30 in prize money. If this is not a proof that good Game Bantams can easily be produced, I am at a loss to know what is.

"If 'P.' go on crossing the feather of his birds he will never breed good ones. I have only crossed once in ten years, and I gave £5 5s. for the bird—first at Birmingham, first at Plymouth, and first at Liverpool.—JOHN CROSSLAND."

My plan in life is never to enter into any controversy, but openly to state my opinion, honestly formed, on any subject that lies in my way. If some others do not think as I do, very well—"doctors differ," that is all. On the other hand, if I see good reason to change my opinion I as openly aver the change; but my opinion is unchanged in regard to the easiness of breeding Game Bantams. As "P." has slightly misapprehended me in one point, I will add a few words to the letter which Mr. Crossland was kind enough to send to me, which letter, coming from the great Yorkshire breeder of these fowls, ought to set the matter at rest. One word previously: it is a fact that comparatively few poultry fanciers thoroughly understand their birds, and these few become regularly first-prize-takers. Others equally fond of fowls, equally desirous of succeeding, and who often go to great expense in crossing and re-crossing, yet do not succeed, save occasionally, because they are not masters of the arts of breeding, rearing, and choosing. Thus many persons do not even send the best birds they possess to a show, they have a fancy for this one or that, and of course they fail; while if another eye has looked over their stock and chosen for, or with them, they have at once succeeded. Not only ladies do this, who are most apt to have undeserving favourites, but even gentlemen err in this way. It is very odd how an owner (I am not speaking of an adept), will sometimes overlook the best bird in his yard. These are two secrets in breeding and rearing which are not learnt in a day, and by some never learnt. Again, as to crossing strains—I know three of the first breeders, if not the three very first breeders, respectively of Spanish, Dorkings, and Light Brahmas—I put this question to each one of them, "How often do

you cross your strains?" The same answer came from each, "I dare not do it, when I have done so I have obtained worse birds, or only my own back again." First-class birds are known to a first-class eye; and, with first-class management and choosing, comes first-class success.

In regard to Game Bantams being easy to breed, I mean almost all their eggs are fertile, the hens are good sitters and mothers, and the chickens are hardy, and, if of a thoroughly good old-established strain, there will be a large proportion of good birds; on this point notice what Mr. Crossland says. This is not the case with some other varieties. Of course when I speak of easiness to breed first-class birds, I mean in proportion to some other sorts. Here "P." misapprehends me. I know in this world it is in everything easier to produce what is indifferent than what is good—a weed rather than a flower, or a tolerably good flower rather than a first-rate florist's flower.

There are good strains of Game Bantams about the country and also inferior ones, having coarse legs, spotted breasts, and much too Bantam-shaped to suit the name Game; but the number of Game Bantams appearing at our shows is a conclusive proof that they are easy to breed. I do trust, however, that other varieties of the Bantam, and also Polish and even Malay, will not cease to be exhibited. Again, I beg to state that I am not insensible to the beauty of these miniature Game fowls. I like to see General Tom Thumb and his party very well, but I should prefer looking upon ninety-nine well-formed and full-sized men to ninety-nine Tom Thumbs, and should consider the former to be of a great deal more use in the world. I regret I have unintentionally ruffled the feathers of some of our Game Bantam fanciers.—WILTSHIRE RECTOR.

SOUTHERN POULTRY SHOWS.

MAY I be permitted, Messrs. Editors, to endorse most heartily the grievance so well stated by your able and entertaining correspondent, our kindly friend, the "WILTSHIRE RECTOR?" It is wholly inexplicable why all the poultry shows, with very few exceptions, should be held, as my factotum, with doleful visage, expresses it, "up in Yorkshire and them parts." Really the list of shows which the "WILTSHIRE RECTOR" gives, however creditable to "canny Yorkshire," is a disgrace to us southerners. Why is not the list interspersed with the names of well-to-do towns and goodly cities in the south and west? Who is at fault? Surely, as Sam Weller put it, "Somebody ought to be wopped for this!" Are exhibitors to blame? I think not. Those of us who send a couple of hundred miles to Manchester or Rochdale would gladly rally round shows nearer home, offering so many advantages—less risk, less expense, a shorter absence of the birds from home, and a chance of seeing them in the exhibition pen, without encountering the difficulties and discomfort, so forcibly suggested by the "WILTSHIRE RECTOR," in the vain attempt to reach some Ultima Thule of the north. Does the blame rest, then, with managers of shows? Have we not men of pluck as well as men of knowledge in the south? Could we not encourage such men as Mr. Houghton to start a show by the promise of a guarantee fund? Must London and Sydenham shows of necessity be failures? Will these places fail to do what every Yorkshire market town—aye, and many a village—succeeds in doing year by year? Will not the Poultry Club give us a metropolitan show worthy of its authors? Such a show would meet with more support in the south, where no rival was at hand, than if held in Yorkshire, with other shows jostling it on every side. One more question I ask: Could not we southern exhibitors form an association after the model of the Pigeon Societies, to guarantee one good annual show either in town, or in some southern city which would receive the association with open arms—that is, with local organisation and a local fund?

As you have another correspondent who has lately been addressing you as "BRAHMA," and it is advisable to preserve our separate identities, I must ask you not to omit the latter half of my wonted signature—BRAHMA POOTRA.

DRAGON PIGEONS.

I HAVE but just seen, in your impression of the 6th inst., a letter headed as above from a correspondent signing himself "A DRAGON-BREEDER," and who states that his attention has been called to a letter, in your paper of December 19th, from Mr. John Percival, of Birmingham, relative to the judging of some of the Pigeon classes at the late Birmingham Show.

Now, in the first place, I beg to inform him that the letter referred to, signed "John Percivall," (through an error of the printer), was from myself, with my address as at foot, although no address appeared in print, so that how your correspondent arrived at the conclusion that the address was Birmingham I am at a loss to understand.

I am pleased to find your correspondent expresses his thanks for the information conveyed in my letter as to what a good Dragon should be. I am quite aware there are more who do not know than there are who do, and I cannot help thinking your correspondent is one of the first-mentioned, or he would at once discard what he terms the very handsome birds with white rumps that he has lately become possessed of, and which he says, but for the expression of my opinion, he should have been unable to obtain. I beg, however, to inform him that such very handsome birds may be bought in any quantity at 1s. 6d. or 2s. each. Perhaps he would not object to a few white feathers in the flight or tail, which, in my opinion, would not be any more objectionable than the white rump. I am glad to find your correspondent state that many fanciers have taken the hint conveyed in my letter, by discarding the white-rumped birds they previously possessed, such birds being comparatively worthless.

I cannot see any reason for explaining the distinctive properties between the Carrier and the Dragon, these birds being so entirely dissimilar as to be well understood by all really competent judges.

Your correspondent goes on to say that white-rumped Blue Dragons are better in most properties than those uniform in colour throughout. This opinion, however, is quite erroneous, as the strain I possess (blue-rumped), are matchless in colour and metallic lustre in the hackle, so striking as to elicit the admiration of all good judges who have seen them.

In answer to the inquiry as to whether I would discard white-rumped Owls, I reply, Most certainly; but as to Runts, Antwerps, and Blue Rocks, they all rank so low in the estimation of the fancier as to make it a matter of indifference whether they be white-rumped or not.

I am pleased to find after all that the pair of Blue Dragons I exhibited at Birmingham, which were highly commended, and which the following month I exhibited at Manchester, where the same two Judges officiated and awarded them the first prize, elicited your correspondent's special admiration at Birmingham, and compelled him to admit they were the best pair in the Show. The pair which took the second prize at Birmingham belonged to my brother Mr. John Percivall, of Harborne, and were entered in his name, so that your correspondent may now know to whom the birds really belonged.

Your correspondent admits that my complaint of not having the first prize awarded to me at Birmingham for Dragons was not without good cause, as he acknowledges they were the best pair in the Show. My complaint, on the contrary, that the first prize for Archangels was awarded to me, in consequence of their being two odd-eyed birds, was intended to show how very badly the prizes were awarded in this as well as in the Dragon class; badly matched for showing the Archangels were, I admit, but having lost one just before the Show, and having but the one pair left, I had no alternative but to send them.—JONES PERCIVALL, Montpellier Road, Peckham Rye.

CRYSTAL PALACE BIRD SHOW.

On Saturday week I went to the annual Bird Show at the Crystal Palace, and, by your kind permission, will make a few remarks on what I saw there. I have nothing to say against the judging in the classes for Clear and Buff Norwich Canaries, but if Mr. Welch's birds had been in time for competition Mr. Collinson would have run a good second with his. I likewise pass by the other Norwich classes (3, 4, and 5), and merely remark that they were good; but as to classes 6, 7, 8, 9, and 10, I can find better Belgians at any small public-house show in either Manchester, Oldham, Rochdale, or Stockport, than I saw there that day. The winner in the Crested or any other variety class (10), ought to have been disqualified at the very beginning, for he had a split crest, and all fanciers know that on account of that he ought "not to be admitted as a prize bird." The owner only sent him to sell, and was certainly surprised when he saw the award, as he never expected it. In classes 11 and 12, respectively for London Fancy Jonque and Mealy, there was not a perfect bird certainly, but London Fancies are hard to meet with very good. Class 13, German or

any variety, except Norwich or Belgian, was fair; but 14 and 15, Lizards, were bad, bad, bad. There was hardly a fair bird in either class, and light-coloured legs, feet, and beaks, run caps, white-tipped wings and tails, and washy colours, seemed to be the order of the day. Some of the Silver birds looked as if they had been in a snow-storm, their spangling was all indistinct and blurred. About classes 16 and 17, Jonque Cinnamon and Buff Cinnamon, I have nothing good, bad, or indifferent to say. Classes 18 and 19, Jonque and Mealy Goldfinch Mules, were capital—very good indeed; but now let me ask, What are the rules for judging Mules? One Judge advocates a bird as like the Canary as possible, another man puts an evenly-marked bird first, a bird having the properties of both parents—which is the sort we are to breed? Both these Mule classes were good—very good indeed. Why was the Linnet Mule class struck out this year? Siskin and Greenfinch Mules, &c., ought not to be mixed up with Linnet Mules—they have no chance. Class 21 (six Norwich Canaries in one cage), was capital; 22, (the same number of Belgians), good; 23, (six Golden-spangled Lizards), bad; and 24, (six Goldfinch Mules) first-rate. Now, this Show is an annual treat, but would be better, greater, more successful, if, in my humble opinion, the following ideas, which I respectfully submit to the consideration of the Managers of the Show, were carried out:—

Firstly, let us have an extra Judge for Canaries—three instead of two; let one of these three retire every year by rotation, so that each year there may be one fresh man among the three. Secondly, take away the prizes for Magpies, Titlarks, and Chaffinches, and give the money as a prize for the best collection of Foreign birds in one cage. Thirdly, make separate classes for Clear and Marked Mules, both Jonque and Mealy; and, lastly, do let us have a standard of excellence to breed up to just as the Poultry Club have. I can name lots of men competent to draw one up. Messrs. Moore, Willmore, Goodwin, Barnesby, (of Derby); Carnally and Varley (of Nottingham); Hawkins, &c., including a few well-known amateurs, might be asked to state their views on the subject.—HENRY BEDWELL.

THE BIRMINGHAM COLUMBARIAN SOCIETY.

BIRMINGHAM has long been noted for the excellence of its Pigeons, many breeders of high standing residing in the vicinity; but until Wednesday last the midland metropolis never possessed its Columbarian Society. A few of the most ardent breeders of Pigeons in that neighbourhood, however, thought it most expedient to form such a Society, at which friendly discussion on the merits of their respective birds might take place at given short intervals, and an occasional exhibition he held to still further test the perfection of the Pigeons belonging to the respective members of the Society. The energy of the promoters of this scheme, and the almost universal support of all who were solicited, resulted in the gathering together of seventy pens of such Pigeons as would form a great acquisition to the best of our long-established Pigeon exhibitions. It must be borne in mind that only a single month has elapsed since the idea was first promulgated, and any one who attended this first meeting must have been quite taken by surprise to find the whole collection so good, that not a single indifferently pen could be selected from the numerous classes exhibited.

The Show took place in a large club-room at the rear of the Ship Inn Steelhouse Lane, Birmingham, an exceedingly well-lighted structure on the ground floor, and of most comfortable temperature. The owners of the very valuable birds executed everything that was required by their own especial handwork. The show-pens were faultless, the condition of the birds equally so, and the attendance of visitors (entirely by private invitation-cards, for no money was taken at the doors), was remarkably good. The Carriers were especially good classes, the sexes forming two different competitions. The rivalry in both Carriers and Dragons was extreme, causing a great deal of friendly banter to take place among the various competitors during the last month, and, as the sequel proved, the struggle for superiority was so closely contested, that even the unsuccessful birds could have easily taken premiums at the generality of shows. The *Antwerp* class was certainly better than has ever yet been witnessed in the locality; and the "Variety class" was an exhibition in itself Black Swallows, Red Swallows, Spots, Brunswicks, and Sabinettes being all represented by specimens in condition so completely faultless, as to elicit the warmest expression of approbation among those by whom the "Toy" varieties are especially objects of admiration.

This first meeting was so exceedingly well conducted, that many new names were added to the list of members, and we understand it is now proposed to receive members from any part of the kingdom, the only restriction on future exhibitors being that they must be enrolled members of the Birmingham Columbarian Society, and that all specimens of Pigeons must be the absolute property of those who may exhibit them. A show of birds bred exclusively in 1866 will take place in autumn, and it is anticipated such a collection will be brought to-

gether on that occasion as will still farther add to the well-won reputation of this, at present, infant Society.

CARRIER (Cocks).—First and Extra Prize, * Messrs. Dawson & Walker. Second, — Alleop. Highly Commended, F. F. Foster. Commended, F. F. Foster. **Hens.**—First, Extra, and Third, Messrs. Dawson & Walker. Second, F. F. Foster.

TUMBLERS (Short-faced).—Prize and Highly Commended, H. Yardley. **TUMBLERS (Long-faced).—**Prize, F. F. Foster. Highly Commended, — Careless.

OWLS, NUNS, TURBITS, AND ARCHANGELS.—First, Extra, and Second, + H. Yardley (Owls and Nuns). Extra Prize, — Mills, (Turbits). Highly Commended, H. Yardley (Archangels); — Mills (Turbits); — Cutler (Owls).

POWTERS.—First and Second, F. F. Foster.

DRAGONS.—First and Extra Prize, ** — Ludlow. Second, H. Yardley.

BARBS.—First, Extra, and Second, H. Yardley.

JACOBINES.—Prize, H. Yardley.

ANTWEAPS.—First, H. Yardley. Second, — Ludlow. Highly Commended, H. Yardley. **Cocks.**—First and Third, — Dawson. Second, C. Barnes. Highly Commended, — Ludlow; C. Barnes.

ANY OTHER VARIETY.—First and Second, H. Yardley (Satinettes and Black Swallows). Highly Commended, H. Yardley (Red Swallows, Spots, Brunswicks); M. Noye (Satinettes.)

The Judges were Edward Hewitt, Esq., of Sparkbrook, near Birmingham, and Thomas Hales, Esq., of Handsworth, near Birmingham.

APIARIAN NOTES.

(Continued from page 136.)

Nos. 6 and 8.—Both were supered and worked well, and both threw off prime and second swarms, leaving large supers with combs begun.

No. 9.—A large flat-topped straw hive, from which a nice super of about 35 lbs. was obtained.

No. 10.—A hybridised Ligurian stock, with very prolific queen, used all the summer for recruiting-purposes. Brood and other combs were incessantly removed for the building-up of small artificial swarms into populous stocks; yet the hive is now, after having been submitted to all these drawbacks, a tolerably strong and prosperous stock. These hybrid Ligurian queens do breed immensely, particularly if forced in the manner just quoted.

No. 11.—A large-sized octagon box hive. An octagon super was put on; when partly filled it was deepened by being lifted on a second super having no top or bars. The hive was crammed with bees, which constantly threatened to swarm, royal cells being visible close to the back window. No swarm, however, went off, and a fine box of honey was removed in August.

No. 12.—A large frame hive, which was tenanted by the doubled swarms from Nos. 8 and 14 on May 30th. On June 5th the bees had done so well, and seemed so pressed for want of accommodation, that I gave them a large square bar-box super, having a few combs partially made. An eke being soon required, the super was raised on it on the 21st of June, and removed in August with 25 lbs. of pure honeycomb.

No. 13.—A second swarm hived in a seven-framed box, with a comb or two added. Nine days subsequently the queen was taken away, and a sealed Ligurian royal cell inserted. This, after a few days, was found to be torn open, and other Ligurian cells were substituted. The queen, which in due time was raised, proved to be a very dark one, and the hive was eventually broken up.

No. 14.—This is about the best stock I ever possessed. Originally an artificial swarm in 1862, at the head of which I placed a splendid Ligurian queen, kindly given to me by Mr. Woodbury, it has almost ever since maintained the first position in my apiary. At the end of March, 1863, as I find in my note-book, "No. 14. Bees attacked by dysentery; not populous; a few eggs laid; interior quite dry." I therefore did not expect much from the hive; but, from this date, the extraordinary breeding powers of the queen soon transformed it into one of the most populous of my stocks.

In 1863, honey obtained in one super,	50 lbs.
" 1864, " " " " " " " " " " " " " " " "	75 lbs.
" 1865, " " " " " " " " " " " " " " " "	55 lbs.

180 lbs.

In the three years there was obtained an average of 60 lbs., without a cell of brood or pollen mixed with it. In addition to the 55 lbs. yielded by it last summer, the hive threw off a very fine swarm, having at its head the original Ligurian queen of 1862. The super was then two-thirds completed, and I at first feared that there was no hope of its being filled; but

* The Extra Prize, a Gold Seal and Key, for Cuck Carriers, being won by the donor of it, Mr. Dawson, it was by that gentleman's wish, transferred to the second-prize pen.

† A Gold Seal Pin.

‡ An electro-plated Sngar Basin.

** An electro-plated Marmalade.

the bees in a week's time appeared as numerous as before, and work progressed so rapidly that one of the supers was completely filled and sealed by the 15th of June. It weighed 35 lbs. nett., and was exhibited at our horticultural exhibition on the 23rd, gaining a first prize. It was subsequently taken down by Messrs. Neighbour to the Royal Agricultural Show at Plymouth, where also it was greatly admired. A second super was removed in August, containing 20 lbs. nett. The swarm which issued from No. 14 united itself, as has already been told, to one from No. 8, therefore I do not know whether the old queen is still to be numbered among the living, as she with her subjects first took up her quarters in a Stewarton hive filled with combs, in which inspection is difficult, and what became of her in the subsequent changes I had no means of ascertaining.

No. 15.—A nucleus, or diminutive artificial swarm, with Ligurian royal cells formed in the summer, gradually built up by the addition of brood-combs into a nice stock in a large frame hive. The queen proves to be hybridised.

No. 16.—Exactly similar to No. 15. Was presented to a clerical friend, and has by him been built up into an enormously strong colony.

No. 17.—Old-established stock in large frame hive. Became very populous. A fine super of more than 30 lbs. weight obtained from it.

No. 18.—My prnest Ligurian stock; the bees are beautifully marked Italians. At the early spring inspection this stock, although only a small artificial swarm made late in the previous autumn, contained more brood and eggs than any other inspected. A very large swarm was thrown off on the 29th of May. After this, brood-combs and royal cells were removed to raise several artificial swarms. In addition to, or in spite of, this deprivation, it swarmed again on the 9th of June; but the bees returned. I took out the combs and quickly discovered a poor dark-looking queen at liberty, the other royal cells being fortunately untouched. Hoping that amongst these there might be a purer-looking specimen of a Ligurian, I at once destroyed this princess that had probably led off the swarm. On the 11th the hive again swarmed; this time all royal cells remaining were cut out, and the swarm forcibly returned to the stock. After this no further attempt at swarming took place, the hive being, considering its losses, tolerably well filled with combs and bees.

No. 20.—A prosperous hive in spring, to which were united the bees and brood-combs of an adjoining hive as previously related. A nice super was taken off.

Nos. 21, 22, and 23 have been fine stocks, and have collected a considerable quantity of honey in supers.

No. 24.—Artificial swarm, made June 14th. Afterwards broken up, and brood-combs used for strengthening another swarm.

No. 25.—A small second swarm of Ligurians was kindly sent to me by a friend in the north of England. This I have strengthened by brood-combs and liberal feeding, and it is now a very fair-conditioned stock.

My honey harvest, owing to the disposition manifested by the bees of a great number of the hives to swarm, has not been so good as it would otherwise have been, or as it was in 1864. Altogether, my favourites gave me in supers 230 lbs. of honey-combs. The honey-gathering suddenly dropped off about the 23rd of June, leaving most of the supers uncompleted, having a very large quantity of partially filled and unsealed combs. The supers being allowed to remain on in the hope of a return of the honey weather, the unsealed honey was almost all removed by the bees. I have little doubt that if the profuse secretion of honey in the flowers previously existing had continued but one week longer, more than 400 lbs. of super honey would have fallen to my share.

I do not lay claim to having had a very successful season; but having in bygone years periodically given the details of my apiarian doings, I think it may be useful also to have to record a partial failure in the results which might have been anticipated, considering the number of hives kept and the profuse secretion of honey which, at one period of the summer, prevailed. It will be seen by referring to the first part of this account that, after the union of the diseased stocks, I commenced operations for the summer with fifteen hives. Eight only of these afforded supers, and one super was taken from the doubled swarm. The failure of the remaining stocks in giving supplies of honey was attributable to their throwing off natural swarms, or, in a few cases, to their resources being applied to making or strengthening artificial swarms. Unfortunately, I have to record the loss of more swarms than I have ever before experienced. My hives are now kept in two apiaries,

consequently I have to trust much to the supervision of others. It so happened in several instances, that when the bees chose to swarm, most provokingly no one was at hand; the disaster being discovered only when an evening inspection made the fact but too manifest.

I have, therefore, to acknowledge disappointment on two points. I have usually been most successful in preserving all, or nearly all, my stock hives through the winter, and have recorded that fact in foregoing Numbers of this Journal. This winter several hives succumbed to, or were purposely broken up in consequence of disease. Then again, with regard to unwished-for swarms, I have generally had but little reason to complain of my super-working colonies causing much trouble on that account. If swarms have issued under such circumstances, I have usually accepted them as a boon, though not, perhaps, what would have been desired, removing the partially-filled supers to be completed by other old stocks, or by the swarms. This season, however, I was doomed to misfortune in the loss of many swarms from my best hives, notwithstanding that sufficient super accommodation had been afforded them.—S. BEVAN FOX, *Exeter*.

DRIVING BEES WITHOUT REVERSING THE HIVE.

I SEE that you want the evidence of a third party on the plan of driving bees upwards. Well, I am this third party, so be not afraid, brother Devonshire, although I did not see what was said at the time, as I have only taken in "our Journal" during the last two years. What an age and world we live in! Some jeering, some sympathising, some feeding their bees with mutton chops, others with turkey drumsticks, and I was told while I was in Oxfordshire that they fed them there with treacle rolls—that is, they mix up flour and treacle together. But stop: this is not driving bees upwards. Well, in 1861 I tried to drive an old stock that was in a straw hive, and, as there was only a two-inch hole in the top of the hive, I failed. In 1864 I tried again, and this time all right; I had then a box hive which for some reason I could not turn up; but I wanted the bees out, and I had them out. There was a three-inch hole in the top, so I lifted the hive, and out into the garden I went (no use to be afraid), opened the hole, put on a glass super, and drummed until the super was full; I then slipped a sheet of tin between the box and super, put the latter with the bees on an empty hive, drew the divider, and all was right.—A DUCKS BEE-KEEPER.

[We do not mind the trouble you speak of, but, on the contrary, shall always be glad to hear from you.]

DROPSY IN BEES.

WHEN "A DEVONSHIRE BEE-KEEPER" first hinted that he had experienced a new disease amongst his bees, I must confess I was a little perplexed, thinking and hoping that he was mistaken, and that it would turn out little more than an advanced stage of what has already been termed dysentery. When, however, he explained its nature, it flashed across me that I had had a similar case in the preceding year in a weak colony, and in which all succumbed to the disease save the queen, which I gave to another hive; but a few days afterwards I found her abandoning the hive in a weak state, and much swollen. This case was allowed at the time to pass unobserved, and now I regret to say that another instance came under my observation only a few days since, in which I have to add to my obituary the loss of another queen from dropsy. The hive in which it took place was at the time in good condition in every respect, being quite dry, well ventilated, and well stored, and to all appearance a perfectly healthy stock, although it was the one mentioned some time since as breeding drones and workers successively. I happened to be taking a cursory glance at my hives, when, seeing something unusually large on the alighting-board, I stepped forward, and found it to be the queen in a weak state, and much swollen. I took her in my hand, and tried to resuscitate her, but in vain. I next endeavoured by gentle pressure to expel the accumulated water, but she did not survive the operation. In this case the queen and one worker are as yet the only victims. I may now say with certainty that the misfortunes which have befallen the apiary of "A DEVONSHIRE BEE-KEEPER," have made themselves no less conspicuous in that of—A LANARSHIRE-BEE-KEEPER.

OUR LETTER BOX.

DEFICIENCY OF EGGS (M. I. W.).—Your average (one daily from seventeen hens and pullets), is a bad one, but far better than our own. We have been at a loss to account for between two and three hundred hens producing only from twelve to sixteen eggs daily—sometimes less, never more. We are obliged at last to seek for the reason that makes young, well fed, and healthy fowls temporarily barren; and having exhausted our knowledge and observation, we fall back on that infallible shield and resource—the weather. Many weeks of endless rains and tempests have altered the surface of the earth, and deprived fowls of some essentials to their health and comfort, and the result has been detrimental to their fertility. Complaints of this nature will speedily disappear when the fine weather sets in. When? We must, however, warn you against one thing—if in the winter you have one out of four fowls laying every day, you must not be dissatisfied. You will never have April laying in January.

POULTRY-YARD (Subscriber).—Your question requires to be more explicit. Our answer would be another question—What breed do you intend to keep? 110 Brahmas, Cochins, or Spanish should have at least an acre and a half; if more, so much the better. The same number of Dorkings should have a farmyard if possible; failing that, one in which stable-dung, &c., is deposited, and they would require at least four acres for a run. We should consider a covering of an acre, and three acres of grass run, as better for a number of Dorkings than six acres of plain grass. We believe stable dung to be most excellent for poultry. Bally, Mount Street, Grosvenor Square, will send you estimates, on application, for any number or description of fowls. The higher your houses are the better for their tenants. They should not be less than 10 feet in height. 110 fowls should have 40 feet in length and 25 in breadth. Such a number of fowls should have the space divided in three—it is better for them; and where so many are kept no ceiling is necessary, it is only robbing the birds of a certain amount of air. If the house were divided into three, and if its height were 10 feet, the partitions should not be higher than seven. The incubator will be advertised next week.

DORKINGS' COMBS FALLING OVER (Coloured Dorking).—You are over-feeding. If a number of young Dorking cocks are put up to fatten, all having straight combs, these will, as soon as the food tells upon them, all fall over. Over-feeding spoils all real condition in every point, the feathers soften, the comb droops, and the birds become listless. Begin to alter to-morrow when the fowls are released for the day; or, if they go in and out as they please, when they are fed, give them a scanty meal of whole barley; at mid-day give them ground oats or barley mixed with water, and at night some whole corn. You may give them bread and ale in very cold or unkind weather, kitchen scraps when you please, not as an extra meal, but as a substitute for one of the others; no peas or peameal; above all, no hemp-seed, which we believe to be the cause of all the evil. Rock-salt is not necessary, nor are we aware that it is useful to fowls. White comb shows want of condition. Compound sulphur ointment will cure it. We do not know the cause of out-growing spurs, but we would not breed from a cock that had them. Do not be disturbed if your fowls appear restless under this regime. It will be the sign of returning health and strength.

CROSS BETWEEN BRAHMAS AND HAMBURGS (L. V. P.).—We do not like your cross. Both breeds are good layers; no harm can come to the egg from the cross; but the Hamburg does not sit, while the Brahma is a good sitter. You might by the cross make two had sitters in the room of one good one.

POULTRY IN SMALL SPACE (A Beginner).—We recommend you the Brahma Poetra as the hardiest bird and most prolific in confinement. You may in the space you name (25 feet by 16 feet, besides a roosting-house), keep fourteen hens and three cocks. They will lay well and keep in perfect health, with a little painstaking in providing them with large sods of growing grass from time to time, with occasional lettuces, cabbages when nothing else is to be had, a barrowload of road grit, and a bushel of bricklayer's rubbish. Mr. Baily's address is 113, Mount Street, Grosvenor Square, London, W. Ground oats mean the whole corn entirely ground, and pulverised so fine that it mixes as well as though the bran had been removed from it. It is made principally in Sussex.

MOVEABLE HEN-HOUSE (T. Short).—We have not published a drawing of one, but it is briefly described in the "Poultry-keeper's Manual," published at our office. There are several at Linton Park.

GAPES (J. Bowker).—Give each chicken a piece of camphor daily the size of a small pea. Put also a lump of camphor into their water-trough. In the "Poultry-keeper's Manual," published at our office, the remedies for all poultry maladies are detailed.

PIP ON CHICKEN'S TONGUE (R. C. R.).—The horny substance you enclosed was nothing more than the usual covering of the point of a chicken's tongue. It is painful to the bird to have it removed, and certainly of no effect as a sanitary measure.

BLUE ANDALUSIANS (G. H.).—They are a large variety of Spanish with slate-coloured plumage. They lay large eggs as any other variety, their eggs weighing from 54 to 57 ozs. You will find them fully described in the "Poultry-keeper's Manual," published at our office.

SPANISH HEN (A. O. C.).—Your hen going on to the nest and not laying, intimates that her egg-organs are deranged. She is probably too fat, and the egg-passage obstructed. Give her a dessert-spoonful of castor oil and a pill containing a grain of calomel and one-twelfth of a grain of tartar emetic every second day for a week. Feed chiefly on boiled potatoes, with very little barley-meal and plenty of green food, especially lettuce leaves.

PIGEONS (J. B. B.).—We have published such a volume. "The Pigeon Book," by B. P. Brent. You can have it, free by post, from our office for twenty postage stamps.

PARNOTS (J. B. E.).—Brass cages are not injurious to Parrots unless verdigris be allowed to accumulate on the wires. There is no work on their management.

USING STOCKS (W. H. P., Oxford).—If you decide upon uniting your two weak colonies, March will be a good time for performing the operation. With common hives we know no better mode of proceeding than that described in page 59 of the fifth edition of "Bee-keeping for the Many," and as it is possible that one colony may be queenless, we should make no attempt to remove the driven queen, but leave the bees to settle this matter in their own way. There is, of course, a certain or, rather, uncertain degree of risk in all these operations.

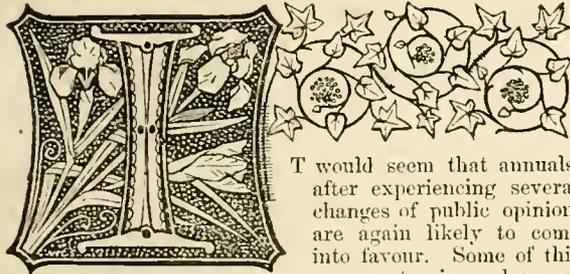
RATS (G. H. G.).—The most effectual mode of driving them away is to ferret them, and then to pour gas tar into their holes.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 6—12, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
6	TU	Acacia Drummondii.	49.0	32.8	40.4	16	37 af 6	49 af 5	19 11	29 8	19	11 29	65
7	W	Brachysema latifolium.	49.6	32.9	41.2	15	35 6	48 5	morn.	59 8	20	11 14	66
8	TH	Boronia pinnata.	49.7	31.7	40.2	25	33 6	50 5	17 0	35 9	21	10 59	67
9	F	Bossia ovata.	49.5	31.1	40.3	11	30 6	51 5	13 1	14 10	(	10 44	68
10	S	PRINCE OF WALES MARRIED, 1863.	50.0	31.6	40.3	15	28 6	53 5	7 2	1 11	23	10 29	69
11	SUN	4TH OR MIDLENT SUNDAY.	49.5	32.2	40.4	16	26 6	55 5	55 2	56 11	24	10 18	70
12	M	Bossia rotundifolia.	50.8	32.3	41.5	19	23 6	57 5	38 3	after.	25	9 57	71

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 49.7°; and its night temperature 32.1°. The greatest heat was 67°, on the 10th, 1836; and 12th, 1841; and the lowest cold 7°, on the 10th, 1847. The greatest fall of rain was 0.70 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

A FEW GOOD ANNUALS.



It would seem that annuals, after experiencing several changes of public opinion, are again likely to come into favour. Some of this very extensive class of

plants have always been held in high estimation, others not so much as they deserve, many are of little value for decorative purposes, and every year new ones make their appearance. Thus the lists of the seedsmen are swelled to such a degree that they would become bewildering were it not for the descriptions given of the plants enumerated; but such notices are hardly sufficient, and the amateur finds himself in a difficulty when he undertakes the task of selecting twenty species out of a list of as many hundreds. In endeavouring to do this, although he may recognise some familiar acquaintances among the names presented to him, he not unlikely, and very properly too, wishes to have something which he has not had before, and he wants that to be good. In taking the advice of the catalogue he finds that a far greater number than he wants are mentioned in terms of commendation or high commendation; indeed, there are but few species offered for sale that do not admit of something being said in their praise. This is all very well, for it is no part of the seedsman's duty to record anything but the bright side of the question, the other side is for the buyer to find out, or, at all events, it is for some one to do so for him. The latter is by no means an easy task, as there exists such a diversity of opinion that no one can curtail a list to any extent without shutting out what, perhaps, his neighbour would regard as deserving of being retained. Nevertheless, it must be admitted that most of our catalogues of flower seeds want a good weeding. One firm, a year or two ago (I believe it was the Messrs. Henderson), did put forth a list of such annuals as they thought might be discarded, and they did not receive the thanks which such a judicious step deserved; but as considerable additions are made every year, a good thinning out must at length be effected. It is not, however, my intention to go into this at present, but to call attention to a few of the most popular annuals which have come under my notice as deserving a place in most collections. At the same time I would invite others to point out those which may be equally deserving, and if some one would undertake the herculean task of telling us how many names in some of the larger seed catalogues ought to have the pen drawn through them he would confer much benefit on the community. Beginning, therefore, with a few annuals that are generally known, the notes on each will be very brief.

ASTERS.—These have been multiplied to a fault; but the

amateur might grow the French varieties, which are broad-petalled, and some are more or less recurved, and the German or Chinese Aster, which is quilled. The varieties of each are endless.

PETUNIAS.—Though not strictly annuals, yet these flower well in the first season, and generally do much better than plants raised from cuttings. If seed from good purples could be depended on as coming true, they would be invaluable, as they continue flowering till frost.

ZINNIAS.—Good varieties of the single look well, and the double still better; but the latter are not so robust. As a plant there is a sturdiness about the Zinnia deserving attention.

LARKSPURS.—These are most beautiful when they sow themselves and flower where they come up. They transplant badly, and the slugs being very fond of them in a young state, they cannot be depended on when sown where they are to remain, especially if in a continuous row; otherwise their beauty entitles them to a place everywhere. The perennial kinds bear transplanting well enough.

STOCKS.—German and Ten-week exhibit great variety of colour, and a good proportion of double flowers may be generally obtained. Both are favourites.

HELICHRYSMS.—Good varieties of these are not only showy all the latter part of summer and autumn, but they furnish materials for winter bouquets. A row of about 250 feet in length, which we had last summer, was most useful. In good ground they become nearly as tall as Dahlias.

PHLOX DRUMMONDI.—On soils suitable to this plant it rivals the Verbena, alike in the variety of colour and freedom of blooming. It requires, however, a rather moist situation, or a soil inclining to peat.

PORTULACAS.—A dry sunny bank is best for them, and there they are not excelled by anything I know for the variety and brilliancy of their colouring. The plant continues a long time in bloom, but it does not succeed well everywhere, and at times there seems to be a sort of capriciousness about it difficult to understand.

CALLIOPSIS.—Atkinsonii and one or two others are very good, but they are late-flowering, still their bloom may be hastened by sowing in autumn. Varieties of a more dwarf habit are wanted.

CLARKIA PULCHELLA and its many varieties have long been favourites, great improvement, however, has taken place of late years. One called integriflora is as good as any.

COLLIANSIA BICOLOR.—Nothing can be more beautiful than this flower, but, unfortunately, it remains only a very short time in bloom, so that its admission into beds composing a series is of questionable propriety, except for the few days it is out. A similar objection holds good with Nemophila, Schizanthus, and some other showy annuals.

PRINCE'S FEATHER.—This old annual is by no means so much grown as it ought to be, nothing can be more rich than it often is. It is of easy culture, and continues in flower till November.

LOVE-LIES-BLEEDING, like the last, is also a beautiful plant, differing only from it in the racemes being pendulous instead of upright.

SALVIA PATENS, of a fine blue, would be invaluable if its blossoms were more abundant. As it is, it is deserving of a place.

SALVIA ABORNTA is a white, woolly-leaved plant, very showy. As an ornamental-foliaged plant it deserves to be more known.

ISOTOMA AXILLARIS.—A neat blue-flowering plant, deserving attention alike for its continuous flowering and its compact habit, which fit it for beds, and there, in years gone by, it was often met with.

DIANTHUS.—This extensive family presents several that are worthy of a place. *D. Huddewigii* was much admired a few years ago, but has fallen into disrepute as a bedder, though entitled to a place in the mixed border.

GOBETIA.—These plants, allied to *Oenothera*, are also better adapted to mixed borders than beds. *G. Lindleyana* and its varieties are good.

SAPONARIA CALABRICA requires nothing said in its praise, unless it be to recommend it to the very few who do not happen to know it. It stands near the top of the list of annuals, especially for bedding, for which it is not approached in its way by anything else.

SENECIO ELEGANS.—The single-flowering variety of this is more showy than the double. For a bed of flowering plants 2 feet high this is deserving of attention.

FURSEU MARIGOLD.—Really good, dwarf, double yellow varieties have been common during the last year or two, and we may, consequently, expect these plants to be more sought after for bedding than formerly. They deserve a place everywhere.

AFRICAN MARIGOLDS.—These have not varied much like the last-named, but good flowers are at all times regarded as an acquisition.

GARDEN MARIGOLD.—There is a prospect of a good white variety coming out, but as I have not seen it, I can give no opinion. Those of the old class deserve more attention than they often receive.

LOBELIA.—The dwarf blue varieties of *Lobelia erinus* require nothing to be said in their favour, and the white and intermediate varieties are equally well known and approved of. I am not, however, acquainted with the taller annuals of this section, but the perennials are much grown and admired.

TAGETES SIGNATA.—This I consider next to *Saponaria* for general usefulness as a bedder, and superior to it in the duration of its flowering. The plant promises to be a rival to the yellow *Calceolaria*, which it resembles in size and habit, but it is even a more abundant bloomer than that very popular flower. It makes an excellent edging to larger-growing plants, and for a line in a ribbon border is equally valuable. The individual flowers are small, but they are produced in such abundance as to clothe the plant completely over, and this not for a week or two, but for three or four months, ending with severe frost. I can strongly recommend it for all purposes except bouquet-making.

TROPEOLUM.—I hardly know what to say of this family. A dwarf-growing variety, which becomes taller than the other, as it does not run, flowers most abundantly, and shows the flowers better above the foliage, but the trailers would be more easily kept in order if they did not grow too rank. If other plants be plentiful, I would not recommend *Tropæolums* for beds, although as single plants, or to cover banks, they are invaluable.

MIMULUS.—These are mostly regarded as perennials, requiring rather a moist soil.

NEMOPHILA INSIGNIS, and others, cannot be exceeded in beauty while they are in bloom, but in dry hot seasons the bloom is so soon over, that it is not advisable to depend too much on them.

SCHIZANTHUS, like the last-named, is very handsome, but it, too, is of too transient beauty to be recommended for general purposes.

THUNBERGIA ALATA, and others, are climbers, and in hot seasons look better out of doors than in the houses. They ought, however, to have a sheltered situation.

TRACHELIUM CEBULEUM, though a perennial, will, nevertheless, often flower in the first season. It is pretty, but not very hardy, being apt to be killed in sharp winters.

CONVOLVULUS.—I confess to never being so much in love with these plants as many have been; certainly they look well when full blown, but when the flowers close in they look badly. The plant is robust and sturdy.

ERYSIMUM.—The varieties of *Peroffkianum* are an improvement on that species, and look well. This is one of the best of annuals to stand the winter, with the exception, perhaps, of the Virginian Stock, which is also good, and well adapted for spring gardening.

CLINTONIA PULCHELLA.—I confess never being very successful with this annual, but I have seen it in good order; it seems to require a hot summer, and sunny position.

DELPHINIUM FORMOSUM, being a perennial, is hardly admissible here; but it may be treated as an annual, for mixed borders especially.

GLIHA TRICOLOR.—A pretty annual of neat growth, and deserving attention.

GALLIARDA PICTA, and its varieties, are deserving a place where showy plants are grown, and when placed along with other suitable plants.

LEPTOSIPHON DENSIFLORUS, and others, are neat growers, and showing their bloom well above the foliage, appear to advantage.

LIMNANTHES DOUGLASHI is also, like the last, a compact, manageable plant of some merit, though not to compare with *Saponaria* or *Tagetes signata*.

LYTHNES.—There are several species or varieties, but *L. polyphyllus* is as good as any of the tall ones, and deserves a place in the herbaceous border.

Besides the above there are many other annuals of merit, according to the wants of those who patronise them, but as this list has already extended farther than it was intended, it is not advisable to point out more of the flowering class, but there is another section remarkable for their appearance, to which allusion may be made.

PERILLA NANKINENSIS.—Too well known to require comment, its hardness is not the least of its merits.

RICINUS.—Castor-oil plants, remarkable for their handsome, large, palmate foliage. In a favourable season like last year, they will attain the height of 8 feet, and upwards, with but very little attention.

AMARANTHUS MELANCHOLICUS RUBER has not become so popular as it was expected to be; it is certainly not so hardy as the *Perilla*, and dies off sooner in the autumn, but when at its best it exceeds the *Perilla* in appearance.

ICE-PLANT.—This likes a dry, sunny bank, and its use in garnishing is, perhaps, not the least of its merits.

SOLANUMS.—A new era seems to dawn upon these, and we may expect to hear of several species remarkable for their fruit or their manner of growth. *S. marginatum* is about the best of the latter that I am acquainted with.

CANNAS.—These are not truly annuals, but may be raised from seed. Good varieties with a dark bronzy tint on the stems and foliage, and when of good growth and healthy, look well. They require plenty of moisture in summer, with heat as well.

INDIAN CORN.—Not by any means an uninteresting plant, as its appearance is truly tropical. It requires a warm season to perfect its growth.

GRASSES.—These are so numerous that I fear I must give up the task of enumerating them; but good specimens may be found in the genera *Agrostis*, *Briza*, *Bromus*, *Arundo*, *Eragrostis*, *Festuca*, *Hordeum*, *Panicum*, *Stipa*, and others, to say nothing of the Pampas Grass, the most graceful of them all. Grasses require special notice, but not being sufficiently well acquainted with them, I cannot enter into their merits fully. It is probable, however, that during the coming season some one will point out to us what it is advisable to grow, and what not, for this class, like the flowering annuals, will soon want weeding. At the same time accessions are acceptable when of merit. I have no doubt that other large-foliaged plants, and those of singular growth, such as the common Teazle, will have their admirers, and contribute their share to grace the back of the shrubbery, while the front is occupied by such plants as those noticed above. Perhaps some other contributor will give their names.—J. RONSON.

POTATOES AGAIN.

I MAKE no hesitation, in travelling out of my own peculiar line, to say a few words more on the subject of this favourite esculent, and that notwithstanding the broad hint given me by the "man of Ross" that I should "stick to my last," as every cobbler ought to do. I do think it a very unkind cut to tell a man who has been partly brought up in the land of "praties" that he knows nothing at all about them, and then to come down on him with the physiology of the subject. On that point I do profess my ignorance, and beg to thank your correspondent for the enlightenment which he has kindly given me. Before, however, adopting his advice, I should like to

say a word or two. I want to know, if his physiology be correct, why it is that the Lapstones were as mealy as any one could desire if the ground was in fault and the power of control in one's hand. I cannot quite understand why they alone of all the kinds I tried should have fulfilled conditions which are only, according to "W., Ross," to be obtained by the application of special manures, such as sulphate of soda, nitrate of potash, &c.; and I am sorry to say that cost is some consideration to "D." of Deal, but that on a small scale he would like to try these manures. How would "W." advise me to apply, say, the nitrate of potash? and as the Lapstones are mealy, would he recommend me to let well alone in their case? Many thanks, too, to "UPWARDS AND ONWARDS" for his notice of my short notes, and for his promise. I have written to Mr. Daintree for a sample of his new Kidney, and this will complete about a dozen sorts that I have for trial; and I can only say that if it beat the Lapstone it must be a really good one. Whoever recommended that variety I look upon as a good friend, and am at any rate glad that so experienced a grower as your correspondent agrees with me in my estimate of it.

I did not wish my growth of Potatoes to be dignified by the name of an experiment. I intended it far otherwise, and hoped that I had obtained in those I grew a sufficient number to keep me in a succession of good varieties. Had they all proved to be so, as I expected, I should not now be thinking of experiments or trying other sorts. I do not see the use of burdening oneself with a great number of varieties, and think that if we can have three or four good ones that is all we require. It is doubtless true, as "FORWARDS" suggests, that the last season was a peculiarly trying one to Potatoes, and therefore one must not condemn hastily before another trial; but Racehorse and Royal Ashleaf were found wanting before the change of season, which so completely dashed one's hopes of a good crop. As to Paterson's Seedlings, this is now the second season that I have observed them, and I have seen nothing about them to lead me to suppose that they will be different in any other circumstances. There are, as I have observed, numbers of Potato-eaters to whom flavour is a very secondary matter, but I am not one of them; and it is in the hope of clearing away some of the rubbish and obtaining a really good supply that I have ventured to obtrude my little experience.

I see "FORWARDS" unhesitatingly condemns Mona's Pride, while Mr. Myatt, who ought to know something about Potatoes, praises it highly; so does Mr. Wheeler, whose Milky White I have already spoken of as apparently a valuable sort, and certainly very excellent as I tasted it. I quite agree with your correspondent that it is ridiculous to give prizes for uncooked Potatoes. Why not make each exhibitor do as the vendors of Potatoes do in London—boil one or two, and leave them on the top of the dish? A Fluke is a handsome Potato, but insipid to a degree. To give prizes as now, is only to be equalled by giving prizes (as I have known to be done during the last season), to Melons without tasting them.

In addition to those I named in my last communication I have some Kidneys from Mr. Webb's, Calcot Gardens, Reading, supplied to me through Messrs. Barr & Sugden, and Early Don, a round sort, highly spoken of by Mr. Turner, of Slough, besides one or two other round sorts; and I feel convinced that if some of your correspondents would kindly make notes of the sorts they grow, the character of the soil in which these are planted, and the manures used, it would be very useful to many who, like myself, are looking out for a good table supply for home consumption, and not for market purposes.—D., Deal.

CYCLAMENS.

We received some Cyclamen leaves and blooms, and some relative queries from a correspondent "S." which we forwarded to Mr. Atkins, and he has obliged us by replying as follows:—

"Thanks for the sight of the leaves and bloom from your correspondent 'S.' With the exception of repandum, (which is that of Sibthorp, true), and possibly the one marked on the back, and much more serrated than the other, they are all of the hederifolium type, though some of them belong to the Greek group. Of the latter I am not at present quite satisfied whether there are distinct species or only varieties; but from researches now making I trust this will before long be satisfactorily determined. I believe I have all of them, with, perhaps,

the exception of the serrated one alluded to; of this I cannot be certain without seeing the bloom. The leaf is much like that of the europæum I have collected in one district.

"One means of determining this, as well as distinguishing some of the others, would be to ascertain whether the leaves rise with, before, or after blooming, and, also, the presence or not of a coronet, or teeth-like protuberances, at the base of the petals—and are any fragrant?—some of the Greek ones are delightfully so.

"I hope before long to see the species satisfactorily reduced to some eight or ten at the utmost. Of upwards of fifty so-called species which I have received since I have been a collector, I am satisfied they will not exceed, if they even amount to that number.—JAMES ATKINS."

PEAR SCIONS EMITTING ROOTS — PARADISE STOCKS.

I AM much obliged by your having inserted my defence against the Paradise stock, and I was not surprised that you had no proofs to offer against its hardiness. And I cannot but think that you prejudged the case, and thereby did me an unintentional injury. I think that the editorial "We think you are right" was uncalled for, it would have been best merely to have given space to Mr. Pearson's little spurt, and left the public to decide between him and me, as it is you have made yourselves parties in the matter at issue, and I think *partial parties*.

You have not been able to show any proofs against the hardiness of the Paradise stock, and I am inclined to think that you have not much root to sustain you in the other case—*i. e.*, the protrusion of roots by the Pear from above its junction with the Quince.

I was engaged yesterday taking up a large number of Pears worked upon the Quince, and I examined many of them minutely, but found no appearance of the little phenomenon you and Mr. Pearson speak of as sure to take place. It struck me that it would be well for me to send you some of my trees, that had been planted an inch or two over the junction of Pear and Quince, that you might see upon what good reason I advise Pears worked upon Quince stocks to be planted an inch or two over the junction. You, I think, will do me the justice to see that in neither of the three trees sent are there any indications of Pear-roots being pushed out. The trees sent have been planted four years, and I think you will allow that they are not destitute of Quince-roots, if they have none from the Pear above. Any one who knows anything about Quince and Pear-roots cannot be deceived. I could have sent you trees that have been planted ten years, in the same way, but deemed them rather bulky.

I now challenge you and Mr. Pearson, and the other fellow, behind the scenes, who draws the strings for Mr. Pearson, to send me a Pear tree that has rooted from above the junction of scion and stock. If you, or any of you, will do this, I will pay £1 to the fund of the "Gardener's Benevolent Institution." But should you fail to do this, you will each of you pay £1 to the same fund. I claim, as a matter of fairness, to have this letter printed *verbatim*, as I consider it a little out of the way for parties to take up a trade catalogue and try to make themselves appear sapient by their hypercritical remarks on subjects they are *evidently* not acquainted with. We all know that trade lists are not, as a class, very correct; I know mine are not, so much so, as I could wish them to be, although I think that they will bear comparison with most of my contemporaries.—JOHN SCOTT.

[We insert the above without any omission or mitigation—though it would have been more merciful to Mr. Scott to have left out much, and to have softened more. Controversy does not require improper motives to be assigned to those who differ from us, and Mr. Scott, if he reflects for a moment, will feel that he was no more justified in charging us with partiality, than we should be in charging him with being prompted by self-interest. There is such a motive as the desire to establish truth, and we claim that as our motive in all which we insert in these columns—and certainly the present discussion is no exception—we have no interest to serve whichever opinion prevails.

Mr. Scott had acted more discreetly if he had allowed the Pommier de Paradis stock question to remain without further agitation, but since he intimates that we refrained from the

subject because we were not "able to show any proofs against its hardiness," we will adduce Mr. Rivers as an evidence.

"The *Pomme de Paradis* seems identical with the 'Dwarf Apple of Armenia,' referred to in the 'Journal of the Horticultural Society,' Part 2, Vol. 3, page 115. It is exceedingly dwarf in its habits, and too tender for this climate, unless in very warm and dry soils. Out of 2000 imported in 1845, more than half died the first season, and two-thirds of the remainder the following. They were planted in fine fertile loam, favourable to the growth of Apples, and on which the *Doonee*, planted the same season, grew with the greatest vigour. The same result attended an importation of 2000 in 1846."—(*Rivers's "Miniature Fruit Garden,"* p. 53.)

Passing on to the question whether the Pear scion emits roots when worked upon a Quince stock. We received from Mr. Scott three Pears so worked, and apparently four years old; the junction of the scion with the stock had been about an inch below the surface. But these afford no evidence that the scion will not emit roots. When the trees are eight or ten years old, and the diameter of the scion then more exceeds the diameter of the stock, then, if the junction has been buried from 3 to 6 inches below the soil's surface, the scion often will emit roots, and as we have seen the roots so emitted, no assertions to the contrary can prevail with us. We do not ask Mr. Scott to admit our testimony; but to show our readers that we are not without corroborative evidence, we add the following quotations:—

"In the planting, should the ground be moist and rich, I plant the trees at the same depth as they were previously planted and had grown in the quarter; but if, on the other hand, it is rather dry, I plant a little deeper, as I find they do better by being so planted, and roots often proceed from the Pear wood as well as from the Quince.—C. B. SAUNDERS, *Corsarean Nursery, Jersey.*"—(*Cottage Gardener*, xi., p. 286.)

The late Mr. Errington, one of the most experienced of fruit-growers, remarking on that statement said—"Mr. Saunders heads rather low on the stock in order to plant low; and others call into action the fibres from the graft or bud, as well as the roots of the Quince; for, as he justly observes, such a course will cause fibres to protrude."—(*Ibid.*, p. 417-8.)

These are unexceptionable witnesses, but we have inquired of Mr. Fish, Mr. Abbey, and Mr. Rivers, and the following are their replies:—

"PEAR TREES ON QUINCE STOCKS.—I have several times examined trees and found roots protruded at the swelled protuberance, where stock and scion meet, but not at all so uniformly as to make the rooting a general rule. I regret now that I did not take that interest in the subject, as to ascertain what kinds of Pear are most apt to root, when the grafted part is covered with earth to the depth of 2 or 3 inches. Apples will also root from the grafted part in similar circumstances.—R. FISH, *Putteridgebury.*"

"Apples on the Crab and Paradise stocks emit surface roots freely, particularly on light gravelly soils. We have some trees on both stocks that have rooted above the surface, and they root as freely above as below the junction of the scion and stock, as also do Plums. Pears on the same soil also emit surface roots abundantly, and nothing will prevent them doing so providing a bud or eye starts from the part covered with soil, and if a cut be made through the bark down to the alburnum roots come plentifully from the cut.

"Mr. Scott, however, obtained no surface roots from planting so deeply as to cover the junction of graft and stock, and we are left to conclude that the part of the stock buried will emit roots, but the part of the graft covered will not do so. This is not consonant with my experience.

"In 1859, I had under my care some Pear trees on the Quince in pots, and these had a swelling above the junction of the graft and stock, similar to that which is found in most fruit trees when the stock does not thicken correspondingly with the graft. They had been worked from 3 to 6 inches above the surface of the soil. From the unsightliness of the excrescence, and to obtain roots from the part of the stock not covered, it was decided to plant them out in a border so deeply as to cover the junction of the graft with the stock. This was done, and the union covered about 3 inches. The consequence was, that some did root from the lower part of the graft at its junction with the stock, and one peculiarity of these trees was, they did not emit roots from the part of the stock buried. The others rooted neither above on the Pear, nor below on the Quince on the parts newly covered with soil. They were examined annually, and some were found to have rooted both

from the Pear and the Quince parts of the stem buried, but it was not until the year 1862, that they all had rooted from the Pear part of the stem buried, with the exception of one, and that was *Beurré d'Aremberg*, and that had not rooted in 1863, on either the stock or graft part buried.—G. ABBEY, *Stanley Hall.*"

Since the foregoing was in type, we have been favoured by Mr. Rivers with a communication relative to the rooting of the Pear scion when grafted on the Quince stock, and he says that we are "perfectly correct." We shall publish his communication next week. It is replete with sound valuable information, not only on Quince but Paradise stocks.

Such an amount of testimony needs no comment, and we now leave the subject; but, for the sake of the Charity, hope Mr. Scott will pay over his wagers sovereign to the Gardeners' Royal Benevolent Institution.—EDS. J. or H.]

THOMSON'S STYPTIC TO PREVENT BLEEDING OF THE VINE AND IN VINE GRAFTING.

In the year 1826 I was put in possession of three rather large vinerias. I was then very young. Since that date I have been more or less a cultivator and, I may say, devotee of the Vine, and during these years I have been a careful observer and experimenter. Few works were then out, and gardeners then, as a rule, would sooner mislead an interloper into their profession than afford him any reliable information, so that I was left to my own resources; but my motto was, and is—"Nil desperandum." I must apologise for this egotism; but I have merely stated it to show that it is not the fancy sketch of yesterday.

Bleeding of the Vine with me is an exception, not a rule, and may be easily avoided, with few exceptions—such as having to prune just before the sap rises, on account of late-hanging Grapes, or in consequence of unripe wood and some minor causes; but as there is now a certain antidote to bleeding, I will at once state my humble opinion as to how it is to be avoided. First, prune as early as possible; secondly, let pruning be done when the atmosphere of the house is perfectly dry, or light a fire to make it so, and then keep the atmosphere dry for a few days at least; but the longer the better. Avoid pruning in damp, muggy weather. I have found the best time for either early or late pruning is when the atmosphere outside is dry, and the readings of the barometer are high. In the first instance, if you examine the cuts, in a month or two you will find the wounds cauterised, if I may use the term, and you may in many instances cut the ends off with a sharp knife, and for the sixteenth or an eighth of an inch find the wood and pith perfectly dry, or healed; whereas in the case of a damp pruning time, and much damp in the house afterwards, you will find the cuts almost green, or, if not green, no particle of dead wood, or contraction of the sap vessels will be seen. Such is my experience in Vines in good health and vigour, and with well-ripened wood. With Vines, the wood of which is not well ripened, it is of double importance, as well as with long-hanging Grapes.

Now, I believe in the old saying—"There is no poison without its antidote;" and in the bleeding of the Vine the antidote or preventive lies in "Thomson's Styptic," advertised in your Journal, &c. A friend knowing I was fond of trying anything new, sent me a bottle as a present. I am happy to say that I did not require any for that purpose; but, considering the reputation of its inventor, I determined to give it a faithful trial. Having some Vines to graft, the sap of which was on the move, I repruned the whole length of one rod, some twenty spurs, and applied the "Styptic" as it is called, choosing a dry sunny day, and in no case have I lost a drop of sap; this was about the 20th of January. I have since treated several Vines in the same manner, and with equally satisfactory results. Upon two or three spurs, it is true, I observed a kind of capsule at the end of the ent spur, I opened one, and by doing so a few drops of sap were lost; I waited till next day about noon, when the sap appears less active, made a fresh cut, and applied the "Styptic" again with the desired effect. The result to me is, that Vines pruned about the proper time and dressed with that composition, will be much benefited as far as a certainty of not bleeding with the rise of the sap is concerned, and that Vines may be pruned even a few days before the buds swell, if carefully dressed with that composition, with perfect satisfaction and success.

Grafting Vines is now occupying a good deal of attention.

My attention was directed to it more than thirty years ago, and on the whole my practice was attended with very marked success, and I hope before the end of the year to be able to introduce a simple and efficacious mode of grafting the Vine, by which a year or more may be saved.

Being desirous of working some new sorts upon established Vines and some young canes, I determined to try "Thomson's Styptic" *versus* my grafting-wax. I received some cuttings or grafts about the 20th of January, at which time the sap of some of the Vines had risen, and the buds were swelling. For graft the first I prepared the scion, the sap of which was rather up, and cut the spur in which it was to be inserted; then drop, drop, drop, away went the sap. I inserted the scion as speedily as possible, but before I could apply the wax the sap was dropping out of the end of the scion. I then put on the hot wax, but it soon sent the sap up in bubbles, and drop, drop, again, but "Nil desperandum," so I took the scion out, dried the end, dipped it into "Thomson's Styptic," and placed it in the sun to dry quickly, then took a piece of strong copper wire, and with a pair of pliers twisted it round the spur close to the main stem until it ceased bleeding. By this time the "Styptic" was dry on the end of the scion. I inserted the latter again, tied it, and applied the "Styptic." As soon as this was thoroughly dry I gave it another dressing, and in two or three hours took off the wire, and it and No. 2, four weeks after being grafted, have shot out nearly equal to the parent stem.

Graft No. 2 was equally forward; but I took the precautions of dipping the end and putting on the wire ligature, and in cutting the spur lost a drop or two of sap owing to its pressure. I inserted the scion, tied it, and applied the "Styptic" twice, with complete success, judging by the vigorous shoot.

No. 3 not being so forward, I did not take the precaution of dipping the end of the scion, but inserted it in the same way as the others. Next morning I found it bleeding from the end; but by a little perseverance with the "Styptic" the bleeding stopped, and the graft is now doing well. I also found some small bubbles at the junction of the grafts, burst one, and a little bleeding resulted; but by taking advantage of a dry atmosphere and the sun, I gave another coating, and all was right. I should have mentioned that only one coating was given at first.

The other grafts, numbering more than thirty, for use and experiment, were made when vegetation was not so forward, and they have all done well so far, except in a few cases where the scions were not appropriate in size, but I think every one will grow.—YORK.

TABLE AND VASE PLANTS.

I now fulfil my promise to enumerate other plants that Mr. Burns uses with good effect at Loughcrew.

He uses at the dinner table different kinds of *Centradenia*, for instance *C. floribunda* and *C. grandiflora*; also *Ixora javanica aurantia* and *I. coccinea*, which, when full of flower, look really beautiful, and with care last in bloom a very long time. *Vinca alba* and *V. rosea* look well; but the flowers soon drop. *Pentas carnea rosea* is a very useful plant for table; *Gardenia citriodora*, when nicely grown and full of flower, is most useful for either table or vase; *Euphorbia jacquiniæflora*, nicely trained on small wires, has a very pretty appearance. Of fine-foliaged plants *Adelaster albivenis*, *Pandanus javanicus variegatus*, and the *Marantas* mentioned at page 143, form the principal; but the *Pandanus* is the king.

Fine-foliaged plants for the breakfast table are *Pothos argyræa*, *Sonerila margaritacea*, the *Eranthemum*, and others mentioned before; also *Selaginella Martensii*, *S. stolonifera*, and *S. dichrous*; but *S. plumosa* is, for table purposes, the best used there.

For vase plants in the rooms are used different varieties of *Deponia*, small plants of *Cyanophyllum magnificum*, *Rivina humilis* when full of berries, and *Croton discolor*, *C. longifolia*, *C. picta*, *C. variegata* (I may just mention, in speaking of *Crotons*, that Mr. Burns has a sport, which, if it remain true, and it is likely to do so, will prove a most valuable addition to the *Croton* family), *Cyrtanthera magnifica*, *Eschynanthus splendens*, and different varieties of *Franciseas*, *Gardenias*, *Alocasias*, and *Caladiums*, besides all those mentioned for table decoration.

Before concluding I may state that Mr. Naper no doubt possesses the best, or one of the best collections of stove plants

to be found in the provinces in Ireland. His *Caladiums* are grown to an immense size, more like *Rhubarb* than anything else to which I can compare them, although by the skilful management of Mr. Burns they retain that great beauty of foliage for which they are so justly noted. Mr. Naper has a plant of *Sphaerogyne latifolia* upwards of 6 feet high, and furnished to the pot with its immense leaves. In bedding and ribbon work the place is not surpassed in Ireland, as nearly forty thousand plants are bedded-out every season. I have often wondered that "D., of Deal, has never visited that pretty part of Ireland. I have no doubt that if he called Mr. Burns would make him very welcome, and perhaps give him one or two of his secrets, that I can testify are worth knowing.—R. M.

RAPHANUS CAUDATUS, OR LONG-TAILED RADISH.

Will you allow me to call the attention of your numerous readers to this new and valuable vegetable, the seeds of which, I see, are now being sent out by Mr. Bull, of Chelsea?

It is a native of Java, and is much used in some parts of India in salads, and being perfectly hardy here, it is likely, I think, to prove very useful. It appears to be one of the *Radish* tribe, but unlike that esculent the seed pods, not the root, are eaten; these are very curious, attaining an immense size in a wonderfully short space of time, sometimes growing 5 or 6 inches in twenty-four hours. The pods are usually from 2 to 3 feet long when full grown, some being straight, others curled into the most fantastic shapes; they are of a most agreeable flavour, and when half grown can be eaten in the same way as a *Radish*, which root they greatly resemble in taste, though their flavour is more delicate. It is, however, when the long pods are boiled that they are most delicious, tasting then much like *Asparagus*, with a slight green-Pea flavour. They should be served on toast, and will form a most agreeable addition and novelty for the table.

The plant is easily cultivated. The seed should be sown in slight heat about the middle of May, and the young plants, when fairly up, planted out in the open air in good rich soil. No further attention is needed except to keep the soil well watered in dry weather, and to keep the ground clear of weeds. In two months from the time of sowing the plants will begin to produce most freely their long pods, which must be gathered young—i. e., half grown, if required for eating raw or for salad. For boiling and pickling they should be suffered to attain their natural size.—J. H.

[It is called *Mougri* in Java, and the specific name "tailed," refers to an appendage of the pods.—Eds.]

RAINFALL AT THWAITE, SUFFOLK, IN 1864 AND 1865.

I AM indebted to Mr. Orlando Whittlecraft, meteorologist, Thwaite, in this county, for the accurate statement of the rainfall in 1864 and 1865, showing the remarkable disparity of the two years. The mean annual rainfall in Suffolk is 22½ inches.

	1864.	1865.
January.....	0.76	1.98
February.....	1.04	1.72
March.....	2.62	2.07
April.....	0.61	0.53
May.....	2.25	1.85
June.....	2.49	2.02
July.....	0.87	5.40
August.....	1.66	5.67
September.....	2.36	0.00
October.....	1.50	8.80
November.....	2.80	2.12
December.....	0.75	1.15
Total.....	19.71	32.81

Mr. O. Whittlecraft has watched very closely from boyhood the various phenomena of the atmosphere, and is the author of the "Climate of England," "Rural Gleanings," "The Weather Almanack," &c. The latter has gained for him a world-wide reputation, the correctness of his predictions surprises even the most incredulous. Out of fifty predictions in one year, only four errors occurred, and in 1859 scarcely one decided failure. If a man, by close observation, can arrive at such just conclusions, his predictions are worthy of the attention of all those who are in any way interested in the weather. Both the farmer

and the gardener, and even the pedestrian, may consult the almanack with great advantage ere they commence operations.—JOHN PERKINS, *Thornham Gardens, Suffolk.*

LANGTON.

THE SEAT OF JOHN JAMES FARQUHARSON, Esq.

AMONG the pleasant reminiscences of my horticultural visit to Dorsetshire last summer, the pleasure I experienced in inspecting the gardens at Langton, is still fresh, notwithstanding that some months have since elapsed. Gratifying as it is to see horticulture practised with skill, and carried on in a spirit worthy of the art, and I may also add the word science, for it must be acknowledged to be both, it becomes almost a duty to record instances that come under notice, where the teachings of science are applied in aid of practical experience. It was through the interest of my kind friend, Mr. Radclyffe, that I was enabled to visit, and to be introduced to Mr. Knox, the gardener at Langton, and to him I have to tender not only acknowledgments for the opportunity of seeing the place, but also a sincere apology for the delay in forwarding my notes to the Editors, knowing that it was expected that I should do so. I was fully aware for some time that the space in "our Journal" would be required for important matter, and it happened, too, that many circumstances at the time combined to prevent putting my notes into a form suitable for publication.

The drive from Rushton to Langton, though not exceeding three miles, is both beautiful and interesting; the undulation of the country rendering it beautiful by the variety of scenery presented at every successive turn of the road, interesting especially in summer, by the fine appearance of the crops on the arable land, and the luxuriance of the herbage in the meadows and pasture fields, testifying to the high character of the agriculture for which the county of Dorset is famous. This is particularly the case along the valley of the Stour, the slopes on both sides of the stream vividly calling to mind the lines of the enthusiastic poet in his eulogy of England—

"Warm with culture, the thick clustering fields
Prolific team."

This is no ideal picture, it is an actual result obtained by the intelligence and perseverance of the occupiers of the land, several of whom I have had the pleasure of meeting in company, and whom I have found to be thorough-going, kind-hearted Englishmen. Their good tillage is, doubtless, favoured by considerate and equitable landowners, and supported by a sturdy and hard-working peasantry. These remarks are intentionally introduced from the fact that the condition of the Dorsetshire labourers has recently been brought prominently before the public in an unfavourable light. However true may be the particular instance that has been the cause of so much comment in the London and other newspapers, it is evidently illegal to apply the case of an individual to a whole class. Hence honourable and worthy gentlemen, their employers, have been brought into disrepute (indirectly, it is true) for causes from which they are as free from censure as those who have been so ready to invoke it. I have more than once seen many of the Dorsetshire labourers at their daily work, and assembled together on the Sabbath in the House of God, clean and neat in their attire and person, attentive to the duties that led them there in company with their employers, and others above them, independent but respectful and cheerful in demeanour. I have also visited some of them in their cottages, clean and comfortable homes, inspected their productive and well-managed garden plots, admired their ingenuity and thrift in the care of their bees and pigs, and have witnessed the honest pride with which they have related with many words how they won a prize for honey, another for Potatoes, and so forth at the neighbouring local shows.

Langton is situated one mile from the town of Blandford. It is the seat of John James Farquharson, Esq., a gentleman much beloved and respected by all classes, and an old and valued friend of Mr. Radclyffe's family. The residence is palatial, and of costly construction. It was designed by the distinguished architect, Cotterell, and was the last built under his direction before his death. It took five years in construction, and cost, it is said, £100,000. The internal arrangements of the mansion are most complete, and the stables, with the other necessary offices of a first-class establishment, are on a corresponding scale of excellence, the whole construction being that of a master mind, and the materials the best that wealth and art could put together. Mr. Farquharson, or as he is generally

denominated, "the good old squire," is an octogenarian, and is, it is to be hoped, in good sound health. Long may he be preserved to the county of Dorset, and neighbourhood of Blandford. Besides for his hospitality, the county owes him a debt of gratitude for hunting the whole county at his own cost, with his celebrated fox hounds. One can tell pretty well the character of a gentleman by the conduct of his servants. From them I received the most polite attention, especially from Mr. Knox, formerly with the Duke of Northumberland, at Alnwick Castle, and now Mr. Farquharson's head gardener, and truly it is no idle compliment to speak highly of an intelligent, industrious, and hard-working man, who seems to have nothing so much at heart as his employer's interest. Mr. Knox fully shares in the distinction gained by his countrymen, our northern brethren, in their successful fruit culture, the vineries and Pine-houses being a marked feature in the horticulture of Langton. A circumstance of which I was afterwards informed is deserving of note. So careful and anxious is Mr. Knox, that the plants under his care, particularly the fine specimens to be presently noticed, are strictly attended to, that he does all the potting and re-potting with his own hands, notwithstanding that he has sufficient help at his command.

Under such efficient guidance, I now note what the various houses contained. The first is occupied chiefly by tropical and sub-tropical Ferns; specimen plants of the following were conspicuous, both for size and healthy appearance—Woodwardia, radiicans, Adiantum formosum, Asplenium nidus, Adiantum trapeziforme, Blechnum australe, and some of the Lycopods.

The second house, a vinery, was occupied by Black Hamburghs, and Vines in pots for dessert and dinner-table decoration, and the third by fine-foliaged plants. Among them the following well-known species were remarkable—*Dracena ferrea*, *D. terminalis*, *Caladium argyrites*, *C. Chantini*, *C. Belleymeii*, *C. bicolor splendens*, *C. pictum*, *Dieffenbachia picta*, *Croton variegata*, *Tradescantia discolor lineata*, with some of the most distinct Begonias. The fourth house was devoted to Melons, the kinds in cultivation were Meredith's Cashmere, Scarlet Gem, and a seedling of Mr. Knox's (green). The sixth was a Pine stove for succession; the seventh a forcing stove for various subjects; the eighth was for Pines then being cut. The fruit in this stove was one of the most interesting features of the place, on account of the size, weight, and flavour obtained. Many of the Pines when measured were found to be 12 and 13 inches in height, thus attesting the perfection of the cultivation.

One may devote particular attention to the cultivation of one kind of flower or fruit, or to a class of plants, or to the introduction of ornamental species, that would give a novel and improved appearance to the garden (and, indeed, striking and even great results have been obtained by the concentration of the energies of distinguished men upon the subject to which they have devoted their especial care—instances of this are evident in the case of the Rose, Gladiolus, Strawberry, Orchids, Ferns, and Conifers); but if I were asked, "In what department of horticultural art have the most useful, and the greatest general services been rendered?" I should without hesitation reply, "In the kitchen and fruit garden." When, therefore, these departments show the highest development, so far as the present state of gardening admits, a corresponding feeling of satisfaction predominates. Such was my impression while looking over the kitchen garden at Langton, at a time when the greater portion of the principal crops were approaching maturity. The fine climate of Dorsetshire is assuredly favourable to these departments, and last season particularly so; and not at Langton only, but in other places which I had the pleasure of seeing, the remark holds equally true. Among them I may mention Bryanstone, the seat of Lord Portman, where the superb condition of the wall fruit, and the productivity of the crops were, to me, matters of astonishment. To single one case out of many: several roots of different kinds of Potatoes were dug up at random in my presence in different parts of the garden, and the yield was in every instance not less than twenty-five good-sized tubers, in many thirty; and as many as forty, and even forty-five, were counted on one root. Had his lordship's courteous permission to take notes of what I saw during my inspection been received in time, I should have felt bound to have forwarded you those notes. I can now only offer my best thanks to Mr. Leach, the head gardener, for his kindness, and the great trouble he took in showing me over the splendid gardens and grounds at Bryanstone.

The Strawberry crop at Langton last summer was light, owing, no doubt, to causes that have already been sufficiently

discussed in former Numbers of the Journal. The kinds found to be most generally serviceable, are—Rivers' Eliza, Eugénie, Prince of Wales, and two or three other esteemed and well-known varieties. For forcing, Alice Maud, and Keens' Seedling, are chiefly used.

The flower garden is on the south-east side of the mansion. The arrangement is simple but elegant, consisting of beds for summer decoration, with borders for the best perennial plants, with clumps of shrubs planted here and there. As description without a plan is not intelligible or even possible, it will be sufficient to state the kinds of bedding plants used. The display was brilliant without being gaudy, and the harmony of the colours all that could be desired. The plants employed were: Geraniums—Trentham Rose, Christine, Tom Thumb, Beauty of Brinton, a variety with large trusses, very good, Zonate kinds; Cerise Unique, Compacta, Variegated Alma, Bijou, Flower of the Day, and Mrs. Mangles. Verbenas—Firefly, Ariosto, Purple King, Lord Raglan, Mrs. Holford, Desdemona, Perfume, Madeleine, White Perfection, and a seedling pink of Mr. Knox's raising, a very useful and effective colour, distinct and free blooming. Mr. Knox does not think this seedling of sufficient merit to send out; but I thought at the time that there was room for a different opinion of it. It is invidious to set up one flower to distinction against another, as the bedding Geranium has sometimes been against the Verbena, much to the disfavour of the latter, and I share in the regret which some florists have expressed, that Verbenas generally, excepting Purple King, have been greatly discarded without sufficient reason, and often replaced by other subjects by no means surpassing them. Though one season may prove unfavourable to the Verbena, and favourable to the Geranium, the conditions as regards these two flowers may be just the reverse in another year. Last season showed that where good kinds of Verbenas were bedded out, in nearly every instance a satisfactory continuous bloom resulted. I hope that we shall see more of them than we have of late; the beds at Langton were excellent. Besides Geraniums and Verbenas, the following plants were used, either for edging or otherwise—*Cerastium tomentosum*, *Konigia maritima*, *Perilla nankinensis*, *Centaurea argentea*, *Cineraria maritima*, *Mentha rotundifolia variegata*, *Tropaeolum Lobbianum*, and *Calceolaria Anrea floribunda*.

The parks in which the mansions of the principal landowners of the county of Dorset are situated, are surpassed by few in the fine appearance of the deciduous trees with which they are adorned. This is especially the case at Langton, Critchill, and Bryanstone. At the last-mentioned the appearance in summer is very manifestly improved by the intermixture of exotic species, that have now attained considerable size. Among them I noticed *Acer eriocarpon*, *A. platanoides*, and some of the American *Crataegus*. I mention this to remind your readers that the planting of exotic deciduous trees, which would so materially add to the beauty of our park and woodland scenery, is still deplorably and unaccountably neglected, excepting in the public parks, and a few other places. Coniferae are not extensively planted in Dorsetshire—i.e., in the places I visited, it being found that the soil is not very favourable to their growth.

As it has been announced that the worthy rector of Rushton will shortly retire from his clerical duties, permit me in conclusion to join cordially in the wish so aptly expressed by your correspondent, "*D., Deal*," that he may long enjoy his *otium cum dignitate*, a wish which I am sure will be heartily concurred in by all who have the happiness of knowing him.—ADOLPHUS H. KENT.

BURYING THE STEMS OF ROSE TREES.

I HAVE always thought that to bury the stem of any tree more than 1 or 2 inches is contrary to nature, but mention being made by "T. T.," at page 142, of some trees, the stems of which had been buried 4 feet, I was reminded of some Rose trees which the head gamekeeper planted at his cottage here. They were planted 4 feet deep, the only object in doing so being to have them dwarf. Well, such wood and such blooms I have never seen before nor since, scarcely a sucker makes its appearance, and the watering-pot is never required.

I have made it a practice for several years to put clay on the branches of Peach, Nectarine, and Apricot trees, when the sun has in any way ruffled or cracked the bark, and I always found at the end of the season that some nice new bark had been made. Some years ago we cleared the stems of several Oak and other trees which had been buried several feet, but I never saw that the branches were injured at all; the only case that I

remember was a Lime tree which had been earthed up several feet, and the tree will never recover.

With respect to Grape Vines, I am in favour of keeping the stems above ground, the bark being more tender than that of most other trees, and, consequently, more likely to decay.

Perhaps "T. T." will kindly give us the names of the trees which have done so well on the "landing-up system."—JOHN PERKINS, *Thornham Gardens, Suffolk*.

ROYAL HORTICULTURAL SOCIETY.

WE are authorised to state that the Council of the Royal Horticultural Society, having received an application from Mr. William Earley, Digswell, that the Journal of the Society should be supplied to gardeners at a cheaper rate than to the public, have determined that any *bonâ fide* gardener sending to the Assistant Secretary, Royal Horticultural Society, South Kensington, the sum of 4s. 4d. in postage stamps, being one-half the charge to the public, will be supplied with the Journal quarterly for twelve months.

THROUGH the continuance of the severe frost that commenced in the middle of last week, the Meeting on Saturday last was not well supplied with exhibition subjects. Messrs. Cutbush & Son were almost the only exhibitors, and they filled one of the large tables entirely themselves with a large collection of forced flowers and a very fine exhibition of forced bulbs, to both of which first prizes were awarded. Messrs. Cutbush also exhibited some well-bloomed plants of forced Lily of the Valley, which received an extra prize. Mr. Young, gardener to Mrs. Barclay, of Highgate, sent a large and handsome specimen of *Oncidium sphecelatum majus*, full of bloom, and which elicited much praise in favour of Mr. Young's successful cultivation. It was awarded an extra first prize. Messrs. Lucking, Brothers, sent a fine collection of forced flowers, which received a first-class certificate.

VERBENA CUTTINGS FAILING.

CAN there really be a disease amongst Verbenas? I thought the only reason they have done so badly this season, is, as stated in the Journal of February 6th, being covered with thrips.

A friend of mine, a large and generally a very successful grower of the Verbena, has the following plan.

Early in July he takes a few cuttings of each kind and dibbles them in the alleys between his Asparagus-beds. After well watering they require no further attention, except a sprinkling with the syringe to keep them from drooping, as the Asparagus stems give a nice shade.

When grown a couple of inches high the tops are pinched off. By the end of August they are taken up, three or four plants put into a 48-pot, kept out of doors free from worms, and the branches stopped as required. By the usual time to take into the greenhouse they are strong and bushy. This season he finds, is no exception. I should scarcely like to say how many dozens of cuttings could be taken from each pot at the present time.—W. C.

WINTER TREATMENT OF POT VINES.

THE fruiting of Vines in pots often leads many young beginners into difficulties, and in some cases they lose their situations through buying from the nurseries, for fruiting in pots, Vines which have been growing in bottom heat all the summer, in many cases up to the end of August or September, when they are ready for sale. They will then have filled a 10-inch pot with good, well-ripened roots and masses of fibres; and the canes will be 6 feet long, short-jointed, in fact everything that can be desired. A gardener obtaining the permission of his employer to buy some pot Vines for starting early, say in January, would most probably order them in October. The employer would then inquire if the Vines had come, and the gardener would answer in the affirmative, and say they were in excellent condition and sure to produce a good crop of Grapes. Such a result would not be unlikely if they were treated properly from October to January. Now, where are the pot Vines put when the gardener receives them? Any place will do for them till they are wanted, he often says—out of doors exposed to all weather, cold rains, frost, and hot sun. It is very certain that the canes will look all right throughout; but how is it with the good roots and masses of fibres, without which we cannot have fruit? They are too often dead by the time they are wanted, in consequence of exposure to too much wet and cold, or from drying in a shed.

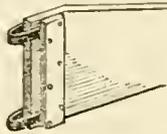
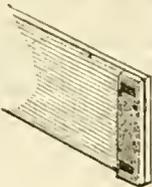
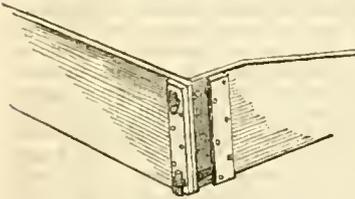
The consequence is, the Vines will break very well, but very seldom show fruit, and the gardener is very much disappointed, the master becomes discouraged, and, perhaps, the evil does not end there.

I will now endeavour to show the beginner and those who have not had much experience in fruiting pot Vines, how to save the small fibrous roots and so make sure of plenty of fruit. If you buy your Vines, do that as soon after September as possible, take them to the potting-bench, and with a hammer gently break out the bottom of the pot, taking great care not to injure the roots. If the Vine is in a 10-inch pot, place it in an 18-inch pot; if received in one of greater or less size, use a larger or smaller pot accordingly. For soil employ good maiden loam enriched with manure, and let it be far enough below the rim of the pot to allow of good summer surfacings. I find a good rough loam well mixed with well dried sheep manure, such as one would find at the bottom of the manure-tank, a first-rate mulching. If the Vines want pruning, let this be done at once, as they will be sure to bleed if cut a month before starting. After potting place them in the greenhouse, or in any structure from which the frost and rain are just excluded, giving them a little water two or three times, just enough to keep them from becoming too dry, and if proper care be taken of them after starting, few gardeners will have cause to complain of their pot Vines not fruiting.—H. COMBLEY, Gardener, Hendre.

JOINTS OF CUCUMBER AND MELON-FRAMES.

WHEN out of use the difficulty of storing these frames renders their needless exposure to the weather almost a necessity; and when required for use, they are so cumbersome, when large, as to require an amount of labour that is rendered needless if the joints are so constructed as to admit of their being readily taken to pieces.

We have seen the ends of the sides so cut as to admit of this, but, then, what with the swelling of the wood when wetted, and the hammering consequently required, joints thus constructed were soon broken, and the plan condemned. In America they acquire the convenience, and avoid the evil, by having the joints made of iron, as represented in the annexed drawings, which we copy from the *Canada Farmer*.



UPRIGHT TUBULAR BOILERS.

In accordance with Mr. Cooper's request, I have much pleasure in giving my opinion and experience of Clarke's water-jacket boilers. I have had them at work for nearly three years, and they seem to act now as well as they did at first. I consider that they are the best boiler constructed, that they will not be readily surpassed by any subsequent invention, and that they possess all the qualities which your correspondents consider desirable.

Previous to having Clarke's boiler, I used the saddle, but I find as much difference between the two as there is between a locomotive and the old stage coach. Mine are two £25 double tubular boilers, they are 4 feet 6 inches high, and 3 feet in diameter. If any of your correspondents is doubtful about the working and advantages of these boilers, he had better come and look at the two I have, and which heat eight houses. The lengths of these horses are, one of 55 yards, one of 30 yards, two of 26 yards, two of 17 yards, and two of 11 yards. Two boilers of the same size may also be seen at the proprietor's residence, Vinery House, Allerton, near Liverpool, and they have more to do than mine. I think he told me that they had to heat about 6000 feet of piping. The visitor would there see, I believe, four of the finest vineries in England.—JAMES WHITEHEAD, Park House, Prescot.

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE ground during the past month has been generally drenched with rain, so that gardening operations could not be prosecuted with vigour, but the frosts and biting winds that we are now enduring, though unfavourable to vegetation, have afforded a very seasonable opportunity for forking over ridges, wheeling manure, and trenching up pieces of ground as they became vacant. The soil will be in fine condition, and committing seed to the earth must be vigorously followed up on all suitable occasions. Continue the general sowing of main crops according to the state of the soil and the locality. *Brussels Sprouts*, make a small sowing of this, as also *Borecole* and *Green Savoy*. To secure heavy crops of *Borecole*, a deep rich soil is essential, and the ground should be trenched 2 feet deep and liberally supplied with manure. *Carrots*, sow the main crop; a light deep sandy loam is most suitable, and, as manure induces forked and ill-shaped roots, ground which has been manured freely in the previous season should be selected. The soil should be trenched deeply. *Cauliflowers*, attend to the pricking-out of these, also of *Lettuces* and *Cabbages*. *Leeks*, sow fall crops of the London Flag. The ground for this crop should be heavily dressed with well-rotted manure, and trenched 2 feet deep. Some growers dig out narrow trenches, and fill in with manure, as is done for *Celery*, but, except on very poor soil, this is unnecessary. *Onions*, continue the main sowings. A rather strong, deep, and rich loamy soil is most suitable for this crop. Where very large bulbs are desired, soil of this nature is required, and it is observed that Onions grown on a strong soil are less liable to be attacked by the maggot than in light sandy soils. *Peas* and *Beans*, in sowing these, if there is any fear of their being attacked by the wire-worm, it is a good plan, after they are sown in the drills, and previously to covering them in, to water them with spirits of tar, diluted with water in the proportion of one pint to six gallons of water, and mice do not take to them so readily when they are thus treated. Advancing crops of *Peas* and *Beans* should have more earth drawn to them, and some branches of *Spruce Fir* or other protecting material stuck in on the windward side of the *Peas*. *Parsnips*, sow the main crop; they succeed best in deep free soil, and, as the application of manure tends to the production of forked or badly-formed roots, the ground to be trenched 2 feet deep and manure applied at the bottom. *Potatoes*, attend to putting in this crop. *Salsafy*, sow full crops of this, as also of *Scorzoner*. *Herbs*, dress *Mint* and *Tarragon* beds with light decomposed manure. Look over *Herb*-beds, prick them up, and add fresh soil where necessary; now is a good time to divide the roots, and make fresh plantations. *Sea-kale*, make fresh plantations of this and *Rhubarb*. They delight in a deep rich soil; it should be trenched 2 or 3 feet deep where it can be done, working in a good quantity of rich manure during the operation. These multifarious directions betoken a busy season; they must be systematically followed up with attention to neatness; whatever is commenced should be completed, and left as neat as possible.

FRUIT GARDEN.

We must look out for the opening blossoms, and be ready on the first emergency to afford protection. Woollen net, stout straw ropes stretched upon poles, or light frames covered with oiled calico, are among the available materials for the purpose. If not already done, finish the pruning and nailing of fruit trees. Should any of them be subject to the caterpillar, dust them well with newly-slaked lime or soot immediately after a shower of rain, or dash water amongst the branches; this should be done immediately, before the buds are too far advanced. For the destruction of the Gooseberry caterpillar, now is a good time to rake away the earth from the stems of Gooseberry and Currant trees, and to dress them with soot and wood-ashes, returning the earth as soon as it is performed; prevention is better than cure, and this will save much hand-picking by-and-by.

FLOWER GARDEN.

Prepare a scheme for filling the beds in the flower garden, and estimate the number of plants required in order to propagate a sufficient stock without delay. Dress, when bulbs are coming through, with care, and plant out autumn-sown annuals. Those who plant old roots of *Dahlias*, which, by-the-by, are superior to young cuttings for general display if properly staked out, may put them in short, soiling them over 4 inches deep for fear of frost. Plant *Lily of the Valley* when requisite.

Plant out Pansies, Carnations, &c. Sow Wind Anemones for autumn flowering, and attend carefully to the sowing of hardy annuals, placing inverted pots over them where shy or liable to be devoured. Do not forget Mignonette and Sweet Peas. Have soil and pots in readiness for potting Carnations, for which purpose mix up three parts turfy loam, two parts well-rotted cowdung, and one part rough sand and charcoal together, and remove this compost into the potting-shed.

GREENHOUSE AND CONSERVATORY.

The usual campaign of potting must forthwith commence, and continue, where complete cultivation is aimed at, with scarcely any intermission until next October. Formerly it was the custom to top-dress all greenhouse plants in February; but now, however, there is much less of this top-dressing, and plants are shifted by good cultivators according to their habits and the purposes for which they are intended. The erroneous practices consist in overpotting, or potting in too rich a compost, plants which naturally run too much to leaf. It is obvious that such plants as the Veronica Andersoni will not bear the application of such stimulating composts as the *Thunbergia alata*, neither should they be so suddenly indulged with liberal pot-room. For plants of gross habit, plain, simple, leamy soils will in general be found quite rich enough without the addition of stimulating manures. The Camellias intended for flowering late in the autumn should now be forced into wood under a temperature of from 60° to 65°, shade is necessary while making their young wood. Those exhausted with flowering should be cut back and removed to a cool greenhouse for three weeks, giving them a little liquid manure. The same practice will do for the Indian Azaleas. See to regularly shifting the Cinerarias, Palargeniums, Calceolarias, Fuchsias, &c. Heaths may now be shifted. Use abundance of drainage and sandy heath soil full of fibres; thrust it in lumps round the ball, now and then forcing down pieces of stone or lumps of charcoal; and finally coat over the surface with some of the finer portions of the soil, which should contain a liberal amount of sand. The hall must be thoroughly moist before shifting, for if completely dry no after-watering can bring it right. Pot Cape and other bulbs as soon as the foliage is becoming strong. Use chiefly loam, leaf soil, and silver sand.

PITS AND FRAMES.

Maintain a kindly heat in the cutting-frame, top those cuttings that have taken root and are beginning to grow. Divide and pot singly into three-inch pots the old stools of herbaceous Lobelias. Fill a box with roots of *Verbena venosa*, and place them in heat. Mixed in a bed with Golden Chain Geranium these were very effective at Shrubland Park. Continue to put in cuttings as previously recommended. Remove the autumn-struck cuttings which were potted off last month, into a cold frame or pit. One of these cold pits should be filled up with ashes for the reception of the thinnings of the greenhouse. Many of the hardwooded tribes may be moved here and matted at night. This will make way for the increasing size and number of the Fuchsias, Verbenas, Cinerarias, Calceolarias, &c.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

MERELY attended to vegetables, &c., under protection and glass. Placed some hay and litter over Broccoli that was forward, protected Cauliflowers, wheeled when the ground was hard, and dug and trenched when soft and dry enough.

Snow.—There being a fall of from 3 to 4 inches of snow on Monday night and Tuesday morning, attended with a temperature not below freezing point, a number of men were sent to roll the snow into huge lumps, and then wheel it at once into the ice-well. Where the snow can be collected near the ice-well this is a better plan than using carts lumbering about. Almost every schoolboy knows how to roll a huge snowball. A good lump is collected and patted with the hands, and then turned over and over, taking up the snow as it goes. This was done so regularly that we quite cleared a piece of the park, the want of frost before the snow came causing the snow to come up clean from the grass. In loading, the barrow was placed on its side, the huge lump rolled into it, and then the barrow raised to the level, and wheeled to its destination. The road to the ice-well became very sloppy towards the afternoon, still with more men any quantity of snow might thus have been collected. When well thumped together by heavy beaters, it

is almost as good for keeping as ice. Our general practice is to do nothing with ice or snow before the men have a warm breakfast; but on this occasion, as other work had to be done in the morning, the preparatory work for the snow was done before breakfast, and we were alarmed by a very healthy man taking a fainting fit as soon as his hands touched the snow. He was all right next day, but we mention it as a warning, that no such work at any time should be engaged in before the men have breakfasted.

In general, the younger the lads are, the better they will roll the snow. Anything like gloves is generally unnecessary. After the first handling there will be little of the sensation of cold in the hands, quite the reverse. We have seen shovelling resorted to instead of rolling, but that is a tedious process, and does not compress the snow as rolling does. When carts have to be used, the huge lumps can be divided and pitched in with shovels. Such snow thus stored we have found more prized than ice by some butlers and housekeepers, more especially if a good thickness of ice was placed over the snow, thus compressing it still more effectually. It packs better round vessels than ice would do, unless crushed by the process advocated by Mr. Perkins. We hope to have the pleasure of placing ice above the snow to-morrow (Friday) morning. On Wednesday morning there was a sharp frost, but no ice, except where sheltered from the wind, the wind keeping the surface of the water in motion. On this (Thursday) morning, the coldest of the season, ice is formed, and there is every appearance that it will be thick enough to bear the ice hooks to-morrow. We shall have to be satisfied with breaking it sufficiently, so that there shall be enough of small ice to pack among the larger pieces.

FRUIT GARDEN.

Went on with pruning out of doors in favourable weather. Syringed the trees in the orchard-house with the sulphur-and-lime water, wetting every twig the pots exposed, and allowing it to run down the wall. This is done merely as a matter of precaution. We scarcely had an insect of any kind in these houses last season. If the frost is likely to be sharp to-night, will shut up these houses, as we did last night, having previously left all the air on that we could to be safe from wind, so as to keep the buds back. As these buds are swelling now we should not like them to have too much frost. A little will not only help to retard them, but will help to destroy any eggs of insects that must have been coming forward in the mild weather. With the buds in the present state, only a very few beginning to show colour, we should consider the trees quite safe in the still somewhat-dry atmosphere of the house if the temperature out of doors did not fall much below 20° from the freezing-point. We would hardly consider the buds of Apricots and Peaches out of doors safe if the thermometer indicated merely from 8° to 12° above zero, if no protection were given to them. On Thursday morning, having nothing better at hand, shook out some long litter from the stables, and stuck handfuls of it all over the Apricot trees, and some Laurel branches over the Peach and Fig trees out of doors. This litter can very soon be removed, and if the frost continue severe it will tend to keep all safe. We recollect of one March when the frost blackened the buds of Apricots to the core, and they were not more forward than they are now. We have forgotten to say, when adverting to the orchard-house above, that the frost has just crusted the surface of the ground and the surface soil in pots. We do not want the frost to do more for the pots, and, therefore, have placed a little litter over and round those not previously protected. Expecting frost on Wednesday night, the Strawberry-pots removed to the orchard-house had a sprinkling of rough hay shaken all over them to keep the soil and roots from being hard frozen.

Peach Trees under Glass.—Thinned-out shoots in the Peach-house, and stopped a good many, so as not to arrest root-action by taking away too much growth at once, looking out for a new shoot at the base of the one now showing fruit. As some of the young fruit did not seem to part with the calyx freely, drew the fingers over them, which was better than much syringing in the dull cloudy weather. As yet no insect of any kind has appeared. A few pans on the pipes are now kept supplied with soot and sulphur water. When the pipes are rather cool they have been several times damped with tea made from pouring hot water over the bruised young shoots. When used clear, weak, and fresh it makes a nice wash for syringing, the little prussic acid peculiarly suiting the Peach, and, unlike many another wash that leaves less or more of nastiness behind it, this leaves the nice aroma of confectionary custards. It must be used fresh, weak, and clear, or it will be apt to leave a

stain on the fruit. We once had the charge of a Peach wall that, after a most trying spring, became a moving mass in May, every shoot having its full colony of insects. The trees were freely disbudged, or rather dis-shooted, the fingers being drawn through the shoots left, to crush the insects. All the shoots removed were collected in apronfuls, and then were malleted or bruised, and thrown into a barrel, and about a dozen gallons of water, near the boiling-point, poured over them. There would be fully a couple of bushels of the shoots when roughly bruised. After standing covered up with sacks and mats for a couple of hours the liquor was poured off, and water added to make forty gallons, which were used to thoroughly engine the wall and trees about four o'clock in the afternoon. The liquid was used at a temperature of 120°. Next morning the trees were washed with clean water. In the afternoon the tea-process was repeated, and another washing of clear water next morning, and scarcely an insect afterwards appeared during the season. We have never found the wash so thoroughly efficacious as that one time, though we have often found it useful. This is only one of the many singularities about all insects. What will destroy them to all appearance at one time will scarcely injure them at another. We mention this circumstance because we frequently omit to use what we have close beside us, and which in many cases might be as effectual for our purpose as the tobacco and washes which must be purchased.

Two matters we deem of importance in Peach-houses and vineries, figeries, &c., where trees are in a growing state in this very changeable weather. The first is, to keep the temperature as low as to be safe when the weather is very dull, or when the frost is very severe. This rule may hold good unless when Vines are in bloom, but even then 5° lower will be better than a scorching heat in the pipes or flue. For instance, if the general temperature of a Peach-house was 55° at night, we would sooner see the thermometer down to 50°, or even 45°, than up to 60°, on such a night as that of Wednesday. This will save alike exhausting the energies of the plant, and making too great a demand on the coal heap. In dull days the rise in temperature should take place chiefly during the day, when there is most light, as was recently alluded to. Hence the importance of a little covering on the glass where it can be applied, or double roofs of clear glass with confined air between them, as then the heating medium requires to be less hot in severe weather, and it is always an advantage to be able to keep up the requisite temperature without greatly increasing the heat in pipes or flues.

Having had a great deal to do with pipes badly placed, and with a great deficiency of piping surface, we uniformly advise all who consult us on heating houses, not to be too economical in the quantity of piping, as that is only one outlay, whilst if there is a deficiency of piping there will be a constant extra outlay for fuel, so much of the heat going up the chimney, and the heat from the few pipes so very hot, is always unhealthy for plants, and just in proportion to their tenderness. We have seen the leaves of Ferns shrivelled up in a temperature of from 60° to 65° in winter, whilst in a similar temperature, and with merely a glass division between them, the same kinds of Ferns were as healthy as could be. There was no difference except this, in one division there were two pipes, in the other four. About five years ago a gentleman had two low houses, each separately heated, in which he wished to maintain an average temperature of 60° in winter. Five four-inch pipes were recommended for each. In a fit of economy, three pipes were placed in one house, and he wrote lately to say that the extra expense for fuel would have paid for the additional piping twenty times over, and he would have had a milder and more healthy heat.

The second point very apt to be overlooked, especially by beginners, is to guard against a strong heat in the heating medium and a powerful bright sun ever meeting together, and especially in frosty weather. As alluded to above, a fire may be put on in a dull morning, whether frosty or not, to raise the temperature in unison with the greater though dull light; but if the morning is frosty and promises to be bright, then the fires should be banked up or allowed to go out, as provided a little air at the top is given early, it will be safer to allow the house to rise 10° or 20° with sun heat, instead of giving much cold air, which one would be obliged to do, or shade the house if there was a strong heat in pipe or flue, and a bright sun telling on the atmosphere of the house at the same time.

Syringing.—Thanks to Mr. Reid (page 163) for so far corroborating what is said (page 169), of insects being carried from

place to place on the clothes of workmen, and especially for the home thrusts at the constant use of the syringe. The pipes are so placed in our Peach-house that without the syringe we could not keep the trees clean, and perhaps the same remark would apply to Peaches under glass, and even out of doors they are refreshed by means of a good washing after a warm day. We used, in the case of Vines, to think that in early forcing a sprinkling frequently with the syringe was necessary to soften the buds. We question very much if a damp atmosphere would not do this better. For some time we have syringed late Vines little or none at any time, and never after they were fairly broken, except sometimes to give one good washing with clear water just after the fruit was set, to clear away all the remains of the bloom. The leaves never looked as if a syringing would do them much good. One reason, besides the saving of labour, in our case, was the next to impossibility of obtaining water clear enough for the purpose. Sprinkling the paths and floors seemed to give quite enough of atmospheric moisture, especially to late vineries. All these matters are worth discussing. Then there is no reason why a man should not hold his own opinions, and yet be large-minded enough to believe that another man may have what seemed to him as good reasons for holding opinions quite different. There may be many roads to the same place, and every man may use that which he likes best, without finding fault with his neighbour. The world would be better every way if there were less of the infallible amongst us.

Stokeholes.—A number of inquiries have come to us, as to keeping water out of stokeholes, or getting rid of it when there, no doubt owing to the great quantity of rain. Where a stokehole must be rather deep, and unprotected by a shed, and the water rises nearly to the surface in general seasons, the bottoms and walls of the stokehole will have to be laid as carefully in cement, to keep water out, as if the intention had been to keep water in. Much, also, may be done by taking the surface water that falls a good way from the neighbourhood of the stokehole. We used to be very much annoyed by one stokehole in a pit-and-frame ground. A deep dumb well had been made to keep the place dry, but though 40 or more feet in depth, it soon became filled after a heavy rain, at least to the height of the bottom of the stokehole, and then there was a vast amount of work in emptying the well in order to drain the stokehole dry. We took all the surface water past the well into cesspools, and thence by pipes to a pond at a distance, made to receive it. This winter we have been troubled with water in a stokehole with a flap over it, not far from the front of a vinery-border, the drainage of which also goes into a dumb well. We could hardly think that the well could be full; we suspected surface water, and so arranged the fall of the ground that all the surface water would tend to a point the farthest possible from the stokehole. Still, after a heavy rain, we would have a foot or two of water in the stokehole. We think we have now found out the cause. A few yards from the stokehole there is a small cemented cesspool covered with a slate and then with gravel, in which meet the pipes that convey the water from several roofs before it is taken away by another pipe to a large outside tank. When that tank is nearly full of water, the water stands within a little of the top of the pipes in the cesspool. Two or three small cracks were found in the cesspool, and from these the water had slowly oozed until it found its way to the stokehole. Since the cesspool has been fresh cemented we have had no more water to speak of. Now, these may give hints to those troubled with water, and even rising above the furnace-bars. The best security against such moisture is having a drain from the bottom of the stokehole; but where that would be very expensive or next to impracticable, much may be done by taking away the surface water and cementing the walls of the stokehole. In ground where water will not stand there need be little difficulty.

ORNAMENTAL DEPARTMENT.

Cleared the centre of the walks from snow, and lightened some of the shrubs rather heavily loaded. The last snow-fall, though lasting but a short time, did a good deal of injury in this respect. In mild weather planting shrubs and Roses might be proceeded with. Dug up some beds and borders for flowering bedding plants, loosening the soil well at bottom, and mixing a little of it with surface soil, leaving it in ridges, and when frosty scattering some rotten hotbed manure over the ridges to become well sweetened, as the object is the reverse of raising a heavy Turnip crop, in which case the sooner the manure is buried out of sight the better.

Placed dry burnt earth and rubbish round Hollyhock stools

to keep frost and damp from injuring them. Dahlias wanted early should now be placed in heat. The best plan for those without frames is to let them bud in their winter cool quarters, and then divide with a good tuber, or piece of tuber to each bud or shoot. Then no better plan for them can be adopted than to fix on a piece of ground with a hard surface; place on that 2 or 3 inches of leaf mould or a little rotten dung and nice soil; on that place the divided tubers, from 4 to 6 inches apart, and then cover with from 3 to 4 inches of nice open stuff, rotten dung forming a part. In this the tubers will root freely, and about the end of May you will be able to take up the plants, with a large ball of rich earth, and transfer them to suitable holes in the flower garden. This is a far better plan than dividing the tubers at planting time, or even planting the tubers whole. The stems might want a little protection from frost in the beginning of May. From the middle to the end of March would be time enough to divide the tubers. Kinds wanted to be increased by cuttings should be placed in heat directly.

In cold pits, all such plants as Auriculas, Polyanthus, Wall-flowers, Stocks, Carnations, &c., should be kept dry, be protected from severe frost, but have air at all other times by tilting the sashes. If the frost continue for a week, or even less, mice must be looked after. We have known sad destruction effected in one night.

Calceolarias for bedding will sustain no injury from the damp if kept cool and air be given in suitable weather; we have not uncovered for two days, but we know the bed is cool. In addition to the little straw tied along the walls, hung a little more over from the wall-plate, or rather some litter, as not unfrequently after carefully protecting the glass the frost enters through the walls.

In forcing-pits, propagating-pits, &c., kept up a nice mild heat, and as Hyacinths, Peutzias, double Prunus, Pinks, shrubs, &c., came into bloom, removed them to a cooler place, to prepare for the greenhouse or mansion.

Cinerarias do very well in rooms where there is not an excess of dry heat. Where near to fires, the leaves must be often damped to keep them healthy. Sudden transitions from cold to heat, or from a moist to a dry atmosphere, and *vice versa*, are to be avoided. For all plants in rooms where large fires are used, a sponging or damping the foliage will be the best mode of keeping them in health.

In greenhouses and conservatories, as well as in cold pits, too much care cannot be taken in avoiding spilling water when watering what is absolutely dry. In these frosty days it is desirable to confine the fresh air chiefly to the apex of the roof, and if there is much sun, to use little artificial heat until the afternoon, when the force of the sun is gone. In dull, muggy weather on the other hand, a brisk fire would be useful during the day, if little or none were required when the house was shut up at night. Were we close to a coal pit we would use more fuel in dull weather, and more air than we now do. Gardening differs from all mere mechanical undertakings in this, that constant watchfulness and observation are as essential to success as great abilities or great intelligence.

In such weather, see what was lately said of the position of Boronias, Leschenaultias, Pimeleas, Gompholobiums, Oxylobiums, &c., so that they may not stand in a draught of cold air, though fresh air shall be accessible. Florists' Pelargoniums will never do better than when standing on dry board shelves. Standing on earth, sand, ashes, gravel, or anything of that kind, moisture accumulates around them, and is apt to be condensed on them and form spot. Cinerarias in bloom, and Calceolarias coming forward, on the other hand, rejoice in a moist standing-ground. We have kept Cinerarias without an insect for the season, simply by standing them on damp moss.

Took the opportunity of the unsettled weather to put in a good many cuttings of Petunias, Verbenas, Lobelias, and Ageratums, and placed them in a bed prepared for them. The modes resorted to have often been described, and we dare hardly venture on details here, unless there were a number of beginners needing such information. We have at present lots of plants, &c., wanting hotbeds, but we cannot form the beds as yet. Next week we hope to describe a model amateur's pit for Cucumbers, Melons, plant-propagating, and general purposes.—R. F.

TRADE CATALOGUES RECEIVED.

Drummond Brothers, 52, George Street, Edinburgh.—*Catalogue of Vegetable, and Flower Seeds, &c.*

George Smith, Tollington Nursery, Hornsey Road, London, N.—*Descriptive Catalogue of Florist's Flowers.*

Archibald Henderson, Sion Nursery, Thornton Heath, Surrey, S.—*Priced Seed Catalogue.*

W. Hooper, St. John's Hill, Wandsworth, London, S.W.—*Descriptive Catalogue of Vegetable, Flower, and Agricultural Seeds.*

Francis Allum, Lady Bank, Tamworth.—*Descriptive Catalogue of Dahlias, Chrysanthemums, and Bedding Plants.*

COVENT GARDEN MARKET.—MARCH 3.

We have experienced a considerable falling off in our supplies this week, both home-grown and continental, in consequence of the altered state of the weather. Hot-house Grapes are much more scarce, Lady Downe's being over, and the samples of Barbarossa not equal to what they were. Apples and Pears consist of the varieties named last week. Of Asparagus there is a somewhat better supply.

FRUIT.

	s.	d.	s.	d.	s.	d.	s.	d.
Apples.....	1/2	sieve	2	6	to 4	0		
Apricots.....	doz.		0	0	0	0		
Cherries.....	lb.		0	0	0	0		
Chestnuts.....	bush.		8	0	16	0		
Currants, Red 1/2	sieve		0	0	0	0		
Black.....	do.		0	0	0	0		
Figs.....	doz.		0	0	0	0		
Filberts.....	lb.		0	0	0	0		
Cobs... 100	lbs.		0	0	16	0		
Gooseberries... 1/2	sieve		0	0	0	0		
Grapes, Hambro lb. }			10	0	18	0		
Muscats... lb. }								
Lemons.....	100		6	0	10	0		
Melons.....	each		3	0	to 5	0		
Mulberries.....	punnet		0	0	0	0		
Nectarines.....	doz.		0	0	0	0		
Oranges.....	100		4	0	10	0		
Pears.....	doz.		0	0	0	0		
Pears (kitchen)...	doz.		4	0	8	0		
dessert.....	doz.		4	0	8	0		
Pine Apples.....	lb.		8	0	12	0		
Plums.....	1/2	sieve	0	0	0	0		
Quinces.....	1/2	sieve	0	0	0	0		
Raspberries.....	lb.		0	0	0	0		
Strawberries.....	oz.		5	0	7	0		
Walnuts.....	bush		14	0	20	0		

VEGETABLES.

	s.	d.	s.	d.	s.	d.	s.	d.
Artichokes.....	each		0	6	to 0	0		
Asparagus.....	bundle		6	0	12	0		
Beans Broad... bushel			0	0	0	0		
Kidney.....	100		3	0	4	0		
Beet, Red.....	doz.		2	0	3	0		
Broccoli.....	bundle		1	0	2	0		
Brus. Sprouts... 1/2	sieve		2	0	3	0		
Cabbage.....	doz.		1	0	2	0		
Capsicums.....	100		0	0	0	0		
Carrots.....	bunch		0	4	0	8		
Cauliflower.....	doz.		2	0	6	0		
Celery.....	bundle		2	0	3	0		
Cucumbers.....	each		2	0	4	0		
pickling....	doz.		0	0	0	0		
Endive.....	score		1	0	2	0		
Fennel.....	bunch		0	3	0	0		
Garlic.....	lb.		2	0	0	0		
Herbs.....	bunch		0	3	0	0		
Horseradish... bundle			2	6	4	0		
Leeks.....	bunch		0	3	to 0	0		
Lettuce....	per doz.		2	0	0	0		
Mushrooms....	potile		1	6	2	6		
Musd. & Cress, punnet			0	2	0	0		
Onions... per bushel			3	0	5	0		
Parsley.....	sieve		2	0	3	0		
Parsnips.....	doz.		0	9	1	6		
Peas.....	quart		2	0	0	0		
Potatoes.....	bushel		2	6	4	0		
Kidney.....	do.		3	0	4	0		
Radishes... doz. hands			0	6	1	0		
Rhubarb.....	bundle		1	0	2	0		
Savoy.....	doz.		2	0	2	6		
Sea-Kale.....	basket		0	8	0	0		
Shallots.....	lb.		0	8	0	0		
Spinach.....	bushel		5	0	0	0		
Tomatoes..... 1/2	sieve		0	0	0	0		
Turrips.....	bunch		0	4	0	6		
Vegetable Marrows	dz.		0	0	0	0		

TO CORRESPONDENTS.

.. We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

NORTH AMERICAN PLANTS (H. N. E.).—We do not know any North American nurseryman to whom we could refer you.

TOBACCO FOR FUMIGATING (A Constant Subscriber).—The Nicotiana tabacum is the best species to grow; but any of the other species will be effective. Any seedsman can procure the seed if he has none in stock.

ESPERONE GRAPE (York).—Write to Mr. Fern, Rectory, Woodstock, Oxon, and ask for a graft. We shall be glad to hear from you on the subjects you mention.

FLOWER-POTS (S. Purglove).—Our correspondent wishes to know where he can obtain a quantity. Surely the makers would find it pay to advertise their wares.

LOBELIA SNOWFLAKE.—"Have any of the readers of this paper grown Lobelia Snowflake from seed this year? I purchased a packet, and sowed three-fourths of it three weeks since, and not a vestige of a plant yet to be seen! Two acquaintances who also purchased 2s. 6d. packets, which have been sown a month, have not obtained a plant. One of these acquaintances is a nurseryman, and the other gardener to a nobleman.—NEMO."

IMPERFECT GREENHOUSE (A Regular Subscriber).—As the roof leaks, and the rain comes in round the door, it cannot be properly constructed. It is quite wrong to expect that the roof cannot be made waterproof. Call in some competent builder of such structures, and if he says the greenhouse is not built in a workmanlike manner, you will have a full justification for not paying until it is done better. We cannot give an opinion upon the legal points. By beginning to putty the laps the builders admitted that the glazing was imperfect.

SEED DRILL (A Subscriber).—Very simple, ingenious, and useful. It should be made of iron, and the handle arched like that of a plough to render stooping unnecessary.

TAN AND DUNG AS SOURCES OF HEAT (M. S.)—We have brought tan home fresh from the yard, and at once transferred it to the pit it was intended to heat; but we like better to bring it home and throw it in a heap in an open shed, and, if the weather is cold, to cover it over with litter, or anything else, until it begins to heat freely—then it may be used at once; but if time and labour can be spared, it would be better for tender plants if it were turned over again, the sides to the middle and top to the middle, &c. Then, in a few days, if the weather is such as to promote fermentation, it may be taken and slightly and equally trodden or beaten in its place; and provided extra heat be guarded against, the heat will be so sweet as generally to suit anything that likes a high temperature. Dung, nicely worked and sweetened, will do as well as tan for filling the inside of a pit for Cucumbers and Melons. We have not touched tan for a number of years; but one of the best combinations for such purposes, and also Pines, and for bringing on tender plants, is making the main part of the bed of sweet fermenting dung, and then covering with a depth of from 12 inches with sweet tan. Even the fumes from fresh tan are seldom injurious; but they are not so nice even to the smell as those from tan thrown in a heap to sweeten. When linings are required to add to or keep up the heat, it matters not whether tan or dung be used; only tan will be the safer, unless the walls are secure and care is taken of ventilation, for otherwise dung in the crude state might send its gases among the plants and injure them.

ICE-PLANT (Idem)—We have seldom found the birds meddle with the Ice-plant. Very likely it was the moisture in its stems that enticed them. The plant will stand hardly any frost. To keep it fresh and green all the winter it should have a dryish atmosphere, and a temperature of from 45° to 50°. A few boxes may be grown in the usual way, and be moved under glass in October. For this purpose, if you sow in May it will be time enough. For summer use sow in March on a hotbed, and plant out in the beginning of June. It will require very little water in winter, but the soil must not be dust dry.

SHUTTERS FOR SHELTER (Idem)—“R. F.” has not used wooden shutters for a long time. They are best made of three-quarter-inch seasoned deal, according to size braced beneath with narrow cross-pieces 2 inches wide, and 1 inch deep. If a strip 1 inch deep goes all round the outside the cover is perfect, as that will rest on the sides and top of the sash and enclose a body of air. The mode of making straw mats was given not long ago, and also the mode of making straw covers. The latter may be so far repeated. Take three pieces of wood the length of the sash to be covered, each 3 inches wide and from three-quarters to 1 inch thick. Place these so as to be of the width of the sash, one in the middle and one on each side. Then have cross pieces of wood of that width, say from 3/4 to 4 feet in length, according to the width of the sash, and each 2 inches wide and half an inch thick. Nail one of these to the three long pieces top and bottom, others in the intermediate space at about a foot apart. This makes the frame for the cover, and is intended to go next the glass. Reverse it after thus nailing it, and fill it neatly with straw. Fasten down one of these cross pieces at each end, and secure the straw by tarred string just above all the intermediary cross pieces. Five tacks for each string will enable this to be done expeditiously—one at each side piece, one in the middle, and one in the interval between the middle and side long piece. Without being made thus secure the straw would drop out in dry weather. Any straw will do, but wheat straw, drawn before it is threshed and the heads cut off, lasts by far the longest, and a cover thus made will be as serviceable in severe weather as three or four ordinary mats. Good deal would be the best to use; but “R. F.” never had it, but worked up any old stuff that came in the way, and he has even cut up elm on purpose, that cost little more than the sawing, as otherwise it would have done only for firewood. Asphalt covers are very good when supported on frames.

MICE EATING CABBAGE PLANTS (Idem)—They and rats have cleared us out of our strong Cauliflower plants for the first crop in spring and summer. For rats, when everything else failed to entice them, we have found a number done for by mixing barley meal and arsenic with a little water, putting it where no domestic animal could reach it. We mixed it up with a stick, and put down the lumps with a stick. If the hand touches if the rat is too cunning to taste it, however hungry he may be. If water or milk is placed near the bait the sufferings of the rat will be short.

PIT FOR A VINERY (H. Faughan)—Further than that you contemplate having an unheated orchard-house, 50 feet long, against a south wall, you give us no data whatever to guide us in giving you advice as to the making of a pit in such a house. If you tell us what is the height of the back wall, the height of the front of the house, and the width of the house, then we shall be able to advise you as to a pit, and whether a pit in ordinary circumstances would be desirable. For a mere unheated house in which you propose growing Peaches, Nectarines, Vines, and other fruits, we do not see what good you could do with fermenting dung in your pit. The simplest arrangement of such a house would be 12 feet in height at back, from 2 1/2 to 3 feet in front, and 12 feet in width, planting Peaches and Nectarines against the back wall, Vines up the roof at 5 or 6 feet apart, and Peaches on a low trellis in front, and a walk along the back. You would have more variety by planting out Vines, and Peaches and Nectarines, against the back wall, and either planting out the trees in front as dwarf bushes or growing them in pots. If your house were 14 feet high at back, from 3 1/2 to 6 feet in height in front, and from 12 to 14 feet in width, then you might have a walk all round, and a low pit in the middle, furnished with good soil, either for planting out or growing trees in pots. If you give us more data we shall be glad to oblige you.

BEDDING-OUT (A Lady Subscriber)—We think that your arrangement of beds of shrubs, and bedding plants will look very well. If we suggested a change, it would be to put a band of dwarf scarlet Geraniums, or the Centaurea candidissima round the centre bed of Aucuba; and then, instead of piecing the four beds 13, 14, 15, 16, we would ribbon or band them thus—13, 16, Heliotrope, Aurea floribunda Caleolaria, and then Bijon Geranium; and 14, 15, Crystal Palace Scarlet Geranium for centre, Aurea floribunda round it, and then Lobelia Paxtoniana. Your mixed Verbenas, or ribbon and line them in contrast with 15, 12, and 16.

CONSUMING SMOKE (J. Mackenzie)—We know of no cheap system of consuming smoke. If the coal is only put on at the front of the fire, close to the furnace-door, the black or carbonaceous particles are chiefly got rid of as the smoke passes over the brightly burning portion of the fire bed.

HANUM SEED.—Gentlemen wishing to try to cultivate this Palestine plant may have a few seeds, by enclosing a stamped envelope, with their address, to W. Wanklyn, Esq., Bury, Lancashire.

GROTHERMAL BED (Suburban)—In our No. 143, New Series, you will find a description of the geothermal bed at Welton Place, near Daventry. You can have the Number if you enclose four postage stamps with your direction.

DIELYTRA SPECTABILIS FORCING (Country Curate)—The canes of the fallers are insufficiently hot, and the plants not having been previously established in pots and prepared for forcing. Keep the plants in the greenhouse until after they have flowered, giving them a light and airy situation; and when frosts are over remove them to a warm open situation out of doors; plunge the pots until July, and then remove them to a south aspect, and give no water except to prevent the foliage flagging. The plants will go to rest in good time, and from the time of the foliage decaying they must be allowed at least six weeks' rest. To make them flower at Christmas, which is very early, they should be plunged in a hotbed of 60° or 65° in October, and be gradually withdrawn from it by the end of the month. This will make the roots active. The plants should then be placed in a house having a temperature of 50° from fire heat, and in a fortnight increase the heat to 55° at night, allowing a rise of 5° on dull days, 10° on those which are cloudy with clear intervals, and from 15° to 20° on clear days. In these temperatures, with a moist atmosphere, gentle bedewing overhead, sufficient but not excessive waterfalls at the root, plenty of light, and abundance of air on favourable opportunities, your plants will flower by or soon after Christmas, but the bloom will not be nearly so good as on plants started at a later period. If the plants are in small pots and require potting, do it immediately after flowering, using a compost of turfy loam two-thirds, leaf mould one-third, and a free admixture of sand. Provide good drainage.

FORCING RICHARD (Idem)—We are at a loss to account for your failure in this, for you seem to have gone the right way to work. We find that by taking the plants up and placing the roots in soil, usually in a Mushroom-house, we can have very fine stalks in a month or six weeks. The temperature is from 55° to 60°, and uniform, of course, from the position. We have also potted the roots, covered them with an inverted pot, and placed the pots in a temperature of from 55° to 60° at night, and we have thus had stalks for use in six weeks. We think your failure due to an insufficient amount of heat.

VINE-GROWING FOR WINE-MAKING (Yitis)—The price at which foreign wine is now to be obtained in this country renders the cultivation of Vines under glass for the purpose of making wine unnecessary and unprofitable. The varieties are too numerous for us to specify them, unless you want to know the sorts that produce some particular kind of wine.

ORCHIDS FOR A CUCUMBER-HOUSE (J. L. Stackhouse)—The following three are recommended for your Cucumber-house, which you say is at work all the year—*Arides odoratum majus*, *Calanthe vestita*, *Phallopis grandiflora*. *Dendrobium nobile* may also be grown in the Cucumber-house, and removed to the conservatory when in flower. The house (70° to 75° without sun, and higher with), is too hot for *Odontoglossums*.

VARIEGATED DIANTHUS (W. D.)—We have never seen this plant in a variegated form before, and should much doubt whether, from the nature and habit of the *Dianthus*, the variegation would remain permanent. To judge of its merits the plant must be seen.

FUNGUS ABOUT VINE ROOTS (A Constant Reader)—The white mould is the mycelium of some minute fungus. The other specimen is not a fungus, but the fibrous root of some plant. They are not injurious to the Vine.

VINE CULTURE (B. & W.)—As you have “everything to learn,” we recommend you to buy “The Vine Manual,” which you can have free by post from our office if you enclose thirty-two postage stamps with your address. After reading the directions it contains for growing the Vine in a greenhouse, if you need any question answered we shall reply readily.

ROCK PLANTS FOR NORTH ASPECT (M. E. H.)—Alpines rejoice in sunshine and dislike shaded, damp, close places. Your situation would answer admirably for Ferns. You may also plant *Aubretia deltoidea*, and its variety *grandiflora*; *Arabis albidia* and *alpina*, *Cerastium tomentosum*, *Saxifragas juniperina*, *granulata*, *cotyledon*, *arctioides*, *nizoon*, *azoides*, *cymbalaria*, *hypnoides*, *umbrosa*, *palmaria*, and *lilhei*; *Statice alpina* and *sinuata*, *Silene alpestris*, *Tridentaria europaea*, *Vinca minor*, and its variety *plena*; *Vinca major*, and its variety *elegantissima*, and *Vinca herbacea*, *Sedum acre*, *kantschaticum*, and *spurium*; *Pulmonaria angustifolia*, *officinalis*, and *grandiflora*, for the base only. *Pinguicula vulgaris*, *Lotus corniculatus flore pleno*, *Linaria cymbalaria* and its variegated variety, *L. origanifolia*, *Hepaticas*, and the varieties of *Primula acaulis*, for the lower parts. These would be likely to do moderately well.

CAMELLIA PLANTING OUT-DOORS (Idem)—A white Camellia would not, we think, do well out of doors, either as a standard or trained against a north wall in a cold valley in Sussex.

PLANTS FOR TOWN GARDEN (M. A. E.)—The best of all to flower in May and June are herbaceous *Panicles* and *Paeonia moutan*, *Dianthus cruentus*, *deltoides*, and *francus*; *Diclytra spectabilis*, and its white variety; *Pulmonaria officinalis*, *Trollius europaeus*, *Tulips* in great variety; *Convallaria majalis*, and the gold-striped, pink, and double varieties; *Polygonatum vulgare*, *Cerastium tomentosum*, *Campanula aggregata*, *carpatia*, *marialis*, *pusilla*, and its white variety; *Bellis perennis aeneobifolia*, *Dodecatheon elegans* and *media*, *Doronicum caucasicum*, *Iberis saxatilis* and *I. sempervirens*, *Lychnis viscaria*, *Narcissus poeticus plenus*, *Polythrums* in variety; *Saxifragas azoides*, *umbrosa*, and *Andrewsii*; *Silene Schafra*, *S. alpestris*, *Polemonium caeruleum*, and the variegated variety; *Phlox frondosa*, *Nelsoni*, and *varna*; *Orobis veranus*, *Antirrhium* varieties, *Columbine*, and *Ajuga alpina*.

HERNACKOFF'S PLANTS (Idem)—You will find just such a list as you request us to give at page 72 of the Number for January 23rd.

SELECT POMPOON DAHLIAS (Nemo)—The following are very good free-flowering varieties—*Crimson Beauty*, *Multi-flora*, *Rosette*, *Edouard Rose*, *Goldfuch*, *Little Wonder*, *Little Jubus*, *Little Darling*, *Little Arthur*, *Dr. Webb*, *Gold Pheasant*, *Little Mistress*.

FLOWER SEEDS (A. B. Wyeombe)—It is impossible to answer so wide a question. All flowers probably might be improved by judicious crossing. We cannot ask for entanglements.

NAMES OF FRUITS (*Lemon-Toothing*).—*Verulam Pear*. (*E. H.*).—*Uvedale's St. Germain Pear*,
 NAMES OF PLANTS (*C. S. G.*).—*Solanum marginatum*, or *White-edged Nightshade*. It is a native of Palestine. (*A. A.*).—2, *Asplenium bulbiferum*; 3, *Nephrolepis*; 4, *Asplenium dactyloides*; 5, *Prunus japonica*

flora pleno; 6, *Deutzia gracilis*; 7, *Asplenium marinum*; 10, *Pteris cretica albo-lineata*; 12, *Niphobolus lingua*. (*A. W. Willis*).—*Scilla peruviana*. (*Calceola*).—You must send better specimens if you wish to have your Ferns correctly named.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 3rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	3 ft. dp.			
Sun... 25	29.584	29.318	47	30	42	41½	S.W.	.08	Rain; showery; overcast; cloudy.
Mon... 26	29.395	29.167	49	30	42½	42	S.	.43	Uniformly overcast; heavy clouds; rain at night.
Tues. . 27	29.411	29.382	38	27	42½	42	N.E.	.04	Hazy, overcast, and cold; fine; slight frost.
Wed. . 28	29.377	29.152	37	17	41	41½	N.E.	.00	Densely clouded; snowing; sharp frost at night.
Thurs. 1	29.491	29.462	40	22	41	40	E.	.00	Frosty and foggy; cold uniform haze; densely overcast; frosty.
Fri. . . 2	29.666	29.593	41	19	41	40½	N.E.	.00	Frosty; clear and fine; frosty at night.
Sat. . . 3	29.660	29.539	42	23	40½	40	N.	.00	Clear and frosty; overcast; cloudy; frosty.
Mean..	29.512	29.382	42.00	24.00	41.50	41.07	....	0.55	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

A DAY AT LINTON PARK, KENT.

THE SEAT OF THE VISCOUNT HOLMESDALE, M.P.

For some years I have had always a stereotyped reply to the question: "Have you been in many of the counties of England?" It was this—"I have been in all of them except Kent and Cornwall." Poultry has now led me into Kent, and, therefore, only Cornwall remains as yet utterly unseen and unknown. Ever since I saw the prize birds of the Viscountess Holmesdale at the Bath and West of England Show, held at Clifton, in 1864, I had felt a great wish to see her ladyship's stock in its entirety. That wish has recently been gratified; for a letter having reached me in which Lady Holmesdale informed me that "it would give her great pleasure to show me her poultry," and I being desired to take an early opportunity of going into Kent, as the family were about to remove to London for the season, I proceeded to Linton Park forthwith.

It has not been a very good season for birds, owing to the great fall of rain; in many poultry yards and walks the fowls almost needed stilts in addition to legs to keep them out of the water. (N.B.—Were I a fowl I would be a Malay—*i.e.*, if it were always such weather as we have had this winter.)

I start for London the day the Queen opens Parliament, for of course it will be fine (it was). As I passed through Berkshire I pitied the poor folk there, and registered this verdict concerning their county—"Found drowned." In London I met with a well-known and well-knowing poultry fancier and judge, who told me, after I had informed him whither I was going, "You will see poultry to perfection at Linton Park." With expectations still higher raised I get up next morning very early to proceed into Kent, as it is Lady Holmesdale's wish that I should see her fowls in the forenoon.

The first train, then, finds me at Charing Cross Station, and I look upon that very gorgeous Station and feel thankful that I own no shares in that line. Ah! what have we here? A restored Queen Eleanor's Cross in a station-yard. Poor King Edward was unlucky in his site; at any rate he did not foresee what an unquiet place it would prove in after ages. But no, it is not a restored cross, but a bran-new cross in front of a spick-and-span gaudy station. Bad taste surely, besides a waste of money. I feel no reverence as I look upon this entirely new cross, erected on, perhaps, the spot where Queen Eleanor's body rested for the last time before interment, just 575 years ago. Had it been a restoration I should have felt reverential; but all new, not placed, as surely it might have been, in some quiet nook, but where every vulgar 'bus and cab rattles by and draws up close to it, just on the spot where, in front of an inn the horse-block was commonly to be found—"my gorge rises at it." And yet how one respects King Edward, that good husband, who, not in the first heat of a bridegroom's passion, showed such love to his spouse; but he, an old husband, went to such cost and care for his old wife, the mother of fifteen children. 'Tis the newness of the cross and its position jars upon the sense. How different it is when the new and old are brought side by side, as in the case of the railway that runs close by Furness Abbey; there, there is food for much reflection. There, on one side, is the crumbling ruin, the evidence and token of

the highest civilisation of its day; and the flashing railway train type of the civilisation of the present day. There in the Abbey were gathered together the few books and few readers of a whole district. There were the men who could plan the rich tracery, erect the pillars, and bid the arch span the space between. Surely the dark ages were blind in many respects; but they certainly were not stone blind. And in the Abbey, new so old, were the men who cultivated flowers and herbs with thought and care, and, mayhap, were proud and careful of their breeds of fowls when others were indifferent. And there close by is the nineteenth century railway station and electric telegraph. But I am growing desultory.

Off for Marden, for two hours or more of travelling. I like, in going from London, to watch how gradually, very gradually, on this Kentish side, town melts into the country. First after actual streets come, to use the happy phrase of Cowper—

"The villas with which London stands begirt,
 Like a swarth Indian with his belt of beads."

I love to think of the retired citizen, or the man of business, who scarcely more than sleeps in the country air, enjoying when able his rural home and his garden, perhaps his live pets. Then after villas come the patches of building ground and the one-half-finished house, the very last link to the town, till a few miles further and it is actual country—real farm-houses, unmistakable labourer's cottages, and yes, surely, that is an old country mansion. How bright green is the grass, and why, the stations have creepers growing up their iron supports; all looks rural; not the blackened look of a Lancashire, but the pure look of a thoroughly agricultural county. But surely those must be hop poles piled like a number of giant's pikes in tent-like patches all over the fields on both sides of me. Oh! had I been a teetotaller, how my heart would have ached. By the way, as teetotallers are the greatest consumers of animal food in the country, for he that drinks nothing but water eats much more than other men, ought not the Chancellor of the Exchequer in these cattle plague days to tax every teetotaller extra? I think so, and wonder the thought of such a tax has not come into the fertile brain of Mr. Gladstone.

Verily Kent is a beautiful county, how emerald green its grass; how well cultivated and garden-like its fields; and that ridge of pleasantly-swelling hills to the left of me, running on and on, how agreeable to the eye. I do not wonder that "the men of Kent" are proud of their county. It is such an old-inhabited part of England. It was for ages the key to the kingdom: it had the post of honour because it had the post of danger. Shakespeare says of it—

"Kent, in the 'Commentaries' Cæsar writ,
 Is term'd the evil'st place in all this isle:
 Sweet is the country, because full of riches;
 The people liberal, valiant, active, wealthy."

Then, too, the antiquity of its families is noticed by Lord Macaulay, who says of the signal fire telling that the Spanish Armada had been sighted in the Channel—

"And eastward straight, o'er wild Blackheath, the warlike errand went,
 And roused in many an ancient hall, the gallant squires of Kent."

How, too, a common danger must have bound together the people of Kent. They could see, while other folks of other counties could only hear of, the old enemy's country, France. Should there have been an invasion, in days preceding steam, the French would most likely have landed in Kent. Hence,

that aviary expenses are included (I cannot at present separate them), and though I have sold aviary birds well, their profits are uncertain. In your first answer to my questions, you ask what extra or accidental food the fowls obtained. They mostly have free range of the shrubberies and grass fields, and some have access to the stable, pig, and cow-yards. There are no grain stacks. They share with the pigs and dogs what scraps there may be from the house. The only extra not entered is a little hempseed, which I gave as an occasional luxury.—C. E.

GAME BANTAMS.

THE "WILTSHIRE RECTOR" tells us that his plan in life is never to enter into any controversy, but openly to state his opinion honestly formed on any subject that lies in his way. This is all very well in private matters, although there it will not bear examination; but when an opinion is given in public, and affects the interests of others, a man is clearly bound to defend his opinion, or to hold his tongue. It is not my intention to involve the Rector in a controversy. It so happens that I do not agree with him, and so far as he is concerned I am content to use his own words, "Doctors differ, that is all."

It is another matter, however, with Mr. J. Crossland's letter, quoted by the "WILTSHIRE RECTOR," because it comes from a practical and experienced man. He says, "From a single yard in Yorkshire there have been sold upwards of £180 worth of Game Bantams in twelve months. The breeder has also taken himself, I see from this Journal, from December 1864 to December 1865, four silver cups, cup and second at Darlington 1864, cup at Thorne for two years, 1864 and 1865, cup and second at Darlington 1865, cup at Birmingham, given by subscribers, in 1865. . . . I have only crossed once in ten years, and I gave £5 5s. for the bird—first at Birmingham, first at Plymouth, and first at Liverpool." Surely Mr. Crossland knew without the help of THE JOURNAL OF HORTICULTURE how many prizes the breeder he alluded to had taken.

At an average of £7 a pen—no bad price for birds so easily bred—it would require about twenty-six pens, or seventy-eight birds, to make up the £180. Game Bantams must be easy indeed to breed, their powers of production must indeed be marvellous, if, between January, 1864, and this time seventy-eight birds could be bred from one stock which would realise such prices! Will Mr. Crossland venture to say that all these birds were in a *bono fide* manner bred by the breeder and exhibitor in question? Was nothing added or purchased from other stocks? Was he never at a loss for birds to make up a pen, and glad to fall back upon the assistance of others? If not, then he is indeed a prince of breeders, and fortunate must Mr. Crossland be in his confidence. If it be so easy to breed birds of this kind, how does it happen that the greatest part of this breeder's birds were "sold to our well-known exhibitors in the Game Bantam classes?" Surely they could not have wanted to buy.—A CHESHIRE PILE.

BEING a constant reader of your Journal, I have noticed all the correspondence which has resulted from the "WILTSHIRE RECTOR'S" "First Impressions of Bingley Hall." If you will allow me a little space I will endeavour to give you a specimen of my experience in the breeding of Game Bantams, which has extended over a period of five years. At the commencement I claimed three pens at different shows, and put them out on separate walks, and bred from them, fully expecting they would produce some first-class birds. However, I was doomed to disappointment, not one first-class bird came from the whole lot. I tried another year, with the same result.

A short time afterwards I was present at a show, and admired very much the pen which had taken the first prize, and on referring to the catalogue to ascertain if the price was one I could afford to give, I found I knew the exhibitor well. The remarks of the fanciers present were, that he must have some good birds, from the fact of his name appearing so often in the prize-lists. However, as I fully intended buying the pen if possible, I took an early opportunity of calling upon him, and requested to see his Bantams, and he at once complied, remarking, however, that his best were from home. The day being fine we walked down to his runs, and I there saw birds which threw my own at home completely in the shade, and I at once determined to clear my own stock off, which I did, and, as in the drapers' advertisements, at an immense sacrifice. After viewing the whole of his stock, I concluded a bargain with him, and bought a cockerel and four pullets on the express condition that I sold him all the chickens I had to spare

from them at a guinea each; so you may judge that the price I gave him was not a very small one. However, he gave me his word that they would breed as true to feather as the partridge in the stubble.

When they commenced laying I collected all the eggs, and sat four Game hens with seventeen each, from which I obtained forty-nine chickens, and reared forty-two—thirty-one pullets and eleven cockerels. On their being ready I advised the person of whom I bought the fowls to come over and inspect them, and not wanting many myself, and also having others coming on, I agreed to sell him, as per agreement, thirty-seven of the birds, and had the satisfaction of receiving £38. On meeting with him some time afterwards, he informed me that out of the lot he had made in sale and prize-money the handsome sum of £80! which, of itself, I submit, is a sufficient guarantee of their worth.

If breeders would only be careful in selecting their stock, and not purchase from so many yards, but breed from some well-known strain, mark the eggs from each hen, and send their chickens to separate walks, they would at once find which were the best hens to breed cockerels and pullets from. I am of opinion that a great many breeders do not take notice of that. I should be glad to see a few remarks from some of our oldest breeders and exhibitors on this subject; but I hold the opinion of the "WILTSHIRE RECTOR," that Game Bantams are easy to breed good if proper care and judgment be exercised.—A WEST YORKSHIREMAN.

ARTIFICIAL INCUBATION IN CHINA.

M. DAERY, French Consul at Han Keoo, in China, has just published an interesting paper in the "Bulletin de la Société d'Acclimatation" on the process employed by the Chinese in hatching eggs artificially. The places where this trade is practised are called Pao-jang; each consists of a mud hut, 3 yards in height, exclusive of the roof, made of tiles; the inside of the hut measures 8 by 4, and its entrance is situated due west; the north-east wind is provided against by a layer of straw applied to the wall; the door is made of planks, and measures 1 yard by 2. Light is admitted through four apertures in the roof. Within, there are eighteen brick stoves, 2½ feet high, along the wall, and close to each other. Each of these stoves supports a large earthenware dish, sunk into the brickwork and just above the fireplace; and inside this dish there is a basket of nearly the same shape, resting on a layer of ashes about 2½ inches deep. It is in this basket the eggs are to be hatched; 1200 in number are arranged in three layers, and the whole covered with a cane lid half an inch thick. Nine of the stoves are lighted at a time, but only eight have eggs, the ninth being intended to regulate the temperature of the room, which must be maintained the same throughout. The combustible employed is charcoal, and the temperature in the basket never exceeds 38° centigrade (100.4° Fahr.) The eggs are shifted five times during the twenty-four hours—viz., four times during the day and once during the night, the upper layer going to the bottom, and the bottom becoming the middle one.

On the fifth day a small hole is pierced through the door, and by the pencil of light penetrating through it each egg is examined, in order to ascertain which of them are in course of incubation. On the twelfth day the eggs are taken out of the baskets and arranged on shelves above the stoves, provided with layers of straw, 2 inches thick, and mats over them. Upon these the eggs are laid, with a cotton quilt nearly 3 inches thick between each layer, and another quilt just above, the whole being well secured by means of a thick straw rope to prevent the air from getting to the eggs, which are regularly shifted as before, five times a-day. As soon as the eggs are taken out from the baskets, the fires are put out in the stoves which have been used; the nine other stoves are lighted, and the process re-commences with a new batch of eggs. On the 21st the former lot is hatched, yielding about 700 chicks for every 1000 eggs. Every egg costs 6 sapeks, and each chicken obtained is sold for 14; the sapek being the 150th part of a franc.

HIVES.

In your Number of the 20th ult. Mr. C. F. George describes a plan for making the square straw hives, and he says that my "native hives" seem "exactly like" his. Now, as my hives can be purchased (see advertisement in your Number of the 20th ult.), I ought, perhaps, not to notice Mr. George's communication, but, as our object is doubtless the same, the en-

couraging the bar and frame system by rendering the hives obtainable at a lower price, I will describe the mode of manufacture according to my plan.

The accompanying sketch is that of the frame I use; it is made of half-inch deal, the sides 3 inches deep, the cross pieces only 2 inches deep, and set in the sides 2 inches from their ends. This frame is 14 inches square from external corners to external corners. I have other frames made on the same plan for nucleus, hexagon, or for any number of bars as required.

The sewing the straw (and my man never uses a ring), is conducted from end to end, not along the side pieces, and when the end of the side is arrived at, the frame is lifted out, turned one-quarter round, and replaced, for the sewing to be carried along the next side, the cross pieces being set back for that purpose. This moving of the frame keeps the inside dimensions perfect; the side pieces, with a little beating of the straw, give a flattened surface to the inside. When finished the hive retains its shape admirably, is perfectly uniform in diameter, and I have never noticed any bulging or conical form whatever with this frame. The maker can turn it in his lap; there are no inconveniencing wires or laths; and any degree of tightness can be exercised that is desired, a point upon which in reality the goodness of the hive depends. My man now uses nothing but cane. I would recommend Mr. C. F. George to purchase one, from which, if he can obtain any hint, I am sure he is heartily welcome.—J. H. BLOUNT, M.D., *Bagshot, Surrey.*

LIGURIAN BEES.

WHEN taking steps for raising queens from the brood of my pure Italian mother, upon the 20th of May, I introduced her with a considerable number of her subjects into a frame hive furnished with several frames of empty brood comb, selecting for the centre three combs consisting in a great measure of drone cells, as I wished, if possible, to rear and preserve a number of drones for the fertilisation of queens late in the season. Towards the end of June these combs were well filled with drone brood, and as the honey season began to break up early in July, I was apprehensive lest the workers should begin to cast out the immature drones. By Mr. Woodbury's advice I removed the queen, placing her again at the head of a new colony.

The bees in the parent hive at once constructed royal cells; but these having been all excised before they came to maturity, the bees were unable to take any further steps for supplying themselves with a new monarch. They continued, nevertheless, to work pretty nearly as well as usual, but were rather more irritable than their neighbours; still, had I not been acquainted with their internal history, I should not have supposed that they were both destitute of queens and young brood.

On the 4th of August I supplied the hive with a frame of bees and brood from the young colony founded upon the 6th of July, and governed by the pure Italian queen, which was now a populous and flourishing family. Many royal cells were at once founded upon this comb, but, owing to the unsettled wet weather then prevalent, I did not inspect the proceedings of the bees very closely.

On the 15th of August (the eleventh day from the time when the bees were supplied with the brood), I found one cell open, from which a queen had evidently emerged. "The shades of night were falling fast," and I was unable to do anything further that evening; but as no time was to be lost, early next morning the hive was again inspected, and I found five royal cells were already torn open, the work, as I then supposed, of the senior princess. I soon detected a queen with her head and nearly the whole of her body in one of the worker cells; having carefully excised the piece of comb, I gently broke open the cell into which the queen had retired, and having ascertained that she was very beautifully marked and perfect in all respects, though rather below the average size, I at once removed the comb containing the royal cells (seven of which were still intact), and returned the queen to her native abode.

On Saturday, August 19th, I found this queen lying in front of the hive almost dead, and feared that the hive was then queenless. In the afternoon, to my surprise, I found another queen, of rather a dark colour, lying in front of the hive, and still able to move a little, proving that she too had only recently received the mortal wound. On opening the hive I soon detected a third queen perambulating the combs. It is evident that in this instance at least three queens at liberty co-existed in one hive for three days. The victorious queen was duly fertilised, but did not begin to lay before the middle of September.

I have upon several occasions introduced strange queens (both virgins and matrons), into my uncomb hive when it contained a queen regnant, and in every instance the stranger was gradually surrounded and imprisoned by the workers; but the legitimate queen has never been in any way molested or interfered with. Supernumerary queens are, I know from actual observation, frequently disposed of by the workers; but the queens are in all probability often allowed to engage in single combat for the supremacy, and this was doubtless the way in which the matter was settled in the hive alluded to, as neither of the dead queens presented the usual disfigurement observable in those which have perished from encasement.—J. E. B.

OUR LETTER BOX.

JUDGES AND JUDGING IN SCOTLAND (*Scotchman*).—The remarks were general, and do not require a defence of the Paisley Show. Such general remarks direct attention to the subject, and if they are not well-grounded are best allowed to pass unnoticed.

COCHIN CROSSED WITH DORKING (S.).—Now that the hen has sat and brought off a brood, the taint will most probably cease. It prevails, as in the Turkey, for many more than one egg.

VICTIOUS GANDER (W. R.).—Your parting with him will not prevent the Goose continuing to sit. Perhaps you are not aware that a gander very usually shows a violent temper whilst the Goose is incubating. It is his mode of showing his anxiety to defend her during her own defenceless state. The violent temper ceases when the goslings attain a large growth.

WIRE FENCING (*Carolina Duck*).—Any wirework manufacturer advertising in our columns will give you the information you need.

TUMOURS ON TURKEY'S HEAD (*A. F. S.*).—Open the tumour with a pair of very sharp scissors. Remove the matter, and wash the cavity thoroughly with warm water. Then draw the edges of the skin together very loosely with two or three stitches by means of a needle and thread. No ointment is needed. Perform the operation in mild weather. Give a tablespoonful of castor oil, and on no account give stimulants, such as "Cayenne pepper and chopped onions." The food, rather, should be cooling—mashed potatoes and a little barleymeal, and plenty of green food. If you send to this office five postage stamps with your address, and order "Bee-keeping for the Many," you will have it sent to you free by post. Peafowl lay in spring; usually beneath some bush near the tree where they perch. The "Poultry-keeper's Manual," with colored plates, price 7s. 6d., gives full directions for keeping all kinds of poultry, treatment of diseases, &c. You can have it from our office.

SATINETTE PIGEONS.—Mr. Noye informs us that he did not exhibit Satinettes at the Birmingham Columbarian Society's Show. Mr. Noye's name appears, however, as having done so in the printed catalogue.

FOOD FOR KINGED BENGAL PARROQUET (M. S.).—To keep the bird in health give it canary and hemp seed, about one-third of the latter to two-thirds of the former; bread soaked with water, squeezed dry, and given cold, fresh every morning; occasionally one or two chilies as a stimulant; and for a change give it a little sealed rice sparingly, also a small quantity of water to drink in a small tin to hold about two tablespoonfuls—not sufficient to wash in. The bird is very fond of fruit in season, such as apples, pears, &c. By no means give it meat or fat to eat, or bones to pick.

HONEY HARVEST FOR 1866.—Mr. S. Bevan Fox informs us that the amount of his last year's honey harvest in the concluding article on "Apian Notes," at page 175, was understated. It should have been 330 lbs., instead of 230 lbs., as there given.

OPENING A WOODBURY-HIVE—SPRING FEEDING (A. R.).—I have already examined all my stocks and seen either the queen or young brood in each, but can scarcely be said to have commenced spring feeding, although I have everything ready for it as soon as the weather becomes favourable, Birmingham being so much colder than Exeter. I think you had better defer all these operations a few weeks longer.—A DEVONSHIRE BEE-KEEPER.

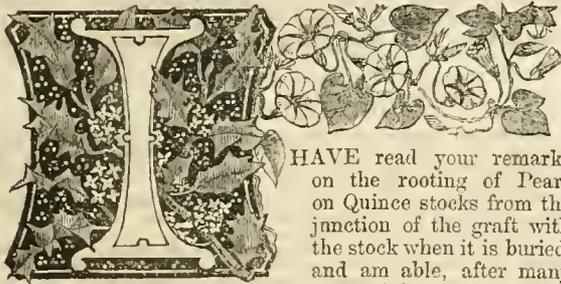
BEE DYSENTERY (R. S.—D. C. A.).—There can be little doubt that when dysentery exists among bees the insects themselves are in a morbid condition, which may arise from various causes. Dysenteric excrement is profuse in quantity, of a dark colour, and emits a very offensive smell. Dr. Donhoff, a distinguished German apiarist, gives the following description of his analysis of the excreta of healthy bees, in which he found three ingredients. "1. *Remains of Pollen*.—I boiled the excrement in caustic potash lye slightly diluted. After filtering, I washed the residuum in hot dilute muriatic acid. What was left after again filtering could, from its insolubility, be only the remains of pollen. It appeared under the microscope like an indistinctly granular mass. 2. *Uric Acid*.—I immersed the excrement in concentrated sulphuric acid, in which uric acid remains undecomposed. After carefully decanting the liquid from the resulting carbonaceous mass, I added water, and then washed the precipitated matter in water. I now added one drop of liquor ammoniaci and one drop of muriatic acid. On heating, the mass assumed a purplish hue, the characteristic reaction of uric acid. 3. *Hippuric Acid*.—I boiled some excrement in caustic potash lye. After filtering, I added dilute muriatic acid, and obtained a precipitate which proved to be composed of uric and hippuric acid. According to an approximate estimate the excreta of bees consist of about one-third uric and hippuric acid, and the residue of indigestible pollen."

WEEKLY CALENDAR.

Day of Month		Day of Week	Average Temperature near London.			Rain in last 24 hours.		Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
MARCH 19—19, 1866.			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
13	Tu	Bossea cordifolia.	50.9	34.4	42.6	14	21	6	68	45	17	4	4	2	26	9	40	72
14	W	Camellias.	51.4	35.3	43.3	18	19	6	0	6	51	4	17	5	27	9	23	73
15	Th	Calceolarias.	51.1	34.3	42.7	19	17	6	2	6	22	5	32	4	28	9	6	74
16	F	Carnations.	51.5	34.0	43.0	13	14	6	4	6	51	5	51	5	28	8	49	75
17	S	Callistemon phoeniceum.	50.0	32.9	41.4	12	12	6	5	6	19	6	11	7	1	8	32	76
18	SUN	5 SUNDAY IN LENT. PRS. LOUISA	50.5	33.3	41.9	11	10	6	7	6	51	6	30	8	2	8	14	77
19	M	Choyzeima varium. (BORN, 1846.	51.7	33.5	42.6	13	8	6	9	6	24	7	50	9	3	7	56	78

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 51.0°; and its night temperature 34.0°. The greatest heat was 67°, on the 15th, 1838; and the lowest cold 17°, on the 17th, 1846. The greatest fall of rain was 0.70 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

THE ROOTING OF PEARS ON QUINCE STOCKS —PARADISE STOCKS.



HAVE read your remarks on the rooting of Pears on Quince stocks from the junction of the graft with the stock when it is buried, and am able, after many years of observation of such

subjects, to assert that you are perfectly correct.

It is now about twenty-four years since I formed a plantation of two thousand Louise Bonne Pears budded on the Quince. They grew and bore well; but as some of them were planted before the ground was trenched, when that was done the earth was raised above the junction of the buds with their stocks. This did not seem to affect the growth of the trees for some few seasons; but after a time, from five to seven years, I observed a marked difference in some of the trees. They made shoots of great vigour, and ceased to bear such fine fruit as the others. The few fruit produced were green, small, deformed, and much spotted with large black spots. This induced me to have the earth removed from the bases of the trees, and I then discovered that the vigorous-growing trees had made large roots from the graft, and that the Quince roots were rotten and perfectly effete. The following season I observed that these vigorous-growing trees were more or less affected with canker, and the shoots dead or dying from their tips to half way down their length. My curiosity was excited as to why this should take place, and I had some of these Pear roots followed with the spade. They were found to have run through the staple—a sandy loam 20 inches deep, and to have penetrated the clay to a depth of upwards of 6 feet; they had numerous ramifications, but were destitute of fibres, seeming as if they had hard work to do—i. e., a long way to go to pick up indifferent food. On examining trees of the same kind, standing in the same row, with the junction of the graft with the stock just clear of the surface of the soil, the Quince roots were found close to the surface and very fibrous. I should mention that they were bearing fine crops of very handsome clear-skinned fruit, were in a very healthy state, and so different from the Pear-rooted trees as to appear a different variety; yet they were all Louise Bonne Pears. I immediately had the earth carefully removed from the bases of all the trees, taking up and replanting some that were buried too deeply, and have had no trouble since.

I must confess that this experience of the ill effects of the deep rooting of fruit trees made me a more strenuous root-pruner and remover than ever, and I have never forgotten the lesson.

In closely observing for some years the Pear trees I

have alluded to, I was much struck with a curious fact. In spite of all my care, my labourers in digging the ground would, through carelessness, cover the junction of the grafts with earth. In looking over the trees in summer, I was soon made aware of this by seeing some of the trees making shoots of great vigour, and on examination the Pear roots were found thrusting themselves into the earth with great determination. The curious fact was, I could never find any fringe of fibres on the graft, or any small roots. There were in all cases but one or two (the former the more frequent), large bare roots, the commencement of which I never could see. As far as I remember, I found some of these Pear roots not so far advanced as to have killed the Quince roots; I then had them cut off with a saw, the tree staked, and it was restored to its fertile state.

Some large trees of the Vicar of Winkfield Pear, now twenty-five years old, and in a healthy state, have rooted from the graft. They have not suffered in health as did the Louise Bonne, but they are very large and unmanageable.

Ever since the experience gained as I have related, I have been very careful to keep the junction of the Pear graft with the Quince stock just clear of the surface of the soil, and have told my friends to do the same. Your correspondent Mr. Scott is, I presume, a young cultivator, and has some experience to gain.

I must not omit to state what so strongly impressed me at the time—the power of what we should call in animal life instinct: let us call it “vegetable instinct”—the term is not inappropriate. The trees while deriving their support from the Quince roots were confined in their growth; yet they patiently awaited their opportunity, and as soon as “mother earth” by contact tempted them with a more abundant supply of food, they gladly put forth their natural feeding powers—their own roots, and took advantage of it. The subject was full of interest. Again and again I turned to my half-reasoning trees, and felt more than ever the wondrous incomprehensible power of Nature. There is something trite and not by any means new in what I have written as to the power of the instincts of plants. The observing cultivator may have them under his eye daily; but I never remember to have been more forcibly impressed with what to me seemed vegetable reasoning than the rooting of my Pears from the graft; they “bided their time” so cleverly.

With regard to the Pommier de Paradis, not “Pomme Paradis,” Mr. Pearson is right, and Mr. Scott, well—decidedly wrong. There are many trees and shrubs that brave the severity of a continental winter only because they grow under a powerful sun, and have well-ripened tissue. This is the case in France with the Pommier de Paradis, which Mr. Scott should have seen. There is some confusion in the terms used to designate the Apple stocks called Paradise stocks. I have hitherto in all that I have written called the Pommier de Paradis the “French Paradise,” and have warned cultivators against employing it except for pot culture. The English Paradise, still grown by the stock-growers in Surrey, is a very distinct

sort, but of the same relative vigour as the Doucin of the French cultivators: consequently I have tried to make them bear one name, and have called this stock the English Paradise or Doucin, hoping that we should settle down to two names, both distinctive—viz., the French Paradiae (Pommier de Paradis), of but little value here, and the English Paradise, comprehending all the vigorous-growing varieties of the Doucin.

There are in France probably eight or ten sorts of dwarfing Apple stocks called Doucins, some of them with small leaves and a dwarf habit, approaching in character to the French Paradise, but harder—one of these may be the "Pomme Paradia" of Mr. Scott—others more or less vigorous. As far as I have experienced, almost every department in France has its Doucin stock. The best of them is that sort which approaches nearest to our English Paradise stock. Our climate requires a vigorous, hardy, surface-rooting stock—surface-rooting is the alpha and omega of fruit-tree culture in England.

The slowness with which a thorough knowledge of fruit-tree culture is acquired can be known only to those who have passed their lives in carrying it out. The knowledge of fruit-tree stocks, so slightly appreciated in England, is a life study. The changes brought on by grafting, the stocks to be employed, the experiments in grafting that may be tried, and which as described in your columns amuse me by the zest with which they are told—Pears on Thorns, and Figs on Thistles—the Apple on the Pear, and the Pear on the Apple. By the way, an American friend told me the other day that the finest Pears he ever saw were from grafts on an Apple tree. The tree, as usual, did not live many years.

To return to Apple stocks. One feels half vexed that the name "Paradise" has been applied to them; it is so absurd, but, like other ancient things, it cannot now be changed. The Pommier de Paradia is evidently from the east, is identical with the Dwarf Apple of Armenia, and may there, by some eastern tradition, have been pointed out as the Paradise Apple, and thus have travelled to the west with its imposing name. It must, however, be acknowledged that the fruit of the Apple tree bearing this name would scarce tempt a very hungry boy living in Clare Market.

Among these surface-rooting Apple stocks the Burr Knot has a high character. Its habit is stout, healthy, and robust, so that when grafted it gives to the graft a healthy prolific character. It may be propagated from cuttings made of shoots two years old, but it is slow in rooting. The English Codlin will also strike from cuttings and become a surface-rooting stock, but it does not form a healthy tree.

The great desideratum in garden Apple-tree culture is to employ a robust-growing but surface-rooting stock. The English Paradise and some of the robust-growing kinds of Doucin are of this nature; but the nearest approach to the Burr Knot, and consequently to perfection, is No. 1, a stock raised here from seed forty years since, it is presumed from the Nonesuch Apple, as its shoots are full of spurs and knots like that sort; yet, much like the Burr Knot, it makes stout shoots as thick as one's finger in one season, is most robust in its habit, and yet roots very freely at the surface, and by doing so promotes a most healthy vigour in the graft. Of this very remarkable stock, which French pomologists are in raptures with, it is intended to propagate here 100,000 a-year, and its name is the Nonesuch Paradise.

No. 2, another seedling raised at the same time, has the same tendency to make roots at the surface, is almost equally vigorous, but is quite distinct. Its shoots are smooth and dark in colour, like some of the best varieties of Doucin; but its leaves are broader, and it is more vigorous than any kind of Doucin. This will be distinguished by the name of Rivers's Paradise.

No. 3 is another seedling Paradise stock, raised in the same year as those above described. This is a hardy healthy-growing stock, more humble in its growth than the French Paradise, and calculated to make trees of very diminutive growth.

No. 4, also a seedling raised at the same time, is the most dwarf of all fruit stocks, and is a perfect miniature Apple tree, forming itself into a bush only a few inches in height. As compared to the French Paradise it is as an ant to a bluebottle fly. It is, of course, only a curiosity. I have mentioned it merely to show the illimitable variations of trees when domesticated—i. e., under cultivation for a long series of years; and it reminds me of the curious Pear which I am employing as a dwarfing stock—the Nain Vert, which when grafted on a vigorous stock never makes an annual growth of more than 2 inches.

The history of my seedling Paradise stocks illustrates what

I have advanced as to the length of time required to obtain a thorough knowledge of fruit-tree culture. Twenty years ago the English Paradise was well known, but it was rarely planted and but little understood. It is forty years since I raised my seedlings. I kept them because I was interested by their tendency to root at the surface of the soil. It is only within the last twenty years that I have been impressed with the value of Nos. 1 and 2, the impression slowly but steadily increasing, receiving an occasional filip from clever French cultivators, till, at the present time, I believe they will supersede all other Apple stocks for garden trees, giving a healthy, robust, yet prolific character to the varieties grafted on them.

Miller seems to have been well acquainted with the French Paradise (Pommier de Paradis); and I commend the following extract from his folio dictionary, 1759, to the notice of Mr. Scott, whom I have not the pleasure of knowing—it may make him a wiser man. "The Paradise Apple hath of late years greatly obtained for stocks to graft or bud upon; but these are of not long duration, nor will the trees grafted upon them ever grow to any size, unless they are planted so low as that the Cyon may strike root into the Ground, when it will be equal to no Stock, for the graft will draw its Nourishment from the Ground, so that it is only by Way of Curiosity [I quote capitals as printed], or for very small Gardens that these Stocks are proper, since there can never be expected any considerable Quantity of Fruit from such Trees. These Trees have been much more esteemed in France, where they were frequently brought to the Table in the Pots growing with their Fruit upon them; but this being only a Curiosity, it never obtained much in England, so that the Gardeners do not propagate many of them here at present."

Miller alludes to our English Paradise as follows:—"There is another Apple, which is called the Dutch Paradise, much cultivated in the Nurseries for grafting Apples upon in order to make them Dwarfs, and these will not decay or enker as the other, nor do they stint the Grafts half so much; so are generally preferred for planting Espaliers or Dwarfs, being easily kept within the Compass usually allotted to these Trees."

I hope I have in this rather lengthy article thrown some light on Apple stocks. There is almost as much to be said on Quince stocks, of which there are several varieties, some of them very unfavourable to the Pear graft, and making the trees short-lived. It must be thirty years since I received from M. Leroy, of the "Grand Jardin," Angers, one plant each of all the sorts of Quinces he possessed. In the course of a few years I discovered that the Angers Quince, "Cognassier d'Angers," was the most easy to propagate and the most favourable to the growth of the Pear. I made this known in that part of France, and it soon became the most popular of all. It deserves to be so. There are still too many other kinds of Quince employed in France and Belgium for stocks, some of which are most unfavourable to the growth of the Pear graft.

In conclusion, I must recommend your numerous readers, when they plant Apples on the Paradise stock, to avoid the French Paradise, which, as Mr. Pearson justly says, will not do well in our climate; and this seems to have been well known upwards of a century ago, thanks to our good old friend Miller. Those who assert that the French Paradise—the Pommier de Paradis, or "Pomme Paradia" of Mr. Scott—has done and does well in Scotland and other places with cool moist climates, have not planted the true sort, and probably do not know it.—Tnos. RIVERS.

ALLOW me to say a few words with regard to Pears grafted on the Quince. In 1858 or 1859, I forget which, I had three small Pear trees, grafted on the Quince, planted deep enough to cover the graft. This was not done for any particular purpose, but more by accident than anything else. Last year, when leaving my old place, on taking them up I found one had rooted strongly above the graft, both the others slightly. I have also seen Pears root in this way several times, and I am surprised that Mr. Scott should think it necessary to use such very strong language in denying what many gardeners must know to be true. As to the Paradise stock, it may be as hardy as Mr. Scott says, on this point I say nothing; but I know from experience that the trees are easily injured by frost here, and very liable to be attacked by insects (aphis) in summer. Out of ten trees, five were killed by frost, and two by

* I need scarcely to point out how this illustrates all that I have said about Pear trees rooting from the graft.

insects and the summer heat; but I am bound in justice to say that the others have made very good stocks, and the Apples grafted on them have done well.—J. H.

THE COILING OF VINES.

It was not till I had waited some time after the appearance of Mr. Rivers's illustrated communication on this question that I took it up. I wished, and waited to see, others offer their experience, as I was well aware that many could state important facts very similar to those I related at page 83, and with which Mr. Rivers deals in his usually acute way.

Passing over the opinion of Mr. Rivers's venerable French friend, upon whose experience, as it seems to me, and not on his own, Mr. Rivers recommends so confidently the layering or coiling of Vine stems, I will shortly refer to the remarks which Mr. Rivers makes on the facts which I stated in my former communication; and this I do, not for the sake of inaugurating a controversy with Mr. Rivers or any one else, but still further to assist in bringing out what may be regarded as the soundest practice on this not unimportant point of horticulture. I will still leave the circumstances connected with the experiments I have already related to be compared with Mr. Rivers's theory.

He states that I "confound the coiling of the shoot of a Vine lightly covered with soil with the layering of a Vine deeply;" but my comparison was not between the layering of a shoot deeply, and another that had been or was to be lightly covered. It was between those that I had layered 8 inches deep and the directions given by Mr. Rivers's misprint to cover them 10 inches deep, so that on that particular point I was reasoning from premises furnished by what I supposed to be his and my own figures; and from what I am about to state it will appear that the correction of the misprint does not alter the deductions or the correctness of the opinion formed in the course of my own experience.

Mr. Rivers asserts that to bury the stem of a Vine 8 inches deep is to place it too deep to receive any benefit from those grand sources of life—light and heat, consequently it puts forth no roots. I will not here controvert the idea that light is more favourable than darkness to the formation of roots, any further than to say that I agree with our great physiologist in believing that darkness is more favourable than light to the formation of roots. Heat has, beyond all question, much influence in producing roots, and in the case of the experiments I detailed this only tends to strengthen the deductions that I made—namely, that it is unnatural and injurious to layer the stems of Vines in the soil.

The Vines which I layered across the border from the back to the front wall, and those I planted, and the stems of which were layered from the centre of the inside border, where their roots were fixed, to the front wall, were all layered in below the hot-water apparatus, which runs 2 feet from the front wall. Close to the surface of the 8 inches of soil which covered the Vine stems rested the pipes. I need scarcely say that at the point below the pipes the stems had by far the most warmth, much more than where the whorl of roots was produced, close to the cold front wall, yet this did not cause the stems to emit roots where there was most heat, but where I conceive it to be most natural—near the union of the Vine with the border. Now, I have always found that Vines planted in the usual way send their roots into the soil heated by the proximity of pipes or flues, and in these cases at least Mr. Rivers's theory as to the Vines being buried away from the influence of heat being the cause why they did not emit roots on "every inch of stem" does not hold good in my experience, for the roots were produced close to the front wall where the soil was coldest and shaded from the rays of the sun. As to the greater amount of light and heat which a Vine covered 2 inches deep with fine soil receives over one covered 8 inches in the inside of a warm vinery, I could not really determine; nor does this seem to be any more than a theory with Mr. Rivers.

In reference to the other case of which Mr. Rivers says "that the stems of the Vines were most probably too deeply covered, and shaded from the direct rays of the sun by the front wall: under such circumstances they could not put forth roots," facts are very different from surmises or guesses, for it was just in the shade of the front wall that the strong whorl of roots was produced, exactly below where the stems entered the soil. My experiment with the pot Vines may be accepted as a "great mistake" in the same sense that many other experiments may be so termed; at the same time I cannot, with my

experience of the depth at which Vine roots will act, and act vigorously, accept Mr. Rivers's theory in this case either. He says that the results I stated arose from the roots being buried to the depth of 15 inches, and the Vines were ruined by their roots being placed out of the influence of light and heat. Surely Mr. Rivers is not in earnest when he affects to tell Vine-growers that the roots of Vines will not act at a depth of 15 inches, because they are out of the influence of light and heat! I would simply ask if ever he ripened Grapes in April from Vines having their roots entirely in an outside border without bottom heat, and thatched over with a layer of dry leaves and straw? and if he has, whether he thinks under such circumstances their roots were under the influence of light? But this is not all, the border in which I plunged the pot Vines in question was more than usually open, and heated from beneath with air-drains.

As to roots not acting at a greater depth than 15 inches I will leave that question to all those who have either put an addition to the front of a Vine-border or lifted the roots of Vines that have been planted for any length of time. Have they not found them down 4 or 5 feet deep, where light and heat from above could not have any influence on them? The reason of these Vines not doing well was not the wants of which Mr. Rivers speaks; and their not doing well cannot, from anything that has come within the range of my experience, or that Mr. Rivers has advanced, be attributed to the want of light and heat at their roots. I feel perfectly confident that had they been buried much deeper, but not having soil in contact with their stems, they would have done as well as their contemporaries. If roots of Vines are so fond of light why do they not root up to it? as they do when covered over deeply with manure or leaves, still more ceiling them from light, although they will not do so when the border is not mulched.

I am inclined to look upon the coiling as a delusion in more respects than this. It is practised with the view of increasing the roots of Vines; but is not root-vigour more dependant on the amount of healthy foliage that the Vine is allowed to make than on burying in the ground what Nature designed should climb into the air, and induce the emission of roots at fresh points? I feel convinced that if a fresh set of roots are thus produced the old roots will be deserted in the long run; and if so, what has been gained? Not anything; but the result will be injury to the Vine, to say the least of it, for the time being. In the order of Nature the Vine will come to depend on the roots formed at the junction of the Vine with the border, thus proving the correctness of the theory that the descending sap is interfered with by placing the liber of the stem where only roots were intended.

If I might suggest to Mr. Rivers that he leave a portion of the Vines he proposes coiling as they are, for comparison with those coiled, his experiment would then be much more satisfactory, and if spared till the International, "may I be there to see." This quotation prompts the thought that this hobby may prove as unruly as John Gilpin's horse.

With these remarks I leave this question in the hands of others who may feel inclined to favour us with any experience they have had, and leave future experiments to be related when carried out to their results, as I purpose to do in the case of some I am now making.—D. THOMSON.

MEARNS'S SYSTEM OF COILING VINE SHOOTS.

If I may judge from a short article in the "Florist and Pomologist" for this month, the coiling of a Vine shoot *without a root*, after the system of Mearns, which was much written about some years ago, has been confounded with the coiling of a rooted Vine.—T. R.

[A drawing and description of Mr. Mearns's "coiling system" are in the "Vine Manual," published at our office.]

NOMENCLATURE OF GARDEN PLANTS.

SHALL I be taken for a Goth if I plead the cause of the ladies, the country gentleman, and the general public, in favour of a natural English system of nomenclature for all the vegetable kingdom, instead of the present hybrid classical system?

Very few know the meaning of the names used, and I am sure that equally appropriate scientific names could be devised in our own tongue, while for all ordinary purposes the common popular English names are sufficient. The puzzle caused to most people by a seed or plant catalogue is immense; and I see

no reason why seeds should be catalogued as *Ipomæa*, *Bellis*, *Tagetes*, *Mathiola*, &c., when they are well known as *Convolvulus*, *Daisy*, *Marigold*, *Stock*, &c. Cannot we have an English nomenclature established which shall be intelligible to all?—D. S.

HUNTROYDE PARK.

(Continued from page 478.)

For the last two months the weather has been very unfavourable for the alterations which have been commenced, nevertheless, much has been done; a great portion of the draining has been completed, and a large belt of trees that constantly enveloped the kitchen gardens, shutting out from these the sun and air, has been grubbed up. Owing to these trees the produce of the gardens had for many years past been of a very inferior kind. The ground the trees occupied is now being trenched and will be taken into the kitchen garden, the outer walls of which will be removed on the south side to a distance of 50 yards. Here a sunk fence has been commenced which will extend about 600 feet along the south front of the kitchen garden. A little below this there is a public footway which is at times thronged with people, especially on Sundays; and as the family cannot at present enter the kitchen garden without crossing this path, my object in making the sunk fence is to hide the gardens as much as possible from public view. The fence will be 6 feet deep, 16 feet wide at top, and 10 feet wide at bottom, and a walk 8 feet wide will be made at the bottom of the sunk fence. The soil excavated will be all thrown out on the south side; this will form a bank which will completely block out the view from the public road. To increase the height of the back of the bank all the large tree roots have been dragged down and placed parallel with the sunk fence; they will also form a good drainage for the bank, which will be made very ornamental on the south side, and as the road above mentioned is one of the principal approaches to the Hall, my intention is to plant an avenue of *Cedrus deodara* on each side of it about the centre of the fence. A tunnel will also be made by which access may be gained to the walk at the back of the sunk fence. This tunnel will be about 50 yards long, and will be commenced in the pleasure ground on the south side of the carriage road, and by this means the family will be enabled to pass from the pleasure grounds or the Hall without being overlooked by the public.

In the pleasure grounds extensive alterations will be made. These, however, will not be commenced for some little time yet, my object being to concentrate the most of my attention on the kitchen and fruit gardens for the first year, so that they may be progressing while my attention shall be engrossed with the alterations in the pleasure grounds.

I may here state, in order to more fully illustrate the operations now in progress, that the present flower garden, which is at a considerable distance from the spot where the mouth of the tunnel on the south side will be situated, is to be converted into a pinetum. This will be divided into eight quarters by eight 12-foot walks, all converging to a raised mound in the centre. Here eight magnificent perspective views will be obtained by cutting through the wood in each direction. I propose clearing a space of about 30 yards for each walk, levelling the sides, and planting them with choice specimens of such coniferous trees as will be likely to thrive in this cold, wet, and smoky climate. Three of the walks will cross a trout stream which can be made very beautiful without much trouble. A large reservoir will be made at some distance above this point, and a series of cascades and waterfalls will be constructed down the brook. These are intended to form an important feature in the beauties of Huntroyde after it has undergone the various alterations in contemplation, and which are necessary for giving prominence to its natural advantages.

One of the three walks mentioned above as intended to cross the brook in another direction, will bring us out exactly opposite to the mouth of the tunnel. At the north end will be a flight of steps leading from the walk at the bottom of the sunk fence. Here a field about three acres in extent is being drained, preparatory to its being converted into a fruit garden. Through the centre of this field, in a straight line from the tunnel, will be the principal approach to the kitchen garden. A main walk about 15 feet wide will be made, and on each side of this walk will be a grass plot 20 feet wide, in which will be cut out beds for *Roses*, bedding plants, fine-foliaged plants, &c. At the back of these, on each side will be formed a bank about 5 feet high, and on the centre of the bank will be planted an

evergreen hedge of some kind, probably *Holly*. Then there will be a 15-foot slope on each side of the hedge. The slopes towards the broad central walk will be for ribbon-borders. Here I intend to use five shades of colour, which will give 3 feet of each shade. The number of plants required for these borders will be about 30,000.

Another walk, 10 feet wide, running parallel with the sunk fence from east to west, will intersect the walk leading from the tunnel. This walk will be about 300 yards long, commencing at the east end in what is now the old kitchen garden. On the right hand is a range of good houses which have been used for a variety of purposes, they are in good condition and only want modernising. They are about 90 feet long. In one of them I have a fine lot of *Pines*, and some excellent pot *Vines*, supplied by Mr. Meredith; the other two contain a miscellaneous collection of *Pines*, stove plants, &c. During the spring these houses are to be altered, and they will thenceforth be used as *vineries*.

At the end of this range, and parallel with the walk, a site is set apart for a fine range of three-quarter span-roofed houses. The range will be 164 feet long by 20 wide. This brings us across the present kitchen garden, where we enter the field before mentioned. In the front of these houses will be a sort of terrace-wall, on which will be placed ornamental vases for plants. On the opposite side of the walk, in front of the houses, will be a border for mixed flowers, such as *Roses*, *Dahlias*, herbaceous plants, &c.

After passing through the kitchen garden we enter the field, or what will be the fruit garden. Here the mixed border will be continued on each side of the walk, after passing the houses, till we come to and pass across the main central walk. The rest of the walk westward I purpose covering with wire trellises in the form of an arch. This will be for training *Apples*, *Pears*, &c., on, and at the end of this walk will be a summer-house. The effect when looking from this point I think will be very pleasing. At the back of the borders on each side will be planted a row of fruit trees to be trained as pyramids. The four quarters, divided by the walks above described, will be laid out in beds of about 30 feet each. These will be thrown considerably above the general level of the ground. In the centre of each bed will be planted a row of pyramidal-trained trees, on each side of these a row of bush-trained trees, finishing off the edges on each side with a row of cordon-trained trees. The whole of these raised fruit-tree borders will be made parallel with the walks, and the sloping banks at the back of the ribbon-borders will be planted with *Strawberries*, that facing the east will be planted with the latest-fruited kinds, and that facing the west with the earliest, and the sloping bank on the garden side of the sunk fence will be set apart for *Alpine Strawberries*.

I will now go back again to the kitchen garden for the purpose of describing a range of forcing-houses built in a very creditable and workmanlike manner by the Messrs. J. & L. Birtwhistle, of Padham, near Burnley. Although the range was only begun about the last week in November, we shall in another fortnight have it completed, and the weather during the greater portion of the time has been very unfavourable. The range is a three-quarter span, 144 feet long and 16 wide, inside measure, and divided into five compartments. Two of these will be devoted to the growth of *Pines*; one to *Cucumbers*; the fourth to *Melons*; and the fifth will be used as a propagating-house. In this house I have had constructed what I shall call Will's model propagating apparatus. Living near a manufacturing town where almost anything can be formed out of iron, I have been able to surmount a difficulty which has always tried me sorely. I may now truly say I live in an iron age. Well, the difficulty I have hitherto had to contend with has been how to construct a tank suitable for propagating-purposes—I mean a tank that a hot-water pipe shall pass through immersed in water. I have had several constructed in this way; they have been built on firm and solid walls, the bricks laid in cement, the bottom and sides covered with *Portland cement* and tiles, and on these, again, another coat of *Portland cement* with a proper quantity of good sand in it; yet after all had been finished, as soon as the pipe that passes through the ends of the tank became heated by the hot water circulating through it, it expanded, and then the cement cracked, away went the water, and instead of a nice moist heat I have been obliged to do with a dry heat, which is not at all favourable for propagating-purposes. A tank of this description I had built at Woodlands, near Stanmore, some years ago, when I had a controversy with my old friend

the late Mr. Beaton, when he was so strongly advocating the sand-and-water system of propagating, and it was the most successful I ever saw before or since. Now living, however, near a town where castings of any description can be had, I made a sketch of what I wanted, gave it to Mr. Birtwhistle, and he quickly made a pattern which was sent to the foundry, and in a short time, not more than a fortnight from the time the idea suggested itself, up came my propagating-pans. They are 2 feet wide at the top, and about 13 inches wide at the bottom, 8 inches deep, and 10 feet long. Very shortly I will give an open section of the end of the house, showing the position of the propagating-pans when fixed, the method of working them, &c. I have also had a lot of iron slabs cast for covering flue tops; these answer remarkably well, they will throw off a large amount of heat with one-fifth of the firing that it takes to heat a flue covered with ordinary tiles, and I am not sure whether they will not supersede hot-water pipes in many cases.—J. WILLS.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

MARCH 6TH.

FLORAL COMMITTEE.—The unfavourable state of the weather had its effect at this meeting, both in respect to the number of visitors and that of the plants sent for exhibition. The exceedingly cold atmosphere made exhibitors very cautious in sending their plants, but, notwithstanding, there were many good things to be seen. Major Trevor Clarke sent a specimen of *Coburgia miniata*, an old plant, not often seen in bloom, producing a head of handsome, tubular, red flowers, 3 inches long, the segments of the mouth of the tube marked with dark green; a special certificate was awarded it. Mr. Daniels, Swyncombe House, Henley-on-Thames, contributed cut specimens of a new *Bougainvillea*, named *splendens*, brighter and more intense in colour than *speciosa* and *glabra*, and an earlier-flowering variety. From a note sent with it, it appears that with this and the other *Bougainvilleas* a succession of blooms of these decorative plants may be had throughout the year. A first-class certificate was awarded.

Messrs. Lee, Hammersmith, exhibited eight fine plants of *Aucuba japonica variegata*, bearing clusters of handsome scarlet berries. A special certificate was awarded them. J. Bateman, Esq., sent cut specimens of Orchids for distribution, and for these a special certificate was also awarded. Rev. G. Chesre, Papworth Hall, sent two large pots of *Anna Beley* Pink in full flower, for which a special certificate was awarded on account of meritorious culture. Mr. Young, gardener to Mrs. Barclay, Highgate, sent a large specimen of *Oncidium sphacelatum*; and Mr. Veitch a new *Lycaste* from Guatemala, supposed to be a good variety of *L. Deppei*; also *Illicium religiosum*, an old plant producing pale yellow flowers. From Messrs. Garaway came cut specimens of *Amaryllis*—viz., *Ariel*, a pale variety with broad white bands, and *Miranda*, a deep red.

Messrs. E. G. Henderson, Wellington Road, exhibited a large collection of *Cyclamens* containing many varieties, some of them producing semi-double flowers; among them *C. coum*, and *Atkinsii rubrum* and *album*; these dwarf specimens covered the surface of the pots with their sweet miniature flowers. A special certificate was awarded them. From the same firm came *Pelargonium Pink Stella*, very promising, but not in a condition now at a season for its merits being decided on. It was requested that it should be sent again. Mr. Brown, Elmton Hall, was awarded a first-class certificate for a cut specimen of *Rhododendron Aucklandii*, a large handsome white flower.

From Mr. Elliot, Lillieshall, came a cut specimen of seedling *Rhododendron* Duchess of Sutherland; and from Mr. Allis, Gunton Park, Norwich, a cut specimen of a *Rhododendron* with very handsome white bell-shaped flowers, with deep red markings at the base. This beautiful specimen arrived too late to be noticed. It was subsequently determined to be *R. argenteum*. W. Wentworth Buller, Esq., sent cut specimens of hybrid *Rhododendrons* and *Rhododendron Jenkinsii*, also a plant of *Lælia furfuracea*, an Orchid seldom seen in flower. A special certificate was awarded for these interesting specimens. Mr. Pilcher, gardener to S. Rucker, Esq., Wandsworth, brought twelve cut flowers of *Camellias*, all of them first-rate flowers of great beauty; among them were a superb specimen of the double *Camellia reticulata*, *Cup of Beauty*, *Reine des Fleurs*, *Lavinia Maggi*, *Valtevarado*, *Countess of Orkney*, *Princess Sophia*, *Mathatiana*, *Eximia*, and *Elegans*. A special certificate was awarded them—a distinction which they well merited. Mr. Pilcher brought also cut specimens of two beautiful *Lycastes*. Several plants came from the Society's gardens, among them were *Cattleya Trianae* var., collected by Mr. Weir; a well-grown specimen of *Dendrobium speciosum*, to which a special certificate was awarded; and another variety of *Odontoglossum* collected by Mr. Weir. It is to be hoped that at the next meeting Mr. Pilcher's example may be followed, and that an opportunity will be given the Fellows to note down the best varieties of *Camellias* in cultivation. It is not difficult to bring cut specimens of this beautiful flower, and it is very desirable to make it more popular.

FRUIT COMMITTEE.—The subjects exhibited on this occasion were

few, as might be expected at this period of this season. From the Rev. M. J. Berkeley's garden in Northamptonshire, came an Apple supposed to be Northern Greening, but more highly coloured than that sort usually is, even when long kept; and from Mr. Fleming, Chiveden, Scarlet Nonpareil in excellent preservation, and some very good Apple jelly. Mr. Christie, Avington House, near Winchester, sent two seedling Apples, one of which, somewhat resembling Court of Wick, was of very good quality, and it was requested that a greater number of specimens should be sent for tasting on a future occasion. Mr. H. Tarberville, Pilton, Barnstaple, exhibited a seedling Grape, said to hang exceedingly well, but of which the Committee could form no opinion from the small portion sent, and the bad condition in which the berries were.

SCIENTIFIC MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After the awards of the Floral Committee had been announced by the Rev. Joshua Dix, and some brief comments had been made by Mr. Wilson, the Chairman of the Fruit Committee, on the subjects brought before that body, the Rev. M. J. Berkeley proceeded with his remarks. Those who were at the last Tuesday meeting, he said, would recollect that attention was drawn to a species of *Peperomia* exhibited by Mr. Wilson Saunders, and which was supposed to be a new species. He (Mr. Berkeley) had the good fortune to meet at Kew, the other day, M. Casimir De Candolle, who had particularly studied the genus *Peperomia*, and he recognised the plant in question as being *Peperomia nummulariifolia*. *Coburgia miniata*, from Major Trevor Clarke, was next noticed as a remarkably handsome but shy-flowering bulb. Its habit, Major Clarke observed in a note accompanying the specimen shown, is to produce a profusion of offsets, and the plan which he adopts to flower it is to grow it in small pots, to shift every spring, and, in order to remove the offsets as they appear, to keep the bulb three-parts out of the soil. If, on the contrary, increase is wanted, the bulbs are shifted into larger pots. The treatment in all other respects is the same as that of the *Hippeastrums*, to which the *Coburgias* are related. Mr. Berkeley then directed attention to *Lælia furfuracea*, from W. Wentworth Buller, Esq., a plant rarely seen in flower in this country, and perfectly distinct from *L. autumnalis*, with which it had been compared. Among cut flowers was an *Odontoglossum* from New Grenada, sent home by Mr. Weir, and which was considered to be new; there was likewise a spike of *Rhododendron Aucklandii*, and it was stated that the plant from which it was cut was 4 feet high, and was bearing fifteen of its magnificent spikes of white flowers. A hybrid *Rhododendron* from W. W. Buller, Esq., then came under notice. It was stated to have been obtained from *R. javanicum* and *R. jasminiferum*, and to be almost if not quite the same as one that had been exhibited some time ago by Mr. Veitch (*Princess Helena*). It was a curious instance of a pink flower proceeding from an orange and a white. Of *Illicium religiosum* it was remarked that it would probably be hardy and produce its fragrant flowers on the south coast, like *Pittospermum telira*, another Japanese plant, which at Margate formed large bushes, but in colder parts of the country required the protection of a greenhouse. *Bougainvillea splendens*, a distinct kind, more lively in colour than *spectabilis*, was the next subject to which attention was directed, and a letter was read from Mr. Daniels, stating that *Bougainvilleas* could now be had in bloom all the year round; for the flowering of *B. splendens* commenced, with the year and continued he knew not how long, that of *B. spectabilis* was prolonged from April to July, and *B. glabra* then commenced, and continued till the end of the year. *Nuttallia cerasiformis*, of which some flowering shoots came from the Society's garden, was then noticed; and Mr. Berkeley observed, that though not very attractive as seen at the meeting, yet when he saw it a fortnight ago at Chiswick, the bush had a very good appearance, and having the habit of the Ribes, and flowering abundantly at the present season, it deserved attention. After describing the structure of the flowers and fruit, Mr. Berkeley said that orders had been given to propagate the plant with the view to its distribution among the Fellows of the Society. Reference was next made to a cut spike of the beautiful *Rhododendron argenteum* which had been sent by Mr. Allis, of Gunton Park, near Norwich. Mr. Berkeley then exhibited a highly magnified drawing of the fungus which produces the formidable disease, called the muscadine, which preys on the silkworm; and as instances of other fungi existing in animal tissue, he cited the caterpillar fungus of New Zealand, which is sometimes brought to this country as a curiosity, and the fish moulds attacking living fish and rendering it very difficult to preserve them in health at the Zoological Gardens and other places. There were also fungi causing cutaneous disorders in man. His object in drawing attention to this subject was to make some remarks on the supposed connection between fungi and the rinderpest. Dr. Beale had, in a letter which appeared in the *Medical Times*, stated that in all cases of rinderpest entozooids were found to exist in the voluntary muscles, and in the involuntary muscles of the heart. Dr. Cobbold, however, determined that these bodies were not animal, but thought they were of the nature of Alge; but these are not known to exist in animals, though fungi are. In the same publication "A Provincial Physician" called attention to the fact that the fields were covered last autumn with an orange-coloured rust, but though he had examined the animals and found in them the spores, he did not meet with a single instance in which these had germinated. Mr. Berkeley expressed his opinion that it was perfectly possible that the bodies

discovered by Dr. Beale might be a form of some fungus, seeing that fungi were known to develop themselves in living animals; but as they were found not merely in animals which had died of the rinderpest, but in those which were healthy as well, he was not inclined to look upon them as the cause of the disease, though they might be a consequence.

Mr. Wilson Saunders remarked that these moulds seem to have little effect when the vitality of the animal is strong, but in cases of weakness and disease they might have a greater influence. With regard to *Coburgia miniata*, he allowed the plant a little more pot room than Major Clarke, and, as a consequence, instead of one spike of flowers the bulb sent up two or three. He allowed more pot room, a season of rest, and then pushed the plant on when just beginning to move. As many of these bulbs form large, succulent, permanent roots, the earth in the pots should never be allowed to dry up so as to desiccate such roots; but, on the contrary, they ought to be preserved in a proper condition as regards moisture. In the case of bulbs with annual roots, as *Hyacintha*, *Tulipa*, &c., this did not much matter. The plan which he pursued with the *Coburgia* was to put it in a common greenhouse, there let it rest, and then push it on rapidly in a forcing-house. He would mention, that in Japan *Illicium religiosum* was planted near the temples, and there was, apparently, in that country a feeling for it similar to that which once existed for the Yew in our own. *Illicium religiosum* was the best species of the genus; its yellow flowers had a delicious perfume; and though it had been long known in this country it was not so much appreciated as it deserved.

Thirteen new Fellows were elected.

The exhibition last Saturday was much more extensive and varied than it was the week previously, and, notwithstanding the continued ungenial state of the weather, the contributions were of a gay and meritorious character. Several exhibitors made their appearance who have not been found at these meetings previously, and contested spiritedly, and in some cases successfully, the honours with those who have hitherto had it all to themselves. The schedule for the day consisted of prizes for the best collection of six miscellaneous plants in flower, and the first was taken by Mr. Beasley, gardener to Mrs. Wood, Acton, with six nicely bloomed plants, consisting chiefly of *Azaleas*, and a very nice specimen of *Chorozema Lawrencianum* trained in the form of a balloon and full of bloom. Mr. Young, gardener to Mrs. Barelay, of Highgate, was second, with a very nice collection also; and Mr. Bartlett, of Hammersmith, received a first-class certificate. In the class for collections of fruit there were very few exhibitors, the only award being made to a Queen Pine exhibited by Mr. George Ward, gardener to T. N. Miller, Esq., Bishop Stortford. There was a dish of Uvedale's St. Germain, from the west of England, sent us Chaumont!

Besides the subjects exhibited for the prizes offered in the schedule, there were various others which required special attention, and first-class certificates were severally awarded to Mr. Young for collections of eleven *Polyanthus Narcissus*, sixteen *Hyacinths*, sixteen *Tulips*, twelve *Crocus*, and eight pots of *Lily of the Valley*. Mr. Bartlett was also awarded certificates for *Prunus sinensis alba plena*, cut flowers, and two specimen Ferns. Messrs. Cutbush, of Highgate, received extra prizes for a collection of forced flowers in bloom, and for forced bulbs. Messrs. Locking, Brothers, also received a first-class certificate for their collection.

INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

Among the many agencies which are being rapidly called into existence in furtherance of the interests of this great and important undertaking, a most valuable and successful one is that of local effort in the provinces, under the form of local committees or local secretaries. In the case of the former, a number of gentlemen have banded themselves together to work a given district; and in the latter case a gentleman has undertaken to do this individually. Up to the present time local committees have been formed, and are in active operation, at Sleaford, for Lincolnshire, Hon. Sec., Mr. D. Lumsden, the Gardens, Bloxholm Hall; Bristol, Hon. Sec., Mr. James Garaway, Durdham Down Nursery; Oxford, Hon. Sec., Mr. W. H. Baxter, Curator of the Botanic Gardens; Warrington, Hon. Sec., Mr. W. Bishop, the Gardens, Bewsey Hall; Nottingham, Hon. Sec., Mr. E. J. Lowe, F.L.S., Highfield House; Derby, Hon. Sec., Mr. E. Cooling, Mile Ash Nurseries; Leamington, Hon. Sec., Mr. J. H. Hawley, Brunswick School; Hereford, Hon. Sec., Mr. N. Wynn, Midland Bank; Hertford, Hon. Sec., Mr. E. R. Francis, the Nurseries; and Doncaster, Hon. Sec., Mr. James Tindall, the Gardens, Sprotborough Hall.

In Scotland these local committees are in active operation—viz., Glasgow and the West of Scotland, Hon. Sec., Mr. James Anderson, Meadow Bank, Uddingstone; Elgin and the North of Scotland, Hon. Sec., Mr. H. Rose, the Gardens, Floors Castle; and Kelso and the South of Scotland, Hon. Sec., Mr. W. Mien, Kelso.

In Ireland an influential local committee has been formed at Belfast; Hon. Sec., Mr. W. H. Ferguson, Curator of the Botanic Garden.

In the following places honorary local secretaries have kindly volunteered to act:—Manchester, Mr. John Shaw; Taunton, Mr. R. H. Poynter; Ascot, Mr. J. Standish; Chester, Mr. Arthur Dickson (F. & A. Dickson & Sons); Bradford, Mr. W. Dean; Ipswich, Mr. T. Blair, the Gardens, Shrubland Park; Coventry, Mr. W. Miller, the Gardens, Combe Abbey; and Jersey, Mr. C. B. Saunders, Casarean Nurseries, St. Saviour's. Other committees are in course of formation throughout the country, and judging from the valuable aid the Executive Committee have already received from these sources, the most satisfactory results will ensue from their establishment.

Persons wishing to aid the movement should apply to the local secretaries in their several districts, from whom they can obtain the necessary papers, and also subscription forms, &c. The Executive Committee earnestly appeal to the horticultural community throughout the country for further help. The movement increases in magnitude and importance day by day, and with this comes a corresponding increase in the expenses to be incurred, despite the utmost vigilance in the financial department. From the gardeners have come a most liberal response, as the subscription list will testify, and it is hoped that a much larger number are yet to be enrolled as subscribers to the fund.

The Committee of the Botanical Congress to be held under the presidency of Professor A. De Candolle, now comprises the names of James Bateman, Professor Babington, W. Baxter, J. J. Bennett, Rev. M. J. Berkeley, Professor Bentley, W. Carruthers, Professor Daubeny, Charles Darwin, Dr. Hogg, W. Masters, J. McNab, A. G. More, Dr. Moore, T. Moore, J. Miers, W. Paul, Dr. Prior, J. G. Veitch, Dr. Welwitsch, Dr. Wright, James Yates, and others. Several papers have already been announced, and it is expected that a large number of foreign botanists and horticulturists will be present. Gentlemen intending to take part in the Congress should apply to Dr. Maxwell Masters, the Honorary Secretary, at the office of the Exhibition, 1, William Street, Lowndes Square, S.W.

VINE CULTURE.

Mr. WILLS has drawn inferences from my remarks that astonish me, and that were certainly neither intended nor conveyed. Referring to what I said about the difficulty of saying anything new on the subject of Vine-culture, and which it would appear constitutes the breach of courtesy referred to, he asks, "Is the cultivation of the Vine to stop at the point of perfection at present gained, whilst everything else is progressing?" Certainly not; but I do not think that horticulture, or any other science, is likely to be greatly advanced by an unnecessary repetition of facts already familiar to every one.

Secondly, Mr. Wills observes that I am wrong in assuming that he was attempting to introduce any new system of cultivation for the Vine. I should have thought that the observations just referred to, which he finds fault with first, would have been sufficient to exonerate me from such a charge. The idea of bestowing either the credit or the blame of such an attempt upon him never occurred to me.

Passing over his witticisms about painting Vines, &c., I will just observe that I know champion Grape-growers who use the spoke-brush for cleaning their Vines, and approve of it, and who, I have no doubt, will corroborate my statements should these remarks meet their eye; and I still maintain that a small amount of care is all that is necessary to prevent the buds of a well-ripened Vine shoot from being injured. I have often used the brush myself, without ever having my appetite set on edge for anything stronger than water.—T. S. W.

[We do not think Mr. Wills intended to make any offensive remark, and we can assure Mr. Wills that the writer of the above is the head gardener of a well-known domain. If they met by our fireside they would shake hands, and laugh heartily that any misconception had occurred. You shall not poke at one another any more, gentlemen.—Ems. J. or H.]

SKELETON LEAVES.—The leaves are boiled for two minutes, then transferred to a strong solution of permanganate of potash and gently heated. In an hour or two the laxer tissues may be easily removed by means of a brush. Sulphurous acid, or a solution of chloride of lime, may be used for bleaching

them. The stains of permanganate of potash upon the fingers are easily washed off by sulphuric acid.—H. F. CHURCH, in *Chemical News*.

APHELEXIS CULTURE.

INQUIRIES having been made on this subject by a correspondent, the following, which is in answer to them, may be useful to other readers as well.

Presuming "A NOVICE" to be in possession of good, strong, compact, healthy plants in pots not more than 6 inches in diameter, though he may have larger plants, only it is necessary that they be well furnished or such as have been grown for specimens, he should, in the end of this month or beginning of April, give them a shift into pots a size larger. If, however, the plants are only such as never will make specimens (and I think this is the case), it would be better to put in cuttings in April, and grow them on. As "NOVICE" also wishes for information as to the mode of propagation, I will therefore commence with it.

The shoots eligible for insertion as cuttings are those about 3 inches long, strong, not showing flower, and with the base firm. This will be the case early in April. The shoots having been slipped off, trim the base with a sharp knife so as to take away any raggedness of the slip, and dress it for three-quarters of an inch upwards. The cuttings being prepared, they are to be inserted round the sides of a four-inch pot, nearly three parts filled with drainage, a sufficient thickness of sandy peat being placed over the drainage to leave room for three-quarters of an inch of silver sand at top. The cuttings are inserted so that their base may rest on the sand, and at the least possible distance above the layer of sandy peat. The pot thus prepared is to be placed inside one of larger size, so that both rims may be level, and the interval between the two pots may be filled with small gravel, or broken brick or crocks, putting sand on the top. Select a bell-glass which will fit on between the pots, give a gentle watering, put on the bell-glass, and place the cutting-pot in a temperature not more than 10° warmer than that of the house in which the plants grew from which the cuttings were taken. If the pots are plunged all the better. The sand should be just moist and no more. Give a little air at night only, by tilting the bell-glass a little, and shade from bright sun. The cuttings will be well rooted in six or eight weeks.

The next best time to take cuttings is towards the end of May, or from that time to the end of June, but the earlier the better. The cuttings should then be firm, but not fully ripe, and, instead of inserting them round the sides of a four-inch pot and setting it in a larger one, they may be potted singly in two-inch pots, draining efficiently to one-third the depth of the pot, placing over the drainage a layer of sandy peat, and over that from half to three-quarters of an inch of sand. A small hand-light, which need not be more than 3 feet long by 18 inches wide, may be placed on the table of the house in which the plants affording the cuttings are, and it should be filled with sawdust to within 3 inches of the glass. Cocoa-nut refuse, however, is a better plunging material, and moss answers well. The pots are to be plunged to the rim, and the light kept close by day and tilted a little at night to prevent damping, and, having a shady position, they will not require shading, unless the sun shine directly upon them, when a slight shade may be given. With careful watering the cuttings will root with certainty, if treated as above, and no undue excitement be given in the shape of extra heat, that of the house, from the advanced state of the cuttings, being ample. Instead of putting in the cuttings in small pots they may be inserted round the sides of a four or six-inch pot, and be placed under a hand-light within a cool house or pit. In either case they will be well rooted in six or eight weeks.

The cuttings when struck should be potted singly in three-inch pots, using a compost of turfy sandy peat two-thirds, and one-third pieces of charcoal, not larger than a pea, and broken crocks, the dust of both being removed; one-sixth of sand may be added. After potting place the pots in a frame near the glass, keeping close and shaded from bright sun, and the young plants will soon grow away freely. Now admit air and expose to the sun, but do it by degrees, and, to make them grow stocky or bushy, nip off the points of the shoots. They should be so exposed as to endure sun by the end of September. Early in October remove the plants to a light, dry, and airy shelf in a cool greenhouse where they can have air daily, but exclude frosty currents. Be careful not to over-water. In the first week of April pot them in 4½-inch pots, keep somewhat

close for ten days or a fortnight, and if growing freely take out the points of the shoots, but, if not, defer this and give them a six-inch pot in June, stopping a fortnight afterwards. After potting they should be placed in a cold frame, and when growing freely the lights should be tilted back and front. They are to be housed by the end of September, and have a similar position to that which they had in the previous year. The plants will now (April) be equal to those in six-inch pots purchased at a nursery, and whether raised or purchased the after-treatment will be the same.

To make specimen plants, pot into nine-inch pots early in April, and as the shoots grow peg or tie down the lowest so as to have the plants furnished to the rim of the pot. Give them another shift by the middle of June into 12-inch pots, stopping them soon afterwards, and never later than the early part of July, and keeping in a cold frame with plenty of air and light, protecting, however, from very bright sun by a very slight shade of some kind. Continue to peg or tie down the shoots so as to produce a compact evenly balanced head; and due care being taken of them in their winter quarters, they will make nice specimens for blooming in the following year.

In the following or first year of flowering the blooming shoots should be cut-in to within an inch or two of the old wood, and they will break strongly, in addition to which there will be some small stubby shoots that have not flowered; these will receive encouragement from the increased light and flow of sap, and they will for the most part ripen their wood well and flower in the following year. They are to be scrupulously preserved. When the shoots break afresh then is the time to re-pot, and, being in 12-inch pots, a shift into one 15 inches in diameter will be sufficient. In repotting turn the plant out carefully, and pick away the drainage and old soil so far as this can be done without injuring the fibres. Drain the pots extra well, and at this and the previous pottings, after shifting into six-inch pots, use for soil two-thirds turfy sandy peat, broken and torn with the hand, picking out the pieces of heath stem and root, and one-third charcoal in pieces from the size of a pea up to that of a walnut, and broken crocks of similar size sifted with a sieve having quarter-inch meshes to get rid of dust and the smaller particles. To this soil should be added one-sixth of silver sand, and let the whole be well mixed. Be careful not to bury the neck of the plant, but have it slightly elevated in the pot. Pot rather firmly, give a gentle watering, place in a cold frame, and keep close and shaded for a few days until the roots take hold of the fresh soil, which will be in about a fortnight. Then gradually expose to light, never shading at any time except from bright sun, and give air by tilting the lights back and front. Any strong long shoots may be stopped, but not after the middle of July, if they are expected to give flowering shoots for next year's bloom. The following year, if due regard be paid to pegging down, tying, and regulating the shoots, fair specimens will be the result. It will not now be necessary to re-pot after blooming and cutting-in; but, the drainage being good, it will suffice if some of the surface soil, and that around the sides of the pots, be removed, and its place supplied by fresh compost, giving weak applications of liquid manure when making fresh growths.

In subsequent years the plants may be fresh potted when required, though they will often continue in health for years if afforded a good annual top-dressing, and they may be either shifted into larger pots, or continued in the same size if a portion of the old soil is carefully removed. This should be done after the plants have been pruned back after blooming, and the shoots have grown a little. All potting should be done so that the roots may reach the sides of the pot before winter. The shoots should not be stopped after June, if the plants are to bloom in the following year. Never cut back into old wood, but leave enough of last year's wood to give new shoots. Tie down or peg the shoots, but do not use sticks, they spoil the effect of a good specimen. Judicious stopping and pegging down the shoots are all that is required to form specimens. After flowering keep the plants rather dry and cool for ten days or a fortnight, and, to hasten the production of new growths, keep rather close after cutting-in, and slightly syringe morning and evening to induce them to break freely and strongly. Some cut back immediately after flowering, keeping rather dry and cool for a fortnight, and then close and moist. I have tried both modes, and found them alike good.

Nothing is so hurtful to these plants as over-watering. The soil should be kept moist, but it must never become very dry nor very wet, for both extremes are equally destructive to the delicate fibres. Good drainage is of paramount importance.

Be very careful not to over-water in winter. After the flower-buds show, a gentle bedewing of the plants overhead early in the morning and afternoon will do good, but this should be done on bright days only, and weak liquid manure may also be given; it may be made from cowdung one year old, one peck to twenty gallons of water, a quart of soot being added.

In summer a cold pit is the best situation, and in winter a position in a dry and airy house with a temperature of from 40° to 45° from fire heat, with a rise of 10° or 15° from sun heat. They must have a position near the glass, and the light either from overhead or sideways should not be intercepted by other plants. They cannot have too much air, but cold frosty currents are to be excluded. Air, when the external atmosphere is frosty, may be given at the back of the house. A slight shade when making new growths is desirable, but in autumn, in order to have the wood well ripened, they require all the light possible.—G. ABBEY.

POINSETTIA PULCHERRIMA CULTURE.

I HAVE been much pleased to see the culture of the Poinsettia so ably discussed by your correspondent Mr. Lane, at page 100, and, so far as the dwarfing of the plants is concerned, I quite agree with him, but I question very much whether, by the means he describes, that fine glossy foliage can be secured which adds so much to their beauty. I am, besides, convinced that to procure large bracts the plants cannot be grown too strong, and this can only be secured by plenty of heat and humidity and the use of stimulants. As I before stated, it is essential that the plants should be placed in a situation where they will be well exposed to the light, and as close to the glass as possible; growing them strong is very different from drawing them upwards by keeping them in a shady position. The more vigorous the plants are the longer will be their continuance in bloom.

My flower-heads began to open in the first week in November, and I have now (February 12th), some in good condition on the same plants. I will here correct a statement which I made with regard to the measurement of my flower-heads. I said that they were from 14 to 16 inches across, but I am sorry that I made this statement by guess, for in a few days after I wrote a friend came to see them, and he measured one which was 17 inches across, and in another fortnight the same head was found to be 20 inches in diameter, and the largest of all fully 21 inches. The latter is hanging in the stove now. My house, perhaps, is peculiarly adapted for keeping the flowers. It is a low span-roofed structure running east and west, with a top ventilator opening from end to end, and I constantly keep a little air on night and day, so as to allow of the atmosphere continually circulating among the plants. I had each brought down and tied to some cross bars that traverse the house for support, each head being turned to face one way; the effect on entering the house was extremely fine.

For dinner-table decoration the Poinsettia has no rival; the way in which it is here managed for this purpose is as follows:—We have a round tin tray with a block in the centre for the feet of the epergne, and around this block is packed a quantity of moss so as to fill the tray, some of the greenest flakes being selected for the outside. This being done, and the whole made secure, the flower-heads are cut, and the ends of the portions of shoot attached are placed in the moss. The Poinsettias are interspersed with white Camellias, and a few delicate Fern fronds to prevent a formal appearance. The effect by candlelight of this arrangement is magnificent.

Another great advantage of the Poinsettia is that there is no flower to equal it in respect to the length of time which it will last in water if regularly attended to. By applying tepid water every day the heads will last fresh for a month, and I have even kept them quite fresh longer than that. It is strange that no attempt at improvement has been made by crossing the white and scarlet varieties. I am only sorry that the means at my command being limited, I have not scope for many of our neglected stove plants. I should read with much interest the practice of others who may have been successful in the cultivation of the Poinsettia.—CHARLES EDWARDS, Bristol.

PERIODS OF DROUGHT AT CARDINGTON.

It may be interesting to some of the readers of this Journal to know the periods of dry weather of fourteen days and upwards since 1845, in one of the midland counties, where the

monthly fall of rain is under 2 inches. I will also state the number of days in each year on which no rain fell, dates included.

From Jano 9th, 1846	....	to June 22nd, 1846	.....	being 14 days.
" Sept. 7th, 1846	.....	to Sept. 22nd, 1846	.....	" 16 "
" March 8th, 1847	.....	to March 22nd, 1847	.....	" 15 "
" Sept. 23rd, 1847	.....	to October 6th, 1847	.....	" 14 "
" April 30th, 1848	.....	to May 18th, 1848	.....	" 19 "
" July 4th, 1849	.....	to July 17th, 1849	.....	" 14 "
" Feb. 17th, 1850	.....	to March 3rd, 1850	.....	" 15 "
" March 6th, 1850	.....	to March 22nd, 1850	.....	" 18 "
" Sept. 5th, 1850	.....	to Sept. 19th, 1850	.....	" 15 "
" June 17th, 1851	.....	to July 1st, 1851	.....	" 15 "
" Sept. 6th, 1851	.....	to Sept. 23rd, 1851	.....	" 18 "
" March 3rd, 1852	.....	to March 29th, 1852	.....	" 27 "
" April 1st, 1852	.....	to April 17th, 1852	.....	" 17 "
" June 30th, 1852	.....	to July 13th, 1852	.....	" 14 "
" May 15th, 1853	.....	to May 28th, 1853	.....	" 14 "
" July 30th, 1853	.....	to August 16th, 1853	.....	" 18 "
" Feb. 24th, 1854	.....	to March 10th, 1854	.....	" 15 "
" March 28th, 1854	.....	to April 20th, 1854	.....	" 24 "
" August 25th, 1854	.....	to Sept. 12th, 1854	.....	" 19 "
" April 13th, 1855	.....	to May 3rd, 1855	.....	" 21 "
" Feb. 21st, 1856	.....	to March 16th, 1856	.....	" 25 "
" Sept. 8th, 1856	.....	to Sept. 21st, 1856	.....	" 14 "
" August 17th, 1857	.....	to Sept. 1st, 1857	.....	" 16 "
" Dec. 23rd, 1857	.....	to January 7th, 1858	.....	" 16 "
" March 18th, 1858	.....	to March 31st, 1858	.....	" 14 "
" June 19th, 1858	.....	to July 4th, 1858	.....	" 16 "
" Nov. 10th, 1858	.....	to November 25th, 1858	.....	" 16 "
" June 5th, 1859	.....	to June 19th, 1859	.....	" 15 "
" July 5th, 1859	.....	to July 18th, 1859	.....	" 14 "
" Nov. 10th, 1859	.....	to Nov. 26th, 1859	.....	" 17 "
" October 27th, 1860	.....	to November 10th, 1860	.....	" 15 "
" July 21st, 1862	.....	to August 6th, 1862	.....	" 17 "
" Feb. 5th, 1863	.....	to February 18th, 1863	.....	" 14 "
" March 21st, 1863	.....	to April 4th, 1863	.....	" 15 "
" July 4th, 1863	.....	to July 18th, 1863	.....	" 15 "
" April 18th, 1864	.....	to May 1st, 1864	.....	" 14 "
" Sept. 24th, 1864	.....	to October 19th, 1864	.....	" 26 "
" April 20th, 1865	.....	to May 4th, 1865	.....	" 15 "
" June 4th, 1865	.....	to June 23rd, 1865	.....	" 26 "
" August 30th, 1865	.....	to September 20th, 1865	.....	" 22 "
" Sept. 22nd, 1866	.....	to October 8th, 1866	.....	" 17 "

Only seven times during twenty years have the number of dry days exceeded twenty at one time, and two of these times were in 1865.

The following shows the number of days in each year on which no rain fell, from 1846 to 1865, inclusive:—

Year.	Days.	Year.	Days.	Year.	Days.
1846	.... 201	1853	.... 194	1860	.... 160
1847	.... 230	1854	.... 230	1861	.... 204
1848	.... 169	1855	.... 225	1862	.... 184
1849	.... 193	1856	.... 214	1863	.... 234
1850	.... 223	1857	.... 220	1864	.... 250
1851	.... 217	1858	.... 240	1865	.... 232
1852	.... 204	1859	.... 219		

From these figures it will be seen that it was in 1864 that there were the greatest number of days on which no rain fell; also in that year the least fall of rain took place, being 5.564 inches below the average of twenty years.

Cardington is situated about three miles from Bedford, one mile from the river Ouse, 12 feet above the level of the river, and 100 feet above the sea level. The weather is generally very dry in summer, and very damp in winter.—JOHN McLAREN, Gardener to S. C. Whitbread, Esq.

WEATHER WISDOM.

(Continued from page 108.)

The chief cause which tends to throw discredit on a barometer is the introduction on the scale of the words fair, rain, stormy, &c. It is not my present intention to consider why these words were introduced, but rather to point out the reasons why they ought to be disregarded by those whose object it is to study the barometer, and by its fluctuations to anticipate probable weather. I may here observe that in instruments made for the National Lifeboat Institution the words I have mentioned do not occur, as it was considered they did more harm than good. In their place, however, are inserted short practical hints, informing the observer on what occasions the barometer rises and falls, and what future weather may be expected from such variations, &c.

In the first place, the height at which a barometer is fixed above sea level is not always taken into account by observers. It has been explained on a former occasion (page 27), that the mercury does not stand so high when a barometer is taken to the summit as it does when observed at the foot of a hill, and, therefore, the inexperienced are placed in the following dilemma:—A man observes his glass (one I will suppose by a good maker), and he sees the mercury in the tube is level with the

word change on the scale (29.50). He then visits a friend who lives in a house situated at a much higher elevation than his own. Passing through the hall he sees a barometer reading considerably lower than his did. Perhaps he calls the attention of his friend to this fact; the person thus appealed to says his instrument is right, and accordingly the other thinks to himself, "Both cannot be right;" and yet both are right. What is change (29.50) at sea-level will become rain (29.00) about 500 feet higher than sea-level, because one-tenth of an inch must always be added to the readings of a barometer for every 100 feet the instrument is placed above sea-level. Your readers may say, "We do not know the height we are situated above sea-level, and how can we find out?" The answer to such an inquiry is to be found on the ordnance map, where the height at which different localities are situated above the sea-level is clearly marked out and defined.

From what has been just remarked it will be at once perceived that there is a disadvantage in the use of the words fair, change, &c. Why should an observer who lives some 100 feet above sea-level be obliged to remember that on his glass change does not mean change, but fair? Now, in barometers without these words, although of course an observer at a lower station would find a difference when comparing the readings of his instrument with those taken by one at a higher level, there would not be that discrepancy in the words just alluded to, and I apprehend that a person who has in his possession a barometer on which these words are omitted pays more attention to the rise and fall of the mercury, and makes his own deductions more accurately, than others who are misled by the words previously referred to.

Assuming in the next place that an observer knows the height at which he is situated above sea-level, and therefore in his readings of the barometer makes the proper allowance for such elevation, why is it that the words fair, &c., are liable to mislead him, and to become a stumbling block to his knowledge of weather? The reason is as follows:—A barometer is never to be judged by its readings at the moment of observation, when any one wishes to know the probable weather which may be expected at that time. The instrument, as a rule, is always beforehand, and does not tell present weather. Weather wisdom is attained by looking at the previous movements of the column, and accordingly if the mercury has risen to fair, but the rise has been very sudden, or the barometer has oscillated to or from that point for the last few days, heavy and unsettled weather may be expected. However, the bad weather will not be so long in duration with a high barometer as it would have been had the glass been very low for some days. On the other hand, the column steadily rising towards fair does show settled and fine weather, and in that case the words fair and set fair on the scale of an instrument at sea-level, or reduced by correction to that level, are really right. I would ask your readers, Is it not better to pay no attention to words which have a double signification, and do most undoubtedly mislead the inexperienced? Doubtless many persons know of instances where an umbrella is never taken out of a stand when the glass is above change, and what is the result?—very often a severe wetting; the barometer is blamed, but who, I ask, is really to blame? Again, has the science of weather taken deep root in a family where such remarks as the following are heard?—"My barometer is rising fast, and we shall have fine weather," when the present state of weather wisdom suggests the very opposite—viz., unsettled and changeable weather.—X., Surrey.

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE Anniversary Meeting of this Society was held on the 22nd of January, F. P. Pascoe, Esq., F.L.S., President, in the chair, when the appointment of the Council and Officers for the ensuing year took place, Sir John Lubbock, Bart., F.R.S., being elected President; Mr. Pascoe's term of office having expired. The other officers were re-elected.

The President announced that the Council's offer of prizes to be awarded to the authors of essays on economic Entomology, had produced three competitors, and that the Council had awarded one of the prizes, of the value of five guineas, for an Essay on Ailanthi culture, the author of which proved to be Dr. Wallace, of Colchester, and in which an elaborate account was given, from personal experience, of the Ailanthus Silk Moth (*Saturnia Cynthia*), the practicability of the cultivation of which, as well as of that of the Ailanthus tree itself in the most unpromising situations, was fully demonstrated. The President, before leaving the chair, read an address on the progress of

entomology during the past year, which, as well as Dr. Wallace memoir, was ordered to be printed for distribution among the members.

The meeting held on the 5th of February was presided over by Sir John Lubbock, the newly-elected President, who returned thanks for his election, and nominated Messrs. Wilson Saunders, Pascoe, and Westwood, Vice-Presidents for the ensuing year. Amongst the numerous donations to the Society's library, were the publications of the Entomological Societies of New South Wales (Part 4), and of Stettin. The prize awarded by the Council to Dr. Wallace, for his memoir on Ailanthi culture, was presented to that gentleman, who, in returning thanks, stated that the cultivation both of the Ailanthus tree and of the Silk Moth itself, appeared to be even more flourishing in this country than in France, where it has now become an object of much importance. The President announced that the Council had determined to renew their offer of two prizes of five guineas each, for memoirs of sufficient merit, and drawn up from personal observation, on the anatomy, economy, or habits of any insect, or group of insects, especially serviceable or obnoxious to mankind. The essays to be sent to the Secretary on or before the 30th of November, 1866. M. Guérin Meneville, of Paris; and M. Bohemann, of Stockholm, were elected honorary members of the Society.

Mr. McLachlan exhibited, on behalf of Mr. Dorville, *Sterria sacchararia*, captured near Exeter, and a number of remarkable varieties of British species of Butterflies and Moths, including a gigantic *Cynthia Cardui*, or Painted-lady Butterfly, *Hipparchia Thionus*, with an additional ocellus, *Agrotis Segetum*, nearly black, &c.

Mr. S. Stevens exhibited the male of *Papilio Semperi*, remarkable as being the only known Lepidopterous insect with a brilliant scarlet body and jet black wings. It is a native of Mindanao in the Philippine Islands.

Professor Westwood exhibited a pair of the Dog-tick, which he had kept without food in a glass tube for twelve months, having been a portion of the specimens presented by Major Cox to the Society in February, 1865; shortly afterwards a number of young ones were observed in the tube, which, however, soon died, but the tube was now again thronged with young in the hexapod state, but the female was no longer alive. He also exhibited the interesting larva of *Tipula replicata*, found in damp moss by Mr. Edwin Brown, of Burton, remarkable for the strong analogy which it exhibits in the long branchial filaments upon the sides and back of its body, with the aquatic larvæ of the Neuropterous genus *Sialis*, and the Lepidopterous genus *Hydrocampa*.

Mr. Wilson Saunders exhibited a very extensive and beautiful series of Butterflies belonging to the genus *Heliconia*, which had been captured in a single locality in Cayenne, and which varied to so great a degree, both in their markings and colours, as to have been regarded as a number of distinct species, but which Mr. Saunders considered were only varieties of a single species, *Heliconia Melpomene*. This exhibition led to an extensive discussion on the geographical range of the species, and on the effects of situation on the modification of the specific characters of the insect, in which Mr. Bates stated that he had taken nearly all these varieties on the Amazon, and that he was induced to consider, that in certain localities the species appeared to be constant in its colours and markings, but that in the hilly districts of Guiana the species was subject to endless variation, whilst elsewhere it appeared to resolve itself into three distinct variations, which had been named *H. Melpomene*, *Helixiope*, and *Vesta*. He had succeeded in breeding *H. Erato*, and had found its caterpillars to be gregarious.

The President exhibited magnified coloured drawings of two curious larvæ of unknown forms.

Mr. F. Smith communicated a note from Mr. Henry Doubleday, in which the doubts expressed by the former at a previous meeting, as to the origin of the tapping noise often heard in old houses, alleged to be made by the Death Watch, *Anobium striatum*, were completely disproved, Mr. Doubleday having repeatedly observed that insect in the act of making the noise in question, by striking its head against the surface upon which it was standing. He had kept the insect in confinement and could make it reply by tapping any hard material with a pencil.

Mr. Wallace mentioned, that in repairing an old church at Colchester, the Oak beams on the south side of the roof were chiefly attacked by the Anobium.

Mr. Stainton announced the death of Senator Van Hyden, one of the oldest and best entomologists of Germany, and the arrival of Mr. Wollaston, on an entomological excursion to the Cape de Verd Islands.

Memoirs were read by Mr. Bates on new Phytobagous Beetles; and by Mr. Hewitson on new species of Hesperidan Butterflies.

NOTES ON THE SPECIES OF HELLEBORUS.

(Continued from page 145.)

HELLEBORUS OLYMPICUS, Lindley (The Olympic Hellebore).—Syn. *H. guttatus*, of gardens; *H. colchicus*, of gardens; *H. olympicus albus*, of gardens; *H. abchasicus*, Fischer. The radical leaves of this species are palmate, with the segments oblong-linear and toothed on the margins, except near the base, which is entire. The floral leaves are large, stalkless,

and sharply serrated on the upper half. The flowers are cup-shaped, greenish-white, with the sepals bluntly egg-shaped; persistent, and produced on forked flower-stems a foot high, and which, as well as the leafstalks, are beautifully mottled with reddish brown spots.

This kind is a native of the Bithynian Olympus, and flowers from February to April.

Dr. Lindley, who first described this species, gives the following as its distinguishing characters from the other species of the genus—viz., "From *Helleborus orientalis* it differs in having palmate not pedate radical leaves, which are less acute and more finely toothed; in its two-flowered stems, and in its smaller flowers, which are pale green and not coloured like flowers. From *Helleborus niger* it differs in its leafy scape being much longer than the leaves, which are palmate and not pedate; in the form of its leaflets, which are serrated almost to the base, and want the almost rhombic form of that species. From *Helleborus odorus* it differs in its white and earlier flowers, thinner and smaller leaves, and an entire want of the coarse prominent ribs that stiffen the foliage of that plant. From *Helleborus purpurascens* it differs in its larger floral leaves and finely toothed leaves; from *Helleborus atrorubens*, to which it is nearest, in its much larger pallid green flowers, rounder sepals, and broader, palmate, not trifid, floral leaves; the leaves, moreover, are much more leathery than in that species."

HELLEBORUS ODORUS, *Waldstein* (The Sweet-scented Hellebore).—Syn. *H. odoratus*, of *gardens*. The root-leaves of this species are palmate, pubescent on the under surface when young, with the segments oblong, quite entire at the base, but serrated towards the apex. The flower-stems are about a foot high, forked near the top, and bearing large, solitary, sweet-scented, greenish-white flowers, the sepals of which are ovate-oblong and permanent. This kind is a native of Hungary, and flowers in February and March.

HELLEBORUS PURPURASCENS, *Waldstein* (The Purplish-flowered Hellebore).—Syn. *H. purpureus*, of *gardens*. This species has the root-leaves palmate, with the segments wedge-shaped at the base, pubescent on the under side, and from three to five lobed at the apex. The floral leaves are nearly stalkless, and the stems two-flowered, with the sepals roundish, permanent, and of a purplish colour when young.

This kind grows about a foot high, and flowers in March and April. It is a native of Hungary, Podolia, and Volhynia.

HELLEBORUS ATRORUBENS, *Waldstein* (The Dark-purple Hellebore).—The radical leaves of this fine species are very smooth, pedate, shining, and paler underneath, with the stem-leaves nearly sessile and palmate. The flower-stems are somewhat angular, bifidly-branched, and about 18 inches high. Flowers, when young, dark purple, particularly towards the edges of the sepals, which are roundish and permanent.

This species is found plentifully in woods and bushy places in Hungary. There it flowers in February and March.

HELLEBORUS MULTIFIDUS, *Visiani* (The Multifid-leaved Hellebore).—Syn. *H. Bocconi*, *Tenore*. The root-leaves of this kind have long footstalks, are very large, leathery, smooth, and pedate-parted, with the segments narrow, lanceolate, taper-pointed, sharply-serrated, very veiny, dichotomously-lobed, and wedged-shaped at the base. The flower-stems are tall, angular, bifid, and with broad, ovate, greenish floral leaves, palmate-parted, and almost sessile. Flowers large, cup-shaped, with broad ovate sepals, of a light greenish colour.

This species, according to Professor Visiani, resembles *Helleborus dumetorum*, but is larger in size and flowers more freely.

It is a native of the Apennines of Etruria and Dalmatia, where it grows from 1½ to 2 feet high, and flowers from February to April.

HELLEBORUS DUMETORUM, *Waldstein* (The Thicket Hellebore).—Syn. *H. laxus*, of *gardens*. The radical or root-leaves of the Thicket Hellebore are pedate, very smooth, and spreading, while the stem-leaves are almost sessile and palmate. The flower-stems grow about a foot high, are round, bifidly-branched, and bear large, cup-shaped, solitary flowers, with round, greenish-white sepals.

This species is a native of Hungary, and flowers in March and April.

HELLEBORUS VIRIDIS, *Linnaeus* (The Green-flowered Hellebore).—The root-leaves of the Green-flowered Hellebore are very smooth, pedate, and on long footstalks, while the stem ones are almost stalkless and palmate. The flower-stems are 18 inches high, forked, and bear solitary cup-shaped flowers

on the ends of the peduncles. The sepals are roundish ovate, and bright green.

This kind is a native of many parts of Europe, and is found wild in woods and thickets, in chalky soil, in England, where it flowers in April and May.

The roots of the Green Hellebore are frequently substituted for those of the Black Hellebore of the East, and are said to possess nearly the same medicinal qualities.

HELLEBORUS LIVIDUS, *Aiton* (The Livid or Corsican Hellebore).—Syn. *H. argutifolius*, *Visiani*; *H. trifolius*, *Linnaeus*; *H. corsica*, of *gardens*; *H. trifoliatius*, of *gardens*. This is a very singular evergreen species, with a many-flowered leafy stem about a foot high. The leaves are ternate, leathery, very smooth, glaucous beneath, and pale green above; the segments of the leaf are ovate-lanceolate, irregularly incised, with large, wide, sharp-pointed serratures along the margins. The flowers are cup-shaped, light green, and a little larger than those of the *Fœtid Hellebore*.

The Livid-flowered Hellebore is a native of Corsica and the Balearic Islands, particularly of Majorca, and flowers from January to May.

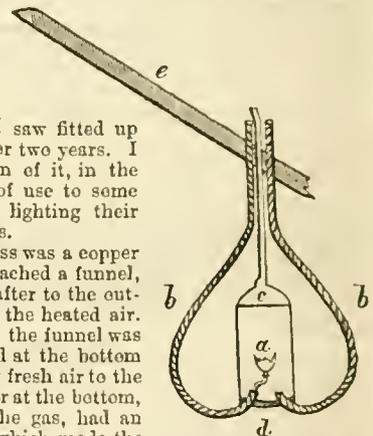
HELLEBORUS FÆTIDUS *Linnaeus* (The Bear's-foot Hellebore).—This is a well-known evergreen herbaceous plant, with very smooth, deep-green leaves, having oblong-linear segments, and a many-flowered leafy stem from 1 to 2 feet high.

The *Fœtid Hellebore* is found wild in many parts of Europe, and is a native of England, where it is common in shady places in the chalky counties. The whole plant is *fœtid*, *acid*, and a violent cathartic, especially the green leaves; but these, when dried, are sometimes given as a domestic medicine to destroy worms. It flowers in March and April, and produces a very pleasing effect in shady places during the winter months.—GEORGE GORDON, A.L.S.

GAS LIGHTING A CONSERVATORY.

I HAVE lately seen some inquiries in the Journal as to the best means of preserving plants in conservatories from the effects of gas; but none of your correspondents mentions anything like the following, which I saw fitted up and frequently used for two years. I send you a description of it, in the hope that it may be of use to some who are thinking of lighting their conservatories with gas.

On the top of the glass was a copper plate, to which was attached a funnel, passing through the rafter to the outside, for the escape of the heated air. A tube at each side of the funnel was brought in and entered at the bottom of the glass, to supply fresh air to the flame. The small door at the bottom, to allow of lighting the gas, had an indian-rubber flange, which made the whole perfectly air-tight. I may mention that the gas-pipe was run up under the rafter, where it entered one of the cold-air tubes, and was brought down it into the glass. The tubes were bronzed, and the outer two twisted in imitation of a rope. The whole had a very ornamental appearance, and, as it was air-tight, of course had no effect whatever on the plants.—A. A.



a. Glass.
b. Air-tubes.
c. Funnel.
d. Door.
e. Rafter.

WORK FOR THE WEEK.

KITCHEN GARDEN.

A DISTINGUISHING feature in this department is its uniformity—straight lines and angles meet the eye in every direction; and whatever may be said in favour of a departure from this rule in the disposition of pleasure grounds, we cannot deny that straight lines are preferable for the kitchen garden. Straight walks, with the edgings neatly kept, seed-beds of a uniform width, with the seeds drilled in at equal distances, the disposition of plants in rows, trees all trained with the greatest exactness, together with continual srrfsee-stirring, and the consequent absence of unsightly weeds, are amongst the dis-

tinguishing characteristics of a well-kept kitchen garden. Attend to the sowing of main crops as directed in previous calendars, and keep up successional sowings of vegetables to come in, according to the state of the weather and the probable demand. *Asparagus*, if not done in the autumn, dress the beds with light decomposed manure, and fork them lightly over, taking care not to injure the crowns. Many persons apply salt at this time in the proportion of about a pound to the square yard; but it is more advisable to defer this until the cutting is over, and the plants are in a growing state, because then they are in the best condition to receive the benefit of the application, and the crowns are greatly strengthened for the following season. The beds intended for new plantations to be frequently turned, to be in readiness for planting the young roots as soon as they have shot 2 or 3 inches. *Artichokes* (*Globe*), should now be dressed, superfluous shoots removed, and fresh plantations made if required; as this is generally a permanent crop, the ground should be well prepared by deep trenching and a plentiful application of rich manure. *Cucumbers*, keep the lights free from dirt, wash them inside and out if there are lights to shift them, keep the heat of the beds from 75° to 80°, but particularly guard against a violent bottom heat. *Cauliflowers*, give due attention to the plants under hand-lights, by surface-stirring and giving air on all suitable occasions, tilt the glasses on the side away from the wind in cold searching weather, and remove them entirely on the first occurrence of genial showers; do not let plants in frames, or the young seedlings which are now pricked out, suffer from exposure to the biting east and north-east winds so prevalent at this season of the year. *Parsley*, a good sowing should now be made; clean and loosen the soil between the rows sown last season. *Potatoes*, the main early crops should be put in as soon as the weather will permit. *Sea-kale*, cover up a succession. Fermenting materials may soon be dispensed with for this purpose, as it will merely require to be covered for the purpose of blanching.

FRUIT GARDEN.

With respect to the covering of wall fruit trees, we would advise canvas curtains, so fixed as to be removeable at pleasure; their expense is generally the great drawback, but against this should be placed a crop, or rather many crops, of fruit, as the canvas will, with care, last for years. They will also serve to protect Plums, Cherries, &c., and retard ripening, which is a matter of great importance where families do not visit their country seats till the autumn. Whatever covering may be used for protecting the blossom of wall trees, the ends should be secured so as to prevent a current of cold air passing between the wall and protecting material, as, in this case, the destruction of the bloom is almost certain. If it is necessary to dig among fruit trees, let it be done as shallow as possible, so as not to injure the roots. Weed Strawberry plants before the weeds begin to grow much. Look over the fruit in the fruit-room; if it is damp, open the windows a few hours on a fine day.

FLOWER GARDEN.

If the plants with which the beds in the flower garden are to be planted this season are not decided upon, the sooner this is done the better. Proceed with the planting out of biennials of all kinds, and prepare a piece of ground for a sowing of *Anemone coronaria*, *hortensis*, and *vitifolia*. *Anemones* delight in a strong rich soil, and a rather shady situation in summer. Sow the seed, after it has been well rubbed in sand, in shallow drills 9 inches apart, and cover with rich soil. A sowing of Ten-week Stocks to be made on a warm sunny border, cover with litter or mats at night until the seeds begin to vegetate. Sow likewise a general assortment of hardy annuals, such as *Clarkias*, *Collinsias*, *Leptosiphons*, *Nemophilas*, &c. Herbaceous borders, if not dressed over in the autumn, must be attended to immediately, and either fresh compost or manure must be added to the plants that are weakly.

GREENHOUSE AND CONSERVATORY.

Potting will now be a matter of daily occurrence, and on the mode in which this is performed will depend the future success of the plant. We need say little here about the propriety of using fibrous soil or about thorough drainage, these matters are tolerably well known; but a few words to the amateur as to the best mode of watering newly potted plants in general may be acceptable. Let it be a rule, then, never to water a fresh-potted plant. The soil for potting should be neither wet nor dry, one is as great an evil as the other; it should of the two incline to dryness, and should be pressed tolerably firm.

The watering at first should not be performed in order to settle the soil—this means shutting out the atmosphere, but merely with the intention of preventing the soil from becoming any drier. Hard balls should be soaked in water a day previous to shifting. The families of *Camellia*, *Acacia*, *Cytisus*, *Rhododendron*, *Eutaxia*, *Citrus*, *Epacris*, *Correa*, *Azalea*, and last but not least the *Rose*, will be a blaze of beauty where plant-growing is well attended to. They will now require abundance of water. Dispense with fire heat in the conservatory as much as possible, and admit air on all favourable occasions. On still nights the house may be damped and the syringe used; and as the plants exhibit vigour atmospheric moisture may be increased generally. In the greenhouse continue the necessary operations of shifting, training, and the general arrangement of the plants. The employment of soil containing a considerable portion of decomposed vegetable fibre must obviously be suitable to dwarf-growing plants, the natural habit of which leads us to the supposition that such soil existing on the surface must form, from its being readily available to them, their congenial and natural food.

STOVE.

Attend to the disrooting and pruning back of *Justicias*, *Vincas*, *Clerodendrons*, *Eranthemums*, *Geissomerias*, *Plumbagos*, *Poinsettias*, *Erythrinus*, &c., at least those exhausted by flowering, or a few for early work. Orchids are now swelling fast; and many of the blocks and baskets of *Stanhopeas*, *Gongoras*, *Dendrobiums*, &c., will require to be syringed about twice a-week. Let this be done early on sunny mornings, and give air freely for a couple of hours, for fear of moisture lodging amongst the huds. Terrestrial Orchids in general will do better in loamy turf and leaf mould (not too much decayed), blended with the lumps of peat. Renew moss on blocks forthwith.

PITS AND FRAMES.

Here the work needs no pointing out. The means of providing room after the plants are potted is the greatest difficulty in most gardens. Calico dressed with Whitney's composition at the cost of 5*d.* per yard will answer as a protective material after plants are first potted off. Choice annuals, such as *Brachycome iberidifolia*, *Viscaria oculata*, *Mesembryanthemum tricolor*, *Portulacas*, *Clintonias*, and the like, should always be potted off as soon as they are sufficiently large to handle, and afterwards be placed in a warm moist atmosphere, with plenty of air in mild weather, until they are properly established. Sow in a brisk heat *Martynia fragrans* and *diandra*, the different varieties of *Thunbergias* and *Ipomaeas*, *Convolvulus major* and minor, and, where they are admired, the common yellow and other *Lupines*.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

As yet little has been done in the open ground except some trenching. Will plant out and sow *Peas* and *Beans* the first favourable opportunity. Planted a row of Tom Thumb Pea—nice stubby plants—in front of the latest orchard-house; will also plant a row of more forward ones, and some of *Dillistone's* Early in the earlier orchard-house, and we set a row in 10-inch pots on the border in front of the wall of that house, removing them from the Peach-house where they stood on a shelf extemporised by placing three iron rods, covered with moss, on the top of pots to bring them near enough the glass. The Peas were showing the first tendency to draw, and the moving of them will keep them stubby, and bring them, with more light, sooner into full bloom. This shelf was again filled with Dwarf Kidney Beans, transferred without breaking the ball, from 40-sized pots into 16's, and the soil previously mellowed by standing two or three days in a warm place. It is hardly right to say that the balls in these small pots were untouched, as the fingers were inserted a little along the outside to disentangle the fibres. The only advantage of such transplanting is that room is husbanded, but at the expense of labour; and in all such transplanting and repotting at this season much of future success and freedom from insects depend on not chilling the young roots with cold soil.

With rats and mice there has been great difficulty in keeping Peas and Beans, even under protection, and in these cold, frosty mornings the garden was so like a pheasantry that not a Pea would have been left if not securely netted. When planted out 3 or 4 inches in height and staked at once, even pheasants and partridges seldom meddle much with them, and after the

first crops go on they do not meddle much with the later crops. Brussels Sprouts and Broccoli have been considerably pecked by pheasants within the last few weeks. Where *game* is made the principal object near gardens, there will be no fair chance for the garden unless pretty well netted. Thousands and thousands of small birds are encouraged by the food put down for the pheasants, and these, with mice and rats encouraged by the same means, will be sure to visit the garden whenever they are on short commons. With the exception of the matchless farm-stealing at Luton Hoo, there is scarcely the attempt in this neighbourhood to keep stacks of grain from the depredations of vermin. There is something very soothing and refreshing to the spirit in noticing the pretty spring flowers as they peep out in the hedge-banks round corn fields; but the horrid scent from a corn stack too often scatters to the winds everything approaching poetry and sentimentality. Derided as such feelings may be by the mere utilitarian, life itself would be a hard, miserable, dried-up affair without a dash of the imaginative and the poetical. Without the sentimental, the natural, and the beautiful connected with gardening, who would undergo the hard work with head and hands, and the continuous care, and yet continuous disappointments and want of appreciation, which the gardener often experiences? Within the last three months we have had a number of letters urging us to take up the game question as connected with gardening; but what would be the use of it? Why do those who suffer most not tell where the shoe pinches? It is a matter entirely for private statement or individual representation. When a gentleman sees his vegetables stripped, and his early Peas cleared from end to end of a row by game, it requires no great amount of discernment to see that what the game eat and destroy cannot yield a produce to appear at his table. The complaint of the gardener is that no allowance is made for such depredators, and that he is permitted to purchase neither wire nor other netting to keep them away. This we fear in many cases is too true; but in time the evil will bring its own remedy. The whole subject is more fitted for private expostulation than for public comment; but we hesitate not to say this much, that when a garden is turned into a game preserve it will be rather difficult to make it a preserve for anything else.

Brought home some tree leaves, which will enable us to plant a lot of Potatoes in an earth-pit, and sow Radishes, &c., between the rows. Radishes from the Carrot-bed have been good for some time past. Will clear out an Asparagus-bed under glass, and sow with Turnips and White Turnip-rooted Radishes, as the latter when young come in well for cutting up. Potatoes in pots are coming on nicely, which is so far good, as we are behind with those in beds. Took up a lot of Jerusalem Artichokes. For soups they may remain for years on the same ground, but for a dish they are best planted every year, the same as Potatoes.

Sea-kale.—Turned out the Sea-kale that had been forced, into an open shed, packed it with dry soil, and sprinkled a little litter over the crowns, and will plant again when the crowns are moving, and are thus hardened off. Pieces of roots, obtained from trenching the ground whence the roots to be forced were taken, were cut into pieces from 6 inches in length, and packed in a similar way, and they plant best when the buds are beginning to appear like small pin-heads at the upper end, which is left just above the surface. These, though not our usual plan, we will replant in the same ground from which they were taken, after trenching, enriching with hotbed dung, and making it light with burnt clay and rubbish. Took up some more Sea-kale, and put it in the Mushroom-house; this, we hope, will be about the last if the weather become mild. Covered some rows in the open ground with pots, and over them a little litter, just to keep the pots from frost, and in a week or two will cover more. Common six or eight-inch pots will do for this purpose as, for a number of years, we have preferred growing the plants in rows, instead of in bunches to suit large pots; the latter plan being, perhaps, the best where large pots are used for covering when forcing. The lifting the roots is by far the most economical plan as respects material. When we had not a Mushroom-house we used to make a cartload of hot tree leaves, with a bottomless box and a lid placed over it, and covered with litter, produce more cutting than we could have obtained from some waggonsloads of fermenting material placed over the roots out of doors. Then the kale could always be examined easily and cut clean; and before it was drawn so long as to resemble whip-lashes. Nice stiff heads from 5 to 7 inches in length are what we like to see, and as white as possible.

Asparagus.—Unless particularly wanted, we shall take up no more roots to force this season, as for several years we have taken up more than the usual quantity. Where fermenting material can be had, one of the best plans after this time is to have beds surrounded with open brickwork, so as to force them from linings every other year—that is, grow a bed one season without cutting any, and the next season cut all as it comes, until Asparagus may be had from the open ground. The summer growth, and then the next season's growth uncut, if the bed is well enriched at the surface, and manure waterings, with a dusting of salt, given in summer, ought to make the cutting good every alternate year. Even when a bed is taken up to force, if it can be spared the previous spring without cutting from it, the roots will be in better order for forcing in winter. When we used to have more fermenting material, we had some narrow beds, with a deepish trench between them, and the trench was filled with leaves and warm dung, and the beds were roughly covered with some old sashes, resting on pins or pots. It was necessary to top-dress such beds when gathered from, and remove the dung from the trenches to prevent the roots running too much in it, which would have injured the crowns, when the trenches were deepened in spring, for accelerating the crop. All such methods may be tried for forwarding crops, but for forcing early nothing beats taking the roots up and packing them in a bed above a mild heat from fermenting material. In that case, of course, the roots are fit only for the rubbish-heap, when all the heads or shoots are gathered.

Mushrooms.—Spawned a few yards of a bed, being short of materials to make it larger. The first pieces in the Mushroom-house are now over, the last bearing heavily. These shallow beds seldom continue to produce very long. We still obtain a few Mushrooms now and then from the open shed, where the bed is covered with rough hay and litter. The dung from the first beds in the shed, being nice and dry, has come in for mixing with fibry loam for Kidney Beans in pots, &c. Old Mushroom-dung, when exhausted for Mushrooms, comes in for mixing with soil for many purposes in potting. Besides the enriching material still left, it keeps the soil healthy and open. For top-dressing vegetables and fruits it is also useful, and when flossy and rough it greatly lessens evaporation from the surface.

Planted a frame with strong Cucumber plants, and arranged vigorous plants in a pit; also removed from a pit to a frame a lot of Melon plants to keep them growing on in pots, as we can as yet find no room for them where heat can be applied to suit them. Picked out lots of Lettuces, Cauliflowers, &c., where a little protection can be given them, to be afterwards transplanted into the open ground when larger and stronger plants. Our winter-protected Lettuces are now nearly over, and therefore will lift with good balls some of the strongest plants that have stood the winter, and plant either in open spaces in the orchard-house, or between rows of Potatoes under glass.

FRUIT GARDEN.

Pruned, tied, and nailed when suitable; thinned, topped, and secured Raspberry canes. We are afraid to give a final pruning to Gooseberries and Currants until we see how the birds leave the bushes.

Orchard-house.—The buds in the orchard-house are now swelling, and a number showing the pink colour. On Wednesday, and on similar bright sunny days, throw water whitened with whitening over the glass, just to spatter it a little and prevent the sun heating the back wall so much. If the buds can be kept from opening for a few days longer they will be all the safer if a sharp frost come. We do not expect that we shall have it very severe, and therefore we have removed all the stable and litter that covered the pots of fruit trees in the house, and forked the surface soil for 2 or 3 inches deep, which enabled us to see where it was driest. Placed a surface-dressing of hot dung all over, and watered when necessary, having watered new in the course of three weeks two-thirds of the ground monopolised by the roots. After watering threw a surfacing of nice fibrous loam over all, which will give a clean neat appearance for the summer. Kept the house rather close for a day or two after placing in it Peas in pots from the Peach-house.

Filled four lights of a frame with Strawberry-pots, with just the mildest heat from some tree leaves beneath them. We have been obliged to move such pots several times and to several places during the season, owing to mice, and in some cases rats, attacking the buds, eating them right through. Watered the pots in Peach-house and elsewhere in bloom, setting, and swelling, with manure water and clear water

alternately. General temperature of Peach-house from 48° to 55° at night, and from 55° to 60° in dull cold days, and from 75° to 80° in sunny days, the extra heat coming chiefly from the sun. Sprinkled the trees after a sunny day, and shut up early. There is little danger of drawing up weakly from sun heat. Stopped Fig-shoots in Fig-pit, have not yet thinned them or pruned finally. Thinned early Grapes in pit, and regulated others. Pines showing fruit should have a nice moist bottom heat, and a somewhat dry atmosphere until the flowering is over. A bright sun is the great means of making all right. The less shade given to any growing plant the better, unless it is a plant rejoicing in shade or subdued light.

Melons.—This, on the whole, is fine weather for early Melons where they can be put out in good heat, in pots, pits, or frames. Of all plans for producing sound heavy Melons—that is, heavy like lead for their size, growing a plant in a pot, say 14 or 16 inches in size, is the best. The curbing of the roots, and the more thorough elaboration of the sap in the leaves, are the only reasons we can think of for such a result. The next best mode is planting out in a bed from 2 to 3 feet in width, and at least 20 inches in depth, with a space for the stems and leaves of at least three times that surface. Minor details of training and pruning, or rather disbudding, have frequently been alluded to. A very suitable temperature for Melons is, for bottom heat from 80° to 85°, top heat at night averaging 60°, in dull days from 60° to 65° and 70°, and in sunny days, with air given early, from 70° to 85°. It is only in sudden changes from dull weather to bright that shading will be required, and it should not remain a moment longer than it is needed. All shading weakens the plant.

ORNAMENTAL DEPARTMENT.

As weather was suitable wheeled manure on flower-beds—that is to say, what little we could spare. Dug and ridged beds intended for bedding plants, and threw the rotten manure chiefly on the top of the ridges, &c. Swept walks after frost and snow, rolled the lawns, and pruned evergreen and deciduous shrubs.

Spreading the manure on the surface of flower-beds and allowing it to be there for some time before it is dug in, or rather pointed in, has been followed by some other gardeners, some of whom are blamed for doing so as a wasteful practice, and they want to know what can be said in its defence. Well, we consider that this definite plan is the best for securing a definite purpose. If we wanted a heavy crop of Turnips, huge tubers, and huge leaves, then as soon as the manure was placed on the ground we would wish it to be covered up so that the atmosphere should not take away its enriching virtues; but in most cases as respects these flower-beds, it is not large or very luxuriant foliage so much as abundance of flowers and a good start at first that are chiefly aimed at, and, therefore, we seek to attain that object by a little manure, well aired and sweetened by exposure to sun and air before it is pointed in just below the surface, that the roots may take hold of it at once and give the plants a start, when they will look after themselves afterwards and never become so luxuriant in foliage as they would do with manure 6 or more inches below the surface. Did we put even the same manure on Carrot ground, we should prefer that to be chiefly placed from 12 to 18 inches below the surface. The same material may, therefore, be used differently, according to the object we have in view.

In cold pits, after the frosts and snows. Pansies, Stocks, Wallflowers, Carnations, Auriculas, and Calceolarias, require air to be given judiciously, and water with still greater care, as until the weather is more settled damping will be the great evil to be guarded against.

This season, for bringing on bulbs, Pinks, Roses, and hardy shrubs, Chinese Azaleas, &c., but little extra moisture was wanted in the atmosphere of the forcing-pit, except in clear, frosty days. The Crocuses we grew in pots this season, for internal decoration, did not succeed so well as usual, though many were very beautiful, and owing, we presume, to the extra wet, they have not come nearly up to the usual mark out of doors in many places. As a whole, evaporating-pans in heated houses have been less necessary than usual.

House Decoration with Plants.—In many mansions at this season will be found bulbs and forced flowers stuck all over the rooms in common red pots. On the principle of fitness nothing can well be more out of place. There can be nothing like harmony or congruity between elegant furniture, mirrors, &c., and a garden pot, even if it should stand in a china saucer instead of the common red earthenware flat. To remedy this the pots are sometimes covered with moss tied on them, or ornamental

paper, such as that representing various kinds of marble, is neatly fastened to the pots. All these plans fail of their object, because the artifice is so easily seen through. Though the truly refined and artistic will ever be in unison, it is always as well that the artistic should not be combined with the tawdry and make-believe. Besides, many plants, as Hyacinths, Tulips, Crocuses, Deutzias, Ferns, &c., appear much better in a group than in single detached specimens. A vase, a box, or a basket, but so arranged that no water shall escape, and in appearance more in character with the walls and furniture of the room, would yield a degree of harmonious interest, when neatly filled, that single plants in clumsy pots could never inspire. Zinc or sheet iron, nicely painted, will be useful and convenient for such purposes. In most gardens there are some nice terra cotta vases in the garden in summer, that are either empty or brought somewhere so as to be protected from snow and frost in winter. These, in winter, might be used with good effect in the mansion instead of pots. All that is required is to cork up securely the drainage-pipe, put a good layer of moss in the bottom, and either pack full with plants in their pots, or take the plants out of the pots and pack with a little soil, and then cover all over with neat moss, dotted with little bunches of Violets. Beside such a neatly-arranged vase, plants in pots would seem nowhere. When it becomes more common to have fruit trees on dining and side tables we hope it will also be common to have nice vases suitable for receiving and concealing the common pot, which will ever make a sorry figure by the side of fine crystal and silver, not to say gold, plate.

Went on with potting, propagating, and moving and regulating plants as detailed in several weeks lately. All beginners who have much of that work to do should take a little extra pains to have their soil well aired, sweetened, and heated before using it. As frequently stated, many a plant dwindles, and is ere long pretty well eaten up with insects, because when growing in a rather warm room or house the poor tender roots are surrounded with cold clammy soil. Another prevalent error is taking a plant from a hot place to pot it, and leaving it for an hour in a cold place before taking it back. Such little matters often make all the difference between success and disappointment.—R. F.

COVENT GARDEN MARKET.—MARCH 10.

THE supply continues good, a steady trade is being done, and quotations remain the same as in our last report. Late Grapes may still be had, and a few new Hamburgs have made their appearance.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples.....	½	sieve	2	6 to 4	Melons.....	each	3	0 to 5	0
Apricots.....	doz.		0	0 0 0	Nectarines.....	doz.	0	0 0 0	
Cherries.....	lb.	0	0 0 0	Oranges.....	100	4	0 10	0	
Chestnuts.....	bush.	8	0 16	0	0	0	0	0	
Currants, Red ½ sieve		0	0 0 0	Pears (kitchen) ..	doz.	4	0 8	0	
Black.....	do.	0	0 0 0	dessert.....	doz.	4	0 8	0	
Figs.....	doz.	0	0 0 0	Pine Apples.....	lb.	3	0 12	0	
Filberts.....	lb.	0	0 0 0	Plums.....	½	sieve	0	0 0	
Cobs.....	100lbs.	0	0 160	0	0	0	0	0	
Gooseberries. ½ sieve		0	0 0 0	Quinces.....	½	sieve	0	0 0	
Grapes, Hothouse..	lb.	10	0 18	0	0	0	0	0	
Lemons.....	100	6	0 10	0	Raspberries.....	lb.	0	0 0	
				0	Strawberries.....	oz.	5	0 7	0
				0	Walnuts.....	bush.	14	0 20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes.....	each	0	6 to 0	0	Leeks.....	bunch	0	3 to 0	0
Asparagus.....	bundle	6	0 12	0	0	0	0	0	
Beans, Broad.....	bushel	0	0 0 0	Mushrooms.....	pot	1	6	2 6	
Kidney.....	100	3	0 4	0	Must.& Cress, punnet		0	2 0	0
Beet, Red.....	doz.	2	0 3	0	Onions.....	bushel	3	0 5	0
Broccoli.....	bundle	1	0 2	0	Parsley.....	sieve	2	0 3	0
Brus. Sprouts. ½ sieve		2	0 3	0	Parsnips.....	doz.	0	9 1 6	
Cabbage.....	doz.	1	0 2	0	Peas.....	quart	20	0 0	0
Capsicum.....	100	0	0 0	0	Potatoes.....	bushel	2	6 4	0
Carrots.....	bunch	0	4 0	8	Kidney.....	do.	3	0 4	0
Cauliflower.....	doz.	2	0 6	0	Radishes.....	doz. hands	0	6 1	0
Celery.....	bundle	2	0 3	0	Rhubarb.....	bundle	0	9 1	0
Cucumbers.....	each	2	0 4	0	Savoys.....	doz.	1	0 2	0
pickling.....	doz.	0	0 0	0	Sea-kale.....	basket	2	0 2	6
Endive.....	score	1	0 2	0	Shallots.....	lb.	0	8 0	0
Fennel.....	bunch	0	3 0	0	Spinach.....	bushel	5	0 0	0
Garlic.....	lb.	2	0 0	0	Tomatoes.....	½	sieve	0	0 0
Herbs.....	bunch	0	3 0	0	Turnips.....	bunch	0	4 0	6
Horseradish.....	bundle	2	6 4	0	Vegetable Marrows	dz.	0	0 0	0

TRADE CATALOGUES RECEIVED.

William Paul, Waltham Cross, London, N.—*Catalogue of New Roses, Beaton's Hybrid and other Geraniums, Hollyhocks, Dahlias, &c.*

James Backhouse & Son, York.—*Supplement to Catalogue of Alpine Plants.*

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

BOOKS (A. H. O.).—Those you name are published by Messrs. Smith, Elder & Co.

MR. BULL (S. Rogers).—We presume you mean Mr. Bull, Nurseryman, King's Road, Chelsea.

SEEDLING CINERARIA (A. F. S.).—The petals are free from the notch which florists deprecate, otherwise there are many similar in colour, and others far superior. No judgment can be formed of any plant from a single flower.

GARDENER'S DAY'S WORK (Bob).—From 10, to 10½ and 10¼ used to be the number of hours found London. We believe most places have their own arrangements, and all sticklers to time should settle that beforehand. Of course gardeners do not work these hours in winter, and very long hours are generally an injury even to the employer.

POTATOES FOR PLANTING AN ACRE (Dalmakov).—How can we tell how many you will require without being first informed what sized sets you intend using, and how far apart in the rows, and what distance between the rows? If the sets weigh 2 ozs., and are placed 9 inches apart in each row, then if the rows are 18 inches apart, you will require 32,720 sets, equal to 43 cwt. If the rows are 30 inches apart you will require 23,232 sets, equal to nearly 2½ cwt. From these data you may calculate the quantity you will require.

ESSEX RIVAL PEA.—We have had several letters ("A GARDENER FROM LEICESTERSHIRE," "PISCUM," &c.) and we decline to insert any more upon the subject. The Committee of the Royal Horticultural Society have decided to repeat the trial this year, when the public will be able to judge for themselves.

SOEWING CINERARIA MARITIMA (P. P.).—The seed, sown now in a greenhouse, would not vegetate unless the temperature were at least 50°. We should recommend you to defer sowing until you could command a temperature of from 55° to 60°, and a bottom heat of about 70°. Sow the seed in pans of good light turfy loam two-thirds, and one-third leaf mould, and not very thickly. When the seedlings are up give abundance of air, and do not overwater, yet keep moist, and when two or three rough leaves have been made prick the young plants off at an inch apart every way; place again in heat, shade until established, and grow on until the middle of May; then harden off and plant out in the first week in June. If the seed be sown early this month and treated as above, fine plants will be the result, only they will not be so silvery as those which are older.

DISBUDDING ROSES (C. A. M.).—It would be desirable to limit the flowers to one on each shoot, and to allow none to expand except on the vigorous shoots. This would strengthen the trees materially and assist their becoming speedily established, and the denial thus exercised will be amply repaid in after-years.

SHRUBS UNDER A HORSE CHESTNUT (Amateur).—Aucubas are the best of all shrubs which we have tried for planting in shade under trees. Laurustinus does fairly; so do the Alexandrian Laurel, Butcher's Broom, Ivy to run along the ground, Berberis aquifolium, repens, Darwinii, dulcis; common Laurels, Hypericum or St. John's Wort, Common Yew, and Periwinkles of sorts.

PLANTS FOR PARTIALLY-SHADED ROCKERY (Idem).—Aubrieta deltoidea, Alyssum saxatile, Iberis Tenoreana, L. sempervirens, Arabis alba, Wallflowers, Cheiranthus Marshalli, Campanula garganica, Cerastium tomentosum, Cineraria maritima, Convolvulus sepium rosea, Dianthus deltoidea, floribundus, and plumarius, Draba azoidea, Fumaria solida, Glechoma hederacea foliis variegatis, Sedum acre, Forsterianum, and sponchium, Saxifraga Rhei, polita, hypnoides, palmata, and alazon, Phlox verna, Orobanchus vernus, Lotus corniculatus flore pleno, Linaria cymbalaria, and its variegated variety, and Alchemilla alpina.

PAINTING HOT-WATER PIPES (An Old Subscriber).—Painting with linseed oil and lamp black will not prevent the free radiation of heat, but rather promote it. In reply to "C.H." on the same subject we would not advise such work being done now when the house is at work and the weather is cold, as the fumes sent off will be apt to injure tender plants. Better wait, at least, until the days are long and more air can be freely given; better still, wait until the risks of the season are over. To "X. Y. Z." also on the same subject, we would say that the best time to paint pipes is when the house is empty, or when the plants are comparatively at rest; and the best mode then to do it is to have the water in the pipes heated to about 140°, and then the paint goes on thin, and soon becomes dried, and the thinner the better, provided all is well covered. We like as well when there is a little lead in the paint.

INSECT ON VINES (A. B.).—The insect on the neglected Vines is the mealy bug (Coccus adonidum). Lose no time in applying the usual mixture of soft soap, sulphur, and tobacco water by means of a hard brush.

CONSERVATORY BUILDING (A Subscriber).—We have no recollection of any one building with iron and without paint.

MANAGEMENT OF A HOTHOUSE (A Regular Subscriber).—To publish all you ask for, to teach your gardener, would fill two entire Numbers of this Journal. Buy Keane's "In-door Gardening"; you can have it free by post from our office for twenty postage stamps. It contains directions for stove management during each week in the year.

HEATING BY HOT WATER (Z).—We do not think that a tank would possess any superiority over pipes for heating your stove and Cucumber-house. If you have moveable openings in the tank, you can admit vapour from these into the atmosphere of the house when the water is not so warm as to cause the vapour to scald. This is almost the only advantage of a tank in such circumstances. You are quite right in concluding that in heating the two houses from one fire the tank must be level and higher than the pipes. The tank would then act as a cistern to supply the boiler. A tank 2½ feet high, with sides from 4½ to 6 inches deep formed of radiating material, such as slate, brick, or, better, iron, covered with slate or iron, the sides exposed, and with a few openings in the top, would give you enough of heat for Cucumbers and stove plants after March, but would scarcely be enough in winter. You would want besides one or two four-inch pipes. Were we to have such a house ourselves, unless there were reasons for having a tank, we would use two four-inch pipes for bottom heat; but if we resolved on having Cucumbers all the winter, then we would have three pipes for top heat, it matters but little where placed, but it would be well to have one at least at the back of the house. Of course such a house must be heated independently of the greenhouse. For this, two pipes for the length, or a little more than 60 feet, would keep the house safe in winter. We would prefer three, and then if you wished you could keep up a higher temperature. We presume you know how to arrange the pipes and furnish them with air-vents if on different levels. It does not answer so well to take water from a large tank to heat other places. In your case the simplest plan would be to take the flow-pipe into a cistern, say 20 inches square, higher-placed than any of the pipes, and from thence take a flow for top heat, a flow for bottom heat, and a flow for the greenhouse, to be regulated by plugs, all having a return to the main return-pipe.

EXCLUDING FROST (An Old Subscriber).—No kind of stove ought to be used for heating a greenhouse, unless the products of combustion are carried into the open atmosphere. We would prefer a common iron stove with a small pipe leading out of the roof or through the back wall. You have only to put in a thin slate with a hole cut in it, or a piece of sheet iron instead of a square of glass, if the pipe go through the roof. We would prefer the pipe to go from the side of the stove near the top, and not from the top; and if the top is level an iron vessel could be placed on it to be supplied with water. This is the simplest and cheapest mode of heating such a house. The next cheapest and best is, provided you have a tiled or brick floor, to have a small flue below the floor.

REMOVING VINES FROM POTS (Idem).—In most cases we would shake all the earth from the roots of Vines in pots before spreading them out for planting. As to Fern culture, you had better buy the "Fern Manual," published at our office.

LOBELIA SNOWFLAKE.—I bought a 2s. 6d. packet of the seeds of Lobelia Snowflake, which were sown a month ago and plunged in a hotbed for Cucumbers, a piece of paper being laid lightly over the soil. I speak within the mark when I say that ten or twelve dozen plants have come up. I think "Nemo" and friends may still expect their seeds to come up, as Lobelia seed will often lie four or five weeks before appearing if not kept warm and moist.—W. C. Two other correspondents write as follows:—"Did 'Nemo' get his seed from 'S. R. H.'? I bought 'Snowflake' seed on the 15th of January and secured perfect drainage; and covering the seed very lightly with white sand. I then placed the pan on a shelf in an early vinery. It certainly was six weeks before I saw a vestige of a plant; but it has come up quite as thickly as I could expect from the small quantity of seed sown, and is now growing well. The Lobelia speciosa, which I sowed at the same time, is nearly ready to prick out. A nurseryman in this town sowed a packet of the Snowflake in a rather strong bottom heat, which came up much more quickly than mine. If 'Nemo' has not sown his too deeply he need not despair.—J. M. B." "Since writing last week a few of my Snowflake Lobelia seed have come up, about a dozen.—Nemo." "If 'Nemo' will favour us with a call, we shall be happy to show him some pots, sown from the same sample as that sent out, in which the seedlings are as thick as the hairs on a cat's back. We have sown it at different periods, and a packet has always yielded from 350 to 400 plants.—J. & C. LEE, Royal Vineyard Nursery, Hammerwich." [We have a dozen similar letters, and need not insert any more.—Eds.]

PEAS, PRESERVING GREEN (H. S.).—They may be preserved until the next spring if some of the summer crop are treated as follows:—"Pick them when full grown, shell them, dry them gently but thoroughly, and then store them in canvas bags in a dry place. When required for use soak them in water for a few hours until plumped up, and then boil them." The following mode has been reported to us by a person well qualified to judge of such matters as being very successful:—"Carefully shell the Peas, then put them in tin canisters, not too large ones; put in a small piece of alum, about the size of a horsebean, to a pint of Peas. When the canister is full of Peas fill up the interstices with water, and solder on the lid perfectly air-tight, and boil the canister for about twenty minutes; then remove them to a cool place, and they will be found in January but little inferior to fresh, newly-gathered Peas. Bottling is not so good—at least, we have not found it so; the air gets in, the liquid turns sour, and the Peas acquire a bad taste. The "Garden Manual," which you can have free by post from our office if you enclose twenty postage stamps with your address, contains the information you mention. A larger work on garden plans is preparing.

MEASURES (South Cornwall).—"A quarter of Oat" is a quarter of a peck. "Covent Garden Measures" are in our No. 252, published January 23rd last.

GOOD BEARING FRUIT TREES (A. Q.).—Apples: Flanders Pippin, Striped Beesing, Blenheim Pippin. Pear: Conceller de la Cour. These four fruits named by you are all good bearers. The Blenheim Pippin is of luxuriant growth, and is some time before it sobers down, but when it begins bearing is very prolific.

FERNS IN WARDIAN CASE (Irish Moss).—The Ferns will continue to damp off if you cannot admit air at one of the sides as well as at the top. Circulation of air is needful. The Ferns had better be turned out from the pots. The plant you have sent is Saxifraga cespitosa, or Tufted Alpine Saxifrage. It is a native of the highest mountains of Wales and Ireland.

CUCUMBERS FOR EXHIBITION (A Subscriber).—Improved Manchester Prize and Hamilton's Surprise are as good as any others.

GREENHOUSE VINEY (*A Subscriber, Ballinasloe*).—1st, We have no doubt that the greenhouse viney will answer very well if you have sun in summer from 8 a.m. to 4 p.m. It would answer better still if you could raise the back wall higher than 14 feet—say 16 feet; but 14 feet according to your own showing will do. The front of the house, to look well from the living-house, should be 6 or 7 feet in height, and of that 3 feet at least may be brick wall. The front sashes should be hinged to move, and three or four short sashes at the top should be movable; all the rest of the roof may be fixed. 2nd, Supposing you raised your wall in front 3 feet, you might make the most of your border above the flags now in the yard by raising the border at back, close to the sill. Then, instead of taking the Vines through holes in the wall, we would build the wall on arches, run a wall along inside, leaving a space in front at least 3 feet wide, and fill that with good soil as high as the border outside, and there we would plant the Vines, and thus have all the stems under control, and the roots could go out as they liked. This border would do for setting plants on, or you might have a sparred trellis all over it with a wall behind it; you can arrange the rest of the house by stage or otherwise. The very best arrangement would be a walk all round, a hipped stage in the centre, and the back wall covered with Camellias, Acacias, &c., or with shelves if many plants were to be stored. 3rd, For such a house we would be inclined to use from six to seven Vines, and according to your fancy they should be these—one Bowood Muscat where the heating pipes come in, one Mascat Hamburg, one White Frontigan, two Black Hamburgs, and one Esperone, and if a seventh, one Royal Muscadine. 4th, With what you tell us of the circumstances we cannot be so sure of the Roses succeeding on the trellis on three sides of the court; if there are walls on the sides would they not do as well on them and thus give you more space? We have little doubt that by removing the flags and the concrete, and putting in 3 feet of good soil, your plants will thrive if they have enough of sun and air. Of course they will receive much less sun than the greenhouse, which will stand at the north end of the paved court. A paved court is generally more comfortable behind a house, especially when shaded, than either grass or gravel. We would just throw out the hint, before raising the flags, whether vases or baskets would not answer the purpose better. Nice little beds might also be made above the flags, high enough to let the flags remain, or so low that the flags could be removed only beneath the beds. Such beds or vases, we think, would look more artistic than mere beds of earth.

HOT-WATER APPARATUS FAULTY (*A Seven-years Subscriber*).—We do think you should make a complaint and have the tradesman to see the heating apparatus if the following suggestions do not help you. 1st, See that the fire is all open and clear, then keep the damper open and the ashpit door open until the fire take good hold, then shut the ashpit door, and when the fire becomes bright shut in the damper, not so as to leave a space that would admit the blade of a knife, but from half an inch to a quarter. To save trouble you might draw three or four quarter-inch holes in the damper. 2nd, See what is said about deficient piping in "Doings of the Last Week," page 186. In such cold nights as we have lately had, we think the two pipes, 30 feet we presume, in the house did very fairly in keeping up a temperature of 45°, and that under the circumstances would be high enough for a conservatory. To have a heat in cold nights of from 50° to 60° in such a house with front, one side, and top of glass, would require four rows of piping, or 60 feet. 3rd, We cannot see why such a fire should involve smothering with smoke, and running to it eight or ten times in an evening if at all rightly managed. We have seen a person lighting a fire with the damper in. Most likely you must indocrinate the cook with an interest in the plants. The flower you enclosed is *Abutilon vitifolium*. The sticky excretion on the leaf is "honey-dew." You can remove it either by sponging or syringing.

HEATING A GLAZED HOUSE (*W. H. S.*).—We are not sure from your description whether your house is to be a true span—that is, 6 feet on each side, and 10 or so at the apex, or whether it is to be a lead-to with a hipped roof on one side. If your levels are all right you can easily heat such a house from the kitchen boiler alluded to, and you would have no occasion whatever for a pipe. Pipes of the requisite length, and 1 inch in diameter, to screw into the boiler, one near the top and one near the bottom for the flow and the return, will do very well. These can be screwed at the other end into cap socket joints that will fit into four-inch pipes. From 30 to 60 feet of these four-inch pipes will be necessary, according as you wish merely to exclude frost or have a higher temperature in winter. Grapes may be grown; but whether in pots or otherwise, the more you have of them the less you will have of other things. For a cool house Royal Muscadine and Black Hamburg will be best.

FLOOR OF GREENHOUSE (*H. G.*).—For a greenhouse the floor may be slate, flags, pebbles, or even the earth. If a certain part is floored for paths, the earth or pebbly gravel would do as well as anything, and would always be easily freshened up. For Peach-houses and vineries we like earth as well as anything; and the floor will always look fresh when fresh raked, or a fresh sprinkling of clean soil added to it. If the trees are planted outside, the floors may be paved or tiled with advantage. We fear we do not catch your meaning.

EDDING-OUT (*A Young Gardener*).—To produce your colours—1, *Perilla nankinensis*, or Ariosto Improved Verbena; 2, Tom Thumb Geranium, or Beule de Feu; 3, as proposed, white Variegated Sage, white Verbena, or Alma Geranium, with the flowers removed; 4, Purple King Verbena for purple, a dwarf Ageratum for lilac blue; 5, *Lobelia speciosa*; 6, *Calceolaria Aurea floribunda*, or *Aurantia multiflora*, as you wish it to be 10 or 15 inches in height. Plant *Lobelias* from 4 to 8 inches apart; all the rest a foot apart.

GIANT WHITE PETUNIA.—We shall be obliged by information in answer to the following:—"I have long tried to obtain a plant of the Giant White Petunia, having seen one once at Southampton Nursery, quite as large as the purple one, which they call the Great Western in these parts. Mine are of the size of a small tumbler, and I think if the white one could be as easily raised they would make a very beautiful bed together. I sent for some seed of a kind called *Petunia grandiflora alba*, but it proved to be only the common white one, which grows self-sown in my garden. Under what name ought I to ask for the large-flowered, and where can I procure it? Last year the Giant Purple one perfected its seeds, which it never did before, and I have a pan full of seedlings now coming up in my greenhouse.—E. S. B. G., Teignmouth."

FLOWER-POTS (*A. and Others*).—We must refer you to the advertisement in last week's Journal, inserted by Albert Downs, Edmund Hill Pottery, Glastonbury.

RHODODENDRON FORTUNEI.—We shall be obliged by information in answer to the following:—"W. D.," a great admirer of *Rhododendrons*, wishes to know if any of your numerous correspondents has yet bloomed *Rhododendron Fortunei*. I bought one when it was sent out first, now a large plant out of doors, and have another large plant in a pot in the house, but neither of them appears likely to flower. I bloomed *Aucklandii* beautifully last season, a much younger plant than those of *Fortunei*. If it has bloomed in this country is it an acquisition of any value, or not? What are the blooms like?"

SOWING PICEA NORDMANNIANA SEED (*H. & F.*).—Sow the seed thinly, the present time is as good as any, in pans or boxes of rather sandy soil made firm at top, and if you take the time trouble to partly fix each seed in or rather on the top of the soil, we would not advise any covering beyond a little moss laid loosely over the surface, to prevent the sun parching up the seed while in course of vegetation. A cold frame will do very well, or the pans may be set in a gentle heat if you wish to hasten germination. Remove the moss by degrees as the seed vegetates; but before that keep a sharp look out for mice, which prey sadly on the seed. Water moderately when dry weather sets in, until then little will be wanted. We would prefer a cold frame to a hot pit for these plants, and more seed, when new, will be found to vegetate in this way than when sown in heat.

DISEASE IN SILVER FIRS (*H. J.*).—We are sorry we cannot offer any effectual remedy or preventive to the disease you complain of. We saw some trees similarly covered with a white substance in Kent a short time ago. They were about 40 feet or more in height, and had until the last year or two appeared in the most robust health, but were absolutely dying, and some had succumbed. We did not examine the white substance by which the stems were covered; but from its appearance we supposed it to be of a resinous nature, and exuded from the tree, showing that something was wrong either at the roots or with the foliage, in consequence of which the balance of sap and its absorption was not maintained. Of course these views may be erroneous, as we had not the means of examining the trees closely. We have, however, seen a white resinous substance ooze out of an *Aracaria* during an unfavourable season, and the next year the tree was all right again, showing that the evil was only temporary; but we much fear that the Silver Fir is worse affected, and we will make further inquiry in the matter.

RHODODENDRONS FOR FORCING (*G. B.*).—The best we have grown of the early-flowering hybrid *Rhododendrons* were:—*Russellianum*, crimson scarlet; *Wellsianum*, bright scarlet; *Stamfordianum*, rosy scarlet; *Caucasicum album*, white-spotted; *Nobleanum* in scarlet, rose, and light varieties; *Perspicuum*, white; *Campanulatum hybridum*, white; *Altacarense*, scarlet; and *Broughtonianum*, rosy red. Varieties of *R. catawbiense*:—*Everestianum*, lilac, spotted and fringed; *Glennyannum*, whitish; *Grandiflorum*, bright deep rose; *Roseum elegans*, bright rose; *Roseum superbum*, deep rose; *Purpureum elegans*, purple; and *Album elegans*, waxy white, green spots. Of the late-flowering hybrid scarlets:—*Victoria*, dark plum; *Blandyanum*, deep crimson; *Atroungianum*, blood red; *Alarm*, white, deeply edged with light scarlet; *John Waterer*, glowing crimson; *Maculatum purpureum*, purplish rose, much spotted; *Towardii*, rosy lilac; *William Downing*, rich dark puce, intense blotch; *Lafrevanum*, purplish crimson; *Coriaceum*, white; *Brayanum*, rosy scarlet, with lighter centre; and *Hogarthii*, rosy crimson. Of the dwarf small-foliaged kinds:—*poniticum odoratum*, and *myrtifolium*, and *R. hirsutum*; all pretty, free blooming, and sweet.

TRAINING WEEPING ASH TO FORM A SUMMER-HOUSE (*E. C.*).—We should advise you to have poles 9 feet long, fixed in the ground to the depth of 2 feet, first charring the thickest end for that length, and coating it whilst hot with coal tar. Fix the poles in an erect position, a yard apart, on the circumference of a circle, each at 6 feet from the stem of the tree. They may be 3 or 4 inches in diameter. Their tops being sawn off level, the half of a pole of the same diameter should be nailed, flat side downwards, on the heads of the upright poles. The branches of the tree are to be raised and put upon the rail thus formed, fastening them with a piece of tarred string. If the rail is so high that the branches cannot be brought over it without breaking, the poles must be less in height or nearer the stem. On the side where the branches are thinnest a doorway may be formed, and any available branches trained in that direction. In a few years you will attain your object.

HEATING BY GAS (*A Constant Reader*).—The following mode we published in our First Series, Vol. XXII., p. 34, where an engraving is also given:—"The apparatus consists of a burner—a ring of brass tube, 5 1/2 inches in diameter, pierced with fifteen small holes—placed 4 inches above the level of the floor. Over the burner is what may be described as an inverted galvanised iron trough, 9 inches wide, 7 inches deep, and 5 feet long, resting on four legs 4 inches high. The burner is placed under one extremity of this trough; from the other end runs the chimney, which is of three-inch galvanised iron piping, the joints of which are not cemented. This rises 5 feet, and is then carried across the house 12 feet, and finally makes its exit in the kitchen chimney. Placed on the top of the trough over the burner is an evaporating-pan, containing about three gallons. This arrangement, if not ornamental, is cheap and useful, and, with a little exposure, may be made more elegant; at any rate, it is entirely removed during the season when the more attractive flowers of summer invite visitors." If you chose to have a small boiler and pipes for circulating hot water, and heated by gas, you will find a drawing and description in No. 94 of our New Series of this Journal. We will publish some notes and drawings shortly.

SOWING ANNUALS (*S. A. N.*).—Seeds of *Tagetes signata*, *Phlox Drummondii*, and the Ice-plant, may all be sown in pots in gentle heat, in the course of the present month, hardened off, and planted out towards the end of May, when all danger of frost is past. The annual Lupines may be sown out of doors, when the soil is in good condition, about the beginning of April. If required to bloom early, they may be sown in a little heat, or out of doors in the present month. The plant is *Acacia decurrens* var. *mollissima*.

EMIGRATION (*G. B.*).—We never advise upon this subject. Too much depends upon circumstances of which we know nothing.

ACCUEAS (*W. E. I.*).—There are male and female plants in all the species, so we cannot aid you. Of course plants of both sexes must be present to obtain fertile seed.

NAMES OF FRUIT (*E. W. A.*).—*Apples*:—1, Beauty of Kent; 2, apparently the same, but of a paler colour; 3, Lewis's Incomparable.

NAMES OF PLANTS (W. M. S.).—We cannot name plants from seeds. In all cases a flower should be sent. The usual greenhouse treatment will suit your Swan River seed. (A Subscriber).—We cannot name a plant from seeing three small dried leaves. (T. Jones).—Again you must be

disappointed. The Orchid flower was quite black, and there are several of the Calanthes so nearly alike that a perfect and fresh bloom must be seen to justify identification. The flowers should be placed between layers of damp moss and sent in a small box.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 10th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 4	29.727	29.542	42	28	40	40	E.	.00	Hazy; fine; dusky haze; fine; slight frost.
Mon... 5	29.749	29.623	41	25	41	40	E.	.00	Cloudy; fine; overcast; slight frost.
Tues... 6	29.467	29.212	44	23	40	40	S.W.	.10	Fine; rain; fine; frosty.
Wed... 7	29.661	29.175	45	25	39½	39½	S.	.02	Hoar frost; showers; dusky clouds; fine at night.
Thurs. 8	30.114	29.577	46	32	42½	39½	E.	.03	Cloudy; showers and dusky clouds; fine.
Fri... 9	29.971	29.875	46	29	41	40	N.E.	.00	Fine, but cold; densely clouded and cold; slight frost.
Sat... 10	30.297	30.281	44	30	41	40	N.E.	.00	Fine; cloudy and cold; overcast at night.
Mean..	29.858	29.613	44.00	27.43	40.43	39.86	....	0.15	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

A DAY AT LINTON PARK, KENT.

THE SEAT OF THE VISCOUNT HOLMESDALE, M.P.

(Concluded from page 190.)

BACK we turn towards the house, and then verge to the right, and are in front of a group of most beautiful Spanish—black and glossy; as they proudly stand on the green turf, I ask, Can any fowls be more beautiful? A Spanish cock, if well-bred, looks such a gentleman, and the hens such high-born dames. I look on and am enamoured. I am glad that the General admires these noble birds.

We next find Lady Holmesdale's pet Dorking hens, her largest birds, the heroines of many and many a poultry show, which, if they could write their travels, could tell of more admiration expressed, and fervently expressed to them, than any ball-room belle in the country—what attention had they not received, what praise heard of their beautiful selves. "You will see poultry to perfection at Linton Park." These words kept sounding in my ears, just as a line of poetry will do sometimes, and I kept giving an inaudible assent to their truth.

Now we are bound for a distant part of the park, so southward we stroll, now and then coming to a standstill on an oozy bit of turf (Oh! this wet weather), and being obliged to alter our course from a straight line to a curve. Admiring the scenery, and falling more and more in love with Kent, I come to a wood where more Dorkings are picking about—one an old cock, which had evidently seen his best days; but Lady Holmesdale particularly wished me to see a young cock at a walk at one of the afore-mentioned model cottages. So diving into a thickish wood, and climbing the park paling, I stand, or rather try to stand, for 'tis a giddy height, and an uncertain foothold, and I obtain a view of the bird across the road and in a cottage garden, it being driven in sight, much to its disgust, by the cottager, and with huge strides and wide wings escaping as soon as possible. This cock is, perhaps, the most promising bird which her ladyship possesses; but I owe him a grudge, as the sequel will show.

We now turn back, and in a direct line seek the house, ascending the hill (at first a very gradual ascent), upon which the mansion stands. No country house could have a finer position, and few possess a finer frontage. And now I noticed a peculiar hazy yellow light hung upon the park, and gardens, and house front, not unlike that often pictured by Turner, particularly in his view of Petworth Park, now in the possession of Lord Leconfield at Petworth House. As we walk on I admire very greatly a number of Silver-pencilled Hamburgs, which, as far as my individual taste went, I preferred to any poultry seen at Linton. Farther on, and now no yellow haze to admire, but a sharp shower, and then a tremendous downfall of rain—a pitiless, pelting, hard-blowing storm. Oh, that Dorking cock! 'tis his fault that his noble mistress will be drenched, and we all late for luncheon (however, that is nothing, for it is always the case when looking at poultry). Sheltering, but vainly sheltering, by the trunk of a tree for a minute or two, where, most considerably for us, quite near to view were a number of Dorkings; but in vain—we must run for it; and the gallant General, who never ran before his country's enemies, runs before the attack of Pluvius. Drip-

ping and breathless, we reach at last the kindly shelter of the house. Welcome secure shelter, drying fire, and satisfying food, three blessings which soon put all to rights.

After luncheon I am shown the cups won at different times by Lady Holmesdale's birds. They (the cups), are brought in upon a large tray—a very large one, and present a very bacchanalian appearance. By the way, could not poultry committees give silver prizes in some other than the cup form? What can be done with them? Look at my friend Mr. Rodbard with his forty or fifty cups. They would be very suitable if every fancier were like the most paternal gentleman of whom the poet says—

"Father of twenty children was he, and more than a hundred
Children's children rode on his knee."

Then each child and every favourite grandchild could have each a cup; but we are not all, happily, so very patriarchal. Lunch being over, and the weather again beautiful, the various guests at Linton scatter in search of recreation or exercise. My noble host most kindly proposed to devote himself to me for the afternoon.

First, I am shown a photograph of the garden in its summer trim, and very lovely it must then be. Even now, owing to Mr. Robson's skill, it presents (I am speaking of the bedding portion), a picturesque appearance as seen from the windows, for the large bed shows distinctly three colours—white, red, and black; and yet, though the effect is good, it is caused by humble materials—cockle-shells, broken red brick, and cinders. By these means the eye is pleased, and we are spared the cold-looking bare mould.

Before descending to the terrace I must say one word about the interior of the house. The public rooms are handsome and well proportioned, and all opening into each other. The effect of this, seen from end to end of the whole length of the house, is very pretty and pleasing. In the dining-room hang the portraits of her ladyship's ancestors, the Lord and Lady Cornwallises of other days—one that of a former Governor-General of India, another in episcopal robes. (How often the church is entwined with the peerage!) Then bright fair eyes look down upon us—eyes long since closed, and rosy lips and rounded arms that had admirers in their day, doubtless. Then there was the full-length portrait of a youth, a mere boy, fair-haired, and fresh-looking as a mountain daisy; but his antique garb told the tale of his being no more in the flesh. Oh, triumph of the painter's art! The picture lives and glows, almost breathes, when the reality is but dust. I delight in a room full of family portraits. I could sit down and write a good sermon there. I love the company of such—they supply thought. I like, too, the varied dress, telling of the time when each one lived; and perhaps, as here, there is an historic name and face, one of England's worthies, and I feel, "I, too, speak your language; I likewise am an Englishman." But while I am moralising his lordship is waiting.

Just in passing Lady Holmesdale points out to me a little and most choicely filled conservatory of semicircular shape, at the one extreme of the suite of rooms, as the dining-room is at the other.

To the garden. Here in the soft air of Kent, and in a spot most sheltered, I found a very fine cork tree, finer and less ragged-looking than the two at Goodwood, if my memory is correct. Being an evergreen, and in such a stormy snow-falling country as England, I was surprised to see it without

a single break—not even one limb is gone. Next we turn into the large and new conservatory, a fine structure, which, when the iron pillars become clothed with creepers, will be fairy-like. Through it we reach the fern-house, and oh! the beautiful ferns, from the palm-like tree ferns to the little wee ones at my feet, every gradation of size and form. What a charming grot to sit and read in! But I must say no more about it, I am not a “*FILIX-FÆMINA*.” I neither have her knowledge nor hold her pen. Greenhouses, vineries after vineries, garden after garden came next, until we stroll along the terrace, then plunge into the mazy walks among the shrubs. It is worthy of remark, that the choicest shrubs grow very vigorously at Linton, soon joining each other, growing across paths, so that I found many new walks planned, simply because the others were not passable. Lord Holmesdale seemed to be keenly alive to the pleasures of his garden, and knew each tree and flower as well as loved them—perhaps loves because he understands them, for love is the child of knowledge. His lordship took me to Mr. Robson's cottage, the *beau idéal* of what a head-gardener's house should be, but he was not at home. We found him, however, soon afterwards, among his men superintending the restoration of the paths, the materials of which had been literally washed down the hill by that most drenching shower. (Oh! that Dorking cock!) There is no gravel in this part of Kent, so the walks are coated with broken shells from a river's bed near. We next, leaving the paths to be righted, walk on to the newly-laid-out garden between the mansion and the church, which in summer will look grandly, having such a ribbon-border so wide and long.

I pause now and then to feed upon the view lit up by a bright watery sunshine, and admire nearer at hand the shrubs, with the yellow sunlight upon their still wet leaves. But I must be away in order to catch the train at Maidstone. I would fain have lingered, but—that train, and to jog memory there stands the carriage at the door. So I am off, and presently the park is left and we break out into the high road. Hop poles on all sides far as the eye can reach. Oh, ye teetotallers! never one of ye retire to live in Kent, you would not have a single happy hour. Marks of old inhabitancy meet one at every few hundred yards. I see Kent bathed in yellow sunlight, that peculiar light which comes after a very heavy shower. I am one who believe that a merciful compensation runs through all things. The heavy unpleasant rain, then the brilliant sky, and the more golden sunlight. Wordsworth describes in two lines what I saw—

“The rain came heavily and fell in floods,
But now the sun is shining calm and bright.”

He might have added all the brighter for the past rain. Sunset is fast coming on. I reach Maidstone just in time, jump into a carriage, and am all to myself—just what I like at the end of a day's pleasure, then I can ruminate uninterruptedly upon the past. Soon the stars came out one by one, and nothing caught my eye save the flaring gaslamps of the stations, then came the lights of the houses, then of the streets, and I am again in busy, bustling, thronged London.

A few concluding words upon my day at Linton Park. “I saw poultry to perfection,” and beautiful gardens as well, and I spent a day, one of the few I should like to live over again—but that is a heathen wish, so I recall it, for it is our part to press on to a better world. I was most kindly received, and my noble host has the happy and enviable gift of making a stranger feel at once at home. England has an aristocracy fulfilling its duties as a class (and I do not speak without some knowledge), as thoroughly well as any other class in the community. They may now-a-days invite comparison with any class. They build the comfortable cottage, making the poor man happy, and they have, where they are known, the respect of the middle and richer classes. They give time as well as money to help others, and in urging forward what is good, and they fulfil their part of the world's work manfully and well. I hope, therefore, never to see our dear old England Yankeeified, but that its nobility will always have their just and proper influence. Blatant levelling demagogues (I have come across several), are seldom men who fulfil their own duties, while they rail at others, and they are never in taste or feelings gentlemen—from such, and their pernicious doctrines, may we be long preserved.—WILTSHIRE RECTOR.

EGG HARVEST.—I began keeping fowls in December, and from three hens and five pullets I had in December 45 eggs;

in January, 65; and in February, 130: therefore I do not think the weather should be blamed because the fowls of others do not lay. I attribute my success to their having a clean, comfortable roosting-place. I had six eggs yesterday, and seven to-day, and the weather is very frosty.—W. H. S. (*A Schoolboy*).

[A clean roosting-place is very conducive to health; but proper feeding must also characterise your management. We have eggs in abundance now.]

DEFICIENCY OF EGGS.

I HAVE noticed your remarks on this subject. I am inclined to think that breed has more to do with it than the weather. I keep White Dorkings, having come to the conclusion that they are the best of all fowls for general purposes. I have twenty-eight hens, the oldest is ten years old; of course she must not be counted, as she has not laid for two years; the others vary in age from seven years to seven months. Except for a fortnight in November last I have not been without eggs for three years; to-day eleven were laid. I have had several broody hens that I turned off on account of changing my residence, so that I only set my first hen last week. We have so good a supply of eggs that we cannot use all. I feed once a-day on barley, and once on potato-parings boiled and mixed with sharps, and the fowls have a good run. I am a great advocate for white plumage, it keeps the birds warm in winter and cool in summer; and if I could induce others to try White Dorkings I feel sure they would like them, but they must not have puny birds.—B. P. BRENT.

GAME BANTAMS.

WITH every respect for the opinion of “WILTSHIRE RECTOR,” I must decline to accept “the great Yorkshire breeder's” letter as setting the question between us at rest. First, I must say that I do not think “WILTSHIRE RECTOR” is quite candid, he now rather backs out of his avowal that Game Bantams are easy to breed (*good*), for I appeal to every reader of his answer to “GALLUS,” at page 96, whether that is not what they understand him to mean by what he there says; nay, I will ask “WILTSHIRE RECTOR” himself to read that reply again, and then to say whether that was not what he really did then intend to have your readers infer. Well, I replied, and I gave instances that “WILTSHIRE RECTOR” was altogether mistaken, and I again aver, “the great Yorkshire breeder” notwithstanding, that Black Red Game Bantams are as a rule exceedingly difficult to breed first-class; and I will say further, and echo the words of a very noted breeder of Game fowls who recently wrote me, that “not half a dozen A1 Game Bantams” are produced in a season out of the thousands that are hatched. I have had correspondence with, or know personally, many, indeed I may say all, of the Game Bantam breeders of note, and I am perfectly satisfied that, with the exception of Mr. Crossland, they would endorse all that I have said on this subject.

Mr. Crossland, I dare say, bred an unusually large number of good birds last season, but that the majority of these were first-class I utterly disbelieve. In fact, I saw his Birmingham prize birds, for he sent them to me when we were some little time since negotiating for an exchange on approval. Now, though I suppose these were not the worst Mr. Crossland bred, they certainly were not first-class. The pullets had silvery deaf-ears; and the cock was, in my opinion, too dark, and did not carry his tail close or low enough for a first-class bird. Mr. Crossland must excuse my criticising his birds; he has brought them forward himself, or I should not have done so. I believe, however, that he has shown two of the best pullets of the season; they now, I think, belong to Sir St. George Gore; but I am inclined to think that with the exception of Mr. Hawkesley's celebrated bird (for which, by-the-by, I hear he has refused £20), I have shown the best two cockerels. In fact, Mr. Crossland, in a letter now before me, assured me that his strain of birds and mine are the best two out, and in proof that he believes so, he wished for a cock and two pullets which I showed at Manchester, to cross with his own two birds, though, as a rule, he evidently objects to crossing. I merely mention these facts to show “WILTSHIRE RECTOR” that I am not quite a novice, that I do not write altogether at random—in short, that I know something at least about the subject I am writing on.

But to return to Mr. Crossland's statement. I contend that if

it be true, as perhaps it is, that he has bred a larger proportion of good birds from a given number of chickens than any other breeder, it may fairly be attributed to his breeding in-and-in for so many years, so that he has fixed the breed to a certain extent, and I should certainly expect from such birds to obtain a larger number of good birds than if I bred from those obtained from sources of which I knew nothing; but I will venture to say that neither Mr. Crossland, nor any other breeder in England, can always breed from Game Bantams, or any other variety of poultry, a large proportion of first-class birds among the chickens reared. I say emphatically that any man who says that he can, is making a statement which will utterly mislead those who believe it. "WILTSHIRE RECTOR" will remember that his original statement was, that Game Bantams were so largely exhibited at Birmingham, because they are so easy to breed. I, and I think every one else who read his communication, understood him to mean breed good. If he meant that, then I have said what I think as to that; but if he meant that so many eggs are fertile, and consequently so many chickens may be reared, may I ask him whether this reasoning would not equally apply to the Black and White Bantams which our favourites are fast superseding?

Since writing the above I have seen "A WEST YORKSHIREMAN'S" letter. He evidently had his birds from Mr. Crossland, as to whose breed I have already spoken. I do not think £1 each for the birds taken altogether was a high price, and certainly no indication that they were all very good. I have sold many birds this season at two and three guineas each which were anything but good—that is to say, which I understand by good. The fact is, that if "A WEST YORKSHIREMAN'S" birds were all good—i. e., first-rate, the cocks were worth from £10 to £20 and the pullets from £3 to £5 each, and Mr. Crossland himself must have sold them considerably under their value. I will now conclude by again asking with "GALLUS," How is it that good birds fetch such prices if they are so easily bred? How is it that Mr. Hawkesley refuses £20 for his bird? I mention him, as he is no novice at breeding Game Bantams, and, of course, if they are easily bred, he has plenty more as good. How is it I refused £15 for a bird I bred last year? How is it that Sir St. George Gore recently gave Mr. Crossland £10 for a pair of pullets? I want some more definite answer to these questions than a reference to the tulip mania, which is not in point. Again I ask, How is it that the gentlemen who found Game Bantams so easy to breed good do not sweep off all the prizes? How is it that so few really good birds are shown—so few, in short, are in existence? The first-class cockerels of the year 1865 may be counted on the fingers: how is that, if they are so easily bred? And as to pullets, it will astonish those who can breed them so easily to learn that, though I began to inquire before the Birmingham Show for some first-class pullets, I have been unable up to this day to obtain them, though I would willingly give £10 for a pair; and yet, notwithstanding these facts, Game Bantams are easy to breed!—P.

Not knowing the address of the "WILTSHIRE RECTOR," I cannot directly compliment him for the stand he has so firmly made, and held so well, about my pets, Game Bantams; and so clearly has he spoken the sentiments of my mind as to their being easy to breed, that I could almost fancy, whilst reading his communications, that he was looking over my notes on their breeding, and then strolling amongst my stock. Your correspondents, "GALLUS," and "W. F. E.," seem to think, as our "WILTSHIRE RECTOR" has parted with his Game Bantams, and not continued to be an exhibitor of them, that he only holds his ground. They are dreadfully mistaken, and if stock is gone, there is more than one yard left that contains birds that breed both good and true; and if "GALLUS," "W. F. E.," "WILTSHIRE RECTOR," or any other fancier of Game Bantams, wishes to prove whether they are easy to breed good, then I say here is evidence, for I have bred Game Bantams for eight years, and so closely have I given the Black Reds my attention, that very rarely indeed have I attempted to rear any other class of birds, and, perhaps, not so many of these as I ought. However, I have exhibited rather more than sixty pens of Black Red Game Bantams in my own name, and that of Mr. George Noble, and have won upwards of fifty prizes, and only on eight or nine occasions have my birds been shown without either obtaining a first, second, or third prize. Again, last year (1865), I bred seventeen cockerels and nine pullets, and I realised upwards of £50 for fourteen

cockerels out of this number, and for two pullets besides. I fancy I kept the best for myself.

Again, I do not consider that my cockerels are anything so near perfection as my pullets are; and if I may be allowed, I will construe the words of "GALLUS" into "very good," in place of "certainly not have written," and I must say after that, that I believe the rest of the sentence, "they are easy to breed good;" at least I have the opinion of some of the best breeders and dealers, that they have not seen any pullets to beat, if equal, mine.

Now, as to breeding one good bird in a hatch, why, such words make my shoulders almost touch my ears, as they recall to my recollection how I stood in the Bantam category about three years ago. I can fancy the stock of "GALLUS," and "W. F. E.," and how angry I feel just now, and I suppose they do the same, as most likely our positions were somewhat similar. Only last year a certain Yorkshire fancier, Mr. W. F. Entwistle, of Odley (perhaps the "W. F. E."), told me he had bred and killed upwards of seven hundred birds as worthless. When I write of my ill-luck of three years ago, I am reminded that I then had a fancy that a cross would be beneficial, consequently I gave £3 3s. for a pen, and their produce and stock, with the exception of one hen, I killed. She was good-looking; and a friend of mine, Mr. R. Smith, of Hull, was in love with her, and even offered me £5 for her. However, I lent her to him and the result was similar to that which occurred in my own case. Whites, Blacks, Browns, Grey, Spangled, and even piebald Blacks and Whites, were the colours they bred me; but now, before mine are hatched, I can tell any one pretty nearly what they will be, and if I were to have one photographed, I could safely say that nine out of every ten would be the exact *fac-simile*. If "GALLUS," "W. F. E.," or "WILTSHIRE RECTOR" in particular, give me a call at any time, I will make him as comfortable amongst Bantams as he seems to be amongst his own fowls, if looking at a few choice birds will do so; and if his visit be delayed for a short time, he will see rather more, as my breeding stock is showing fruit. I will pay his expenses of coming, if he is afraid of being again disappointed in the colour, head, neck, legs, or style in particular, and I say my birds will not disappoint him. Like my fellow fancier, Mr. Crossland, I do not believe in crossing with any one's strain to such an extent as some people would lead us to believe is the proper method.

Here is the history of my strain. In the first year I picked up in the country for a mere trifle a cock Black Red Bantam, and a hen not related to him. I bred from the two, and some little improvement was the result of this cross. Next year I crossed with the cock the pullets that were bred from him, again I found some improvement, and for the following year I obtained a Duckwing cockerel from Mr. Crossland's yard. From this date my strides began to be more rapid, until I introduced another strain, then I was placed *hors de combat*; but such reliance did I place in my old stock, that I felt more success would attend my efforts another year, and I crossed with birds from the yard of Mr. Smith, of Hull, he having kindly lent me his old cock and four hens. This was the greatest hit I ever had in my Game Bantam breeding. I have not introduced any fresh strain these two years, and do not intend to do so, my fear is not half so much in not breeding quality as quantity. Mr. E. Hewitt, of Sparkbrook, saw my birds last September, and he will, perhaps, tell you what they were, as most likely he will have some faint recollection about their evenness in quality, although not so many in number.

By-the-by, here is an instance which, perhaps, may in some measure illustrate the case. At Keighley Show last year, Mr. Hewitt was judge, and he was somewhat puzzled betwixt two pens in the Black Red Game Bantam class, as to which to award the first and second prizes to, so much so that he had them taken from their positions and placed in two pens close to each other, so that he might be the better enabled to make his award satisfactorily, and when he had so done—both pens had left my yard not many hours before—the first-prize pen was mine, the second I had sold two days previously, and Keighley was the appointed place of transfer. Not so very uneven, "WILTSHIRE RECTOR," when I bred then less than thirty birds altogether, and one of the best judges was thus driven to this extremity.

Two more instances and I have done. First, Mr. Smith's strain, if I mistake not, has sprung from the brother to the bird on which Mr. Crossland lays his foundation. The other is: I was a breeder of Game Bantams for four years, with the advice of an old exhibitor and careful Game breeder for ten

years previously, Mr. Noble, before I threw down the gauntlet and became an exhibitor, and my first essay was in a class of upwards of forty pens, and I came off with success, which duly gratified me for my past exertions, and stimulated me to increase my care of these little pets, which I, with "WILTSHIRE RECTOR," and scores more, say are easy to breed, but still all feel sorry we cannot have the best.—Jno. D. NEWSOME.

STEALING FOWLS AT EXHIBITIONS.

CHARLES LISTER, of Mirfield, a man respectably connected, was committed on the 5th inst., by the sitting magistrates at Dewsbury, to the House of Correction, for stealing a Black Bantam cock, the property of Mr. Matthew Ridgway, of that town.

On the 26th of December last there was a poultry show at Heckmondwike, and Mr. Ridgway, through a man of his named Williamson, was an exhibitor. He took the second prize for Bantams in one of the classes with this bird, and after the show was over Williamson placed it in a room in the inn where the exhibition was held, intending to remove it when he was ready for going home. In a short time he went to look for the Bantam, but it was gone, and, though a strict search was made (the prisoner assisting), nothing was heard of it until a few days ago, when, by a little stratagem, it was traced to the prisoner's possession by Police Sergeant Lee, and it was ascertained that he had sent it to Hull to a dealer there, on approval, the price he set on the bird being £5. Witnesses were called who identified the Bantam produced by the police sergeant as the one stolen, and it was valued at the sum asked for it by the prisoner. Lister, when before the Bench, pleaded guilty. He said he took the bird more for fun than anything else, not being sober at the time; that he was afraid to return it; and that had he disposed of it to the Hull dealer for the sum he asked he should have sent the money in an anonymous letter to Mr. Ridgway. Another case of fowl stealing came before the Bench—indeed, there were three instances where theft was proved. The delinquent was James Ruddesden, and it was deposed that he had robbed hen-roosts at Earlsheaton. The prisoner was committed for trial to the sessions.—(*Leeds Mercury*.)

[We rejoice that one villain has been caught; and his published conviction, like a gibbeted felon, we hope will serve as a warning to other thieves "respectably connected." The gentleman who sent us the above report adds—"Mr. Ridgway has done well in trying to put a stop to fowl-stealing and mutilation, which are now so common at poultry exhibitions. I believe Mr. Ridgway would not have pressed the case, but it was not the first offence. The presiding magistrate, Mr. Greenwood, sentenced Lister to three months imprisonment with hard labour."]

CITY BEE-KEEPING IN AMERICA.

PROBABLY some of your readers may be interested in the experience of a city bee-keeper. If you think so I will, with your permission, introduce them to the apiary of an amateur in the City of Philadelphia.

PASTURE.—First let me describe the situation. For city bees mine are favourably placed, having around them more than an acre devoted to trees, shrubbery, and grass; besides which, many of our neighbours have small yards planted with shrubs and flowers; but the closely-built city extends in all directions around us. To the eastward, at the distance of three-quarters of a mile, flows the river Delaware, which has about that breadth. To our west is the Schuylkill, a much narrower stream, but at a greater distance: so that in either of these directions bees must fly more than a mile and a half before reaching partially open country. Southward, a flight of a mile and a quarter takes them to commons and vegetable gardens. To look northward is hopeless; more than three miles of brick and mortar might well dishearten any bee.

One advantage my bees have over those in England is a generally clear atmosphere, our common fuel being anthracite coal, which burns without smoke.

LIGURIAN BEES.—One of my colonies, occupying the double-storey Langstroth-hive, figured in that gentleman's book as a "moveable comb-hive with full glass arrangement," was Liguriansed in the autumn of 1863. The following year was not a very good one for honey, and I did not obtain much from any of my hives. This stock would probably, however, have

done better than it did, had I not neglected to furnish supers until all the available space below was so filled that there was scarcely room for the bees to pass up to them. The result was quite a moderate yield—not more than about 25 lbs. in the supers. I did not then remove any honey from the main hive, as I wished to leave an ample supply for the winter.

In April, 1865, this hive was examined by an expert, who assured me it had so much honey that there was insufficient room for brood. I therefore had three frames removed, with honey weighing about 20 lbs. Some weeks afterwards I took out yet another frame of honey and breed to replace a drone-breeding queen in another hive, an operation which proved successful.

The bees then entered upon their summer's work, to facilitate which, and to avoid the error of the preceding year, I took a super of the same dimensions as the hive proper, furnished with a full set of frames, and, first removing the crown or honey board, placed this super directly upon the hive. The bees entirely filled it with fine honey, which I removed on the 6th of October, and found to weigh 83 lbs. nett. I also took, a few days later, combs weighing 15 lbs. from the main hive, leaving still an ample store for the winter. In addition to these 98 lbs., I had taken, as before stated, at least 25 lbs. from the same hive in the spring, most of which, however, was gathered in the previous year. Still this stock of Italian bees has yielded me this season upwards of 100 lbs. of honey; while black bees, having the same range, have never given me much more than half the quantity.

The industry of the Ligurians is very remarkable. As an example of it, I may state that the three frames from which honey was taken having been returned to the hive, the bees, although so late in the season, at once set to work to repair damages, and have actually filled up two-thirds of these frames with new comb, and even deposited honey in a portion of it.

SUPERS AND COLLATERAL BOXES.—So far all my experience has tended one way, and that in favour of ample supers. The smaller and more numerous the supers, whether tumbler, bell-glass, or box, the less has been the surplus honey; and my success has been least of all when trying to induce bees to travel laterally. I believe it to be about as unnatural for bees to work in collateral boxes as for hot air from a furnace to travel horizontally. You may force either, but it is not economical to do so.

Mr. Langstroth tells me that I erred in removing the crown or honey board before placing the super, as it rendered the deposit of brood in the upper box more probable. He recommends leaving this division of the hive, but with ample cuts in it for the passage of the workers. He also advises simple bars, instead of frames, for these large supers; coinciding in this, I believe, with your "DEVONSHIRE BEE-KEEPER."

WINTERING BEES.—Our winter climate is a very variable one. A difference of 20° or more Fahrenheit in as many hours is by no means unusual, nor unaccompanied by corresponding hygro-metric changes. In this climate my hives, wooden boxes of Langstroth's design, have been freely exposed, without the least protection. For winter ventilation I have merely removed the supers, leaving the passages in the crown board uncovered, giving both the air and the bees free access to the upper part of the hive, and have found this a sufficient winter ventilation.

I have, however, this season, at the recommendation of Mr. Langstroth, removed the crown-beards from the hives, and placed pieces of old blanket directly upon the frames. This I think will improve the ventilation, dryness, and general condition of the hives, although I do not think that my bees have ever seriously suffered from dampness, while numbers have occasionally perished from the low temperature upon the outer combs, when no winter passage has been left or made through these. This passage should always be made in the autumn. It is easily done by passing the blade of a knife vertically through the middle of the comb on each frame. If this is done late in the season the mutilated cells will be cleared away by the bees but not rebuilt, and they will then have the means of rapidly retreating to the central part of the hive; while without this passage they might be chilled and die upon the outer combs.

COMPARATIVE LONGEVITY OF THE LIGURIAN AND BLACK BEE.—On the 7th of June, 1862, I introduced a Ligurian queen into a strong colony of black bees. She was courteously received, and laid some eggs, but afterwards was probably killed by a rival raised from the larva of her predecessor; as your old acquaintance Mr. H. C. Hermann, author of "The Italian Alp Bee," examined the hive about a month after her introduction, and assured me she was missing.

I observe that Mr. Neighbour, in his late book, reports the

death of Mr. Hermann. Allow me to assure him the report is erroneous: Hermann still lives and is working among bees. For several years he kept a cigar shop in a suburb of Philadelphia, and attended to the bees of amateur apiarians. One of my neighbours sent him to Europe for Ligurians. He secured many stocks, but had a long return passage and lost every bee. In the spring of the present year he removed to the country, hoping to improve his fortunes by going more largely into bee-keeping than he could do in the city.

To return to the bees. I very soon found the progeny of the Ligurian queen among the workers, and hoped also to find Hermann mistaken. Next spring, however, the number of Italians was stationary, and all the young bees were black. I frequently watched the return of the workers, counting them to ascertain the proportion of Italians, and arrived at the conclusion that they were about the thirtieth of the working population of the hive. About the 16th of July, 1863, I obtained another Ligurian queen, which was introduced by Mr. Hermann. She was well received, and six weeks afterwards I found her progeny very numerous. The number of black workers rapidly decreased. All the drones were killed; and long before winter there were no black bees left in the hive.

Thinking this rapid disappearance extraordinary, I wrote to Mr. Langstroth, asking him if my black bees had not been destroyed by the foreigners. My friend replied that the Italians were doubtless innocent of apicide; but added, "the life of a bee in the working season is very short." As regards the black bee this is strictly true; but experience satisfies me that the Italians are hardier and live longer than their black brethren, the progeny of the first Ligurian queen having maintained their position in this hive for nearly twelve months, in numbers lessening with time, it is true, but by no means rapidly; while in less than one-fourth of that time every black bee perished.

—W. G. MALIN, Philadelphia, U.S.

FICKLENESS OF BUTTER.

For the last seven or eight weeks I have been unable to eat any butter from the cream from one cow, all I have, which has been treated in every respect as she has usually been, when I have had no difficulty in the matter. The cow is the same, and appears in perfect health. Her food consists of mangolds and bran and chaff. Before churning, the churn is scalded out, and thus made warm, and the cream is warmed by being placed in hot water. When churned it thickens to a certain extent, and butter seems nearly formed; then of a sudden it seems to dilute, as it were, and no amount of churning can alter it again. What makes it more extraordinary is that twice since this has happened the butter came all right (and once in five minutes), the treatment being in every case the same, as was the food.—A. L.

[We publish the foregoing, because we have heard of similar instances, and we shall be obliged by any expiatory or remedial information. To obtain butter with the greatest certainty, and in perfection, the cream should be churned daily. This cannot be done where only one cow is kept. A temperature of 56° in the dairy causes all the cream in the milk to rise. There are times when a cow's milk differs very much from its ordinary state.]

OUR LETTER BOX.

VARIOUS (R. J. of E.).—The address of the Hon. Mrs. Arbuthnot is Inchmartine, Inchture, N. B. Mr. Pigeon, of Lympstone, Devon, was very successful with La Fleche last year. Buy of some who advertise in our columns. There is a book called the "Standard of Excellence," published by the Poultry Club. We believe the price is 8s.

INDIAN CORN FOR FOWLS (Alpha).—We have nothing to add to or to alter in what we said on this subject. In our experience we find it too fattening for laying-hens.

MAIZE, OR INDIAN CORN (Idem).—We are opposed to a maize diet, it is too fattening, and has not stay enough in it, nor are we friendly to glazed houses and such luxuries. They keep birds clean, but they neither produce eggs nor profit. If you will let your fowls live like fowls they will do well; but if you pet them they will be unprofitable, as pets mostly are. Let them out in all weathers, give them oat or barley meal mixed with water in the morning, a feed of maize at mid-day, meal again in the evening, and they will be less trouble and more profit.

ROOF (Subscriber).—With the advantages your chickens have they should have no sickness. We think that you allow the hen her liberty too soon; she will drag her chickens to death at this time of year. In the winter and early spring the hen should be under the rip till the chickens are at least ten weeks old. Add chopped egg and bread and milk to your chickens' food, and give your Bantams bread and ale, and camphor in their water.

PULLED DYING SUDDENLY (A Beginner).—The death soon after laying, and the soft eggs you mention, the liberal feeding, and the confined space, lead to the conclusion that your poultry are too fat, and that the pullet died from a blood-vessel rupturing on her brain. Give less food, and less nourishing food; omit the crushed barley and the dinner scraps. Have some linny rubbish for the fowls to pick up.

SCALY LEGS OF COCHIN CHINAS (K. J. C.).—We are afraid your hens are no longer young. It is a proof of age in almost every bird when the scales of the legs thicken and become hollow. It is cruel to pull them off, and the birds are by no means useless because they are not young. Cochins are subject to this at an earlier age than any other breed.

BREEDING (F. A. D.).—In our opinion, no breed can be maintained without the judicious introduction of fresh blood. To breed in-and-in is to lose caste and quality. An inferior cross sometimes becomes necessary because the inferior bird possesses the quality its superior lacks. Those who are often at the head of the prize lists deem themselves fortunate if they can be sure to reproduce that which has been already successful.

BLACK COCHINS (Idem).—These birds were first bred in Cambridgehire, and by a cross between White and Buff birds. They were shown at an exhibition at Cheveley Park. If properly judged by competent men, a Cochin cock with his sickles removed, would certainly be disqualified. Nothing tells with judges so strongly in favour of a bird as its being honestly shown.

SOAKING EGGS (R. S.).—Two days, or even three days, before hatching, the eggs should be put in lukewarm water for ten minutes or more, and all that have live chickens in them are chattering and tilting in all directions.

POWTER COCK ILL (Subscriber).—I am afraid your Powter cock has a cancer in his crop, and the discharge from it is what you call "a milky kind of pap." If such is the case you had better kill him, unless you can feel from the outside that the cancer is detached. In that case you may open the crop, cut the cancer clean out, wash the crop clean, and sew it up. If, however, you think there is no cancer and it is only indigestion, try pills containing one grain of calomel on alternate days for a week, and feed on bread and milk soup; put, also, a little sulphate of iron or green copperas in his drink.—E. P. E.

INCUBATOR (Fancier).—We have seen Brindley's Incubator, advertised in this Journal last week. It is very simple, easily managed, and so compact that it might stand by the fireside. The cover is of glass, so that the whole process of hatching may be witnessed.

CANARIES DYING (Canary Lover).—I have examined the seed sent. The hempseed contained a large proportion of light seeds; but the remainder, though small, were fresh and good. The Canary seed looked small and pale, and there were many whitish seeds among it. On tasting, the third seed had a hot unpleasant flavour, not unlike bad nuts, and a large proportion of the seed was so flavoured. There was a grain of rye among that seed, and that had a malted taste. I am inclined to think that it was foreign seed; that it had been damaged and kiln-dried, and consequently that it was the cause of your birds dying. I am very sorry to hear of the death of so many nice birds, but it does occasionally happen to others besides "CANARY LOVER," and we are all liable to lose our pets, and even to be poisoned ourselves by other people's ignorance or carelessness. It is impossible for me to say where immaturity from such accidents can be insured against. I cannot recommend any dealer in particular, nor do I know anything about foreign birds.—E. P. BRENT.

CANARY PECKING THE WIRES (Oscar).—The trick your bird has of biting his wire cage, I think, is merely a habit and not a sign of illness; but if the wires are brass they may make him ill; therefore it would be advisable to put him in a cage with iron wires.—L. P. E.

REDBREASTS (Robin Redbreast).—They are often kept in cages, and I do not think they are difficult to keep. London fanciers keep them in a Nightingale's cage; but I think such cages are scarcely large enough. I prefer a common breeding cage. Feed on chopped bread and cheese, a little cooked meat shred, hie, suet pudding, boiled carrot or hard-boiled egg as a change, and with cleanliness and the use of the bath I have no doubt you will find them hardy enough.—E. P. BRENT.

TAMING AND TEACHING A PARROT (A. S. A.).—The bird should be kept in the room with you as much as possible, and frequently spoken to. Give it occasionally any little article you think that it may fancy, such as a piece of loaf sugar, apple, nuts, &c., but no meat, fat, or bones; every time you approach the cage speak kindly to the bird, and be careful not to allow any one to frighten, tease, or offend it. It will be very sensitive to anything of the kind, and would not soon forget it. When giving it fresh food or cleaning it out continue to speak to it, and we have no doubt that the bird will shortly lose its wildness. Some are like children, more easily managed than others, much depending on the temper of both, but great kindness and affection will in time tame the most fractious. Any words you wish the bird to say repeat to it as often as possible, taking care always to repeat the same words.

TAYLOR'S AMATEUR'S BEE-HIVE (B).—It is high-priced. Write to Mr. W. J. Pettitt, Hive Manufacturer, Dover; or to Mearns, Neighbour, Holborn, London.

TRANSFERRING BEES (C. A. M.).—Transferring bees from a common old-fashioned straw hive to a hive with supers, may be performed in April, and the middle of a fine day is the best time for doing so.

LIGURIAN BEES—WOODBURY HIVES (W. C.).—Mr. Woodbury, of Menst Radford, Exeter, will supply you with a stock of Ligurians, and will state their price upon application being made to him direct. The month of April is about the best time for obtaining them. Unbrashed rye straw is the best material for straw, and yellow pine for wooden hives. Full working instructions for making Woodbury frame-hives are given in the 15th edition of "Bee-keeping for the Many," published at this office, and sent free by post for five stamps.

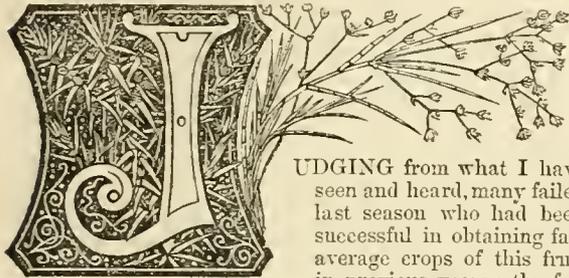
COMMON AND LIGURIAN BEES IN ONE APIARY (A. R., Birmingham).—It is of no use to attempt isolating the Ligurians unless you could keep them some miles distant from all other bees. The original Ligurian queen will breed pure Italians under any circumstances as long as she lives. The month of April is about the best time for transferring bees to frame-hives, and it will be well in so doing to remove surplus drone combs. You will find much valuable information bearing upon the subject of your letter in page 61 of our eighth Volume.

WEEKLY CALENDAR.

Day of Month	Day of Week.	MARCH 20—26, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
20	TU	<i>Chorozema angustifolium.</i>	52.0	34.3	43.1	15	5 af 6	10 af 6	1 8	6 11	4	7 38	79
21	W	Sun's declination 0° 16' N.	51.1	32.8	41.9	17	3 6	12 6	42 8	morm.	5	7 20	80
22	TH	<i>Cantua dependens.</i>	50.7	34.6	42.6	18	1 6	14 6	33 9	16 0	6	7 2	81
23	F	<i>Cantua bicolor.</i>	50.9	33.3	42.1	16	58 5	15 6	29 10	17 1	7	6 44	82
24	S	<i>Cuphea platycentra.</i>	48.6	31.9	40.2	13	56 5	17 6	28 11	9 2	8	6 25	83
25	SUN	PALM SUNDAY. LADY DAY.	51.1	32.7	41.9	14	54 5	19 6	after.	53 2	9	6 7	84
26	M	<i>Cuphea eximia.</i>	51.8	3.23	42.0	14	51 5	20 6	40 1	50 3	10	5 48	85

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 50.9°; and its night temperature 33.1°. The greatest heat was 69°, on the 25th, 1833; and the lowest cold 14°, on the 25th, 1850. The greatest fall of rain was 1.11 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse

STRAWBERRY CULTURE.



LEARNING from what I have seen and heard, many failed last season who had been successful in obtaining fair average crops of this fruit in previous years: the following may, therefore, interest some of your readers, especially as in my case the crop of 1865 was the finest I ever saw, particularly that of the British Queen. In 1864 I gathered in one day from six rows of Black Prince, twenty-four plants in a row, 96 lbs. of fruit for preserving. This crop was seen by many gardeners, who pronounced it to be the finest they had ever seen. My cultural operations do not differ much from Mr. Read's (see No. 256 of this Journal). In fact, while writing this I feel I am occupying space which might be better filled; but, as Mr. Read justly remarks, "a very important feature of THE JOURNAL OF HORTICULTURE is, that discussion and intercommunication are invited on all matters of interest to its readers," and I may add, that if such intercommunication, &c., is carried on in a friendly spirit it will do much to advance the cause of gardening and gardeners: therefore I offer this for insertion.

The sorts which I have found most satisfactory are the Black Prince for early, Keens' Seedling for second, and the British Queen for late production. On a north border the British Queen does well, and the fruit is about ten days later than when grown in the open bed. Several others of the older sorts have been tried, but are not so good as the above. The comparatively-new sorts I have not yet fairly tested, but the following I have now under trial:—Sir Charles Napier, Sir Harry, Frogmore Late Pine, Elton, Eleanor, Carolina Superba, Princess Alice Maude, and Oscar, of all which I will speak when they have fruited this season. I also intend trying all the new sorts as soon as I can obtain them, as good Strawberries are a great feature with my employers.

The varieties I first named supplied the table last year without intermission from the first week in April till the last week in July, a period of four months. I commenced picking forced Strawberries to-day (March 7th), and hope to continue somewhat later this season than last with some of the sorts above-named: therefore still further prolonging the season of this fruit.

I may mention that the soil here is a very heavy loam of one foot deep, resting on strong brick earth; this soil I believe to be more natural to the Strawberry than any other, for I have always found it do best in this description of soil. The following is the mode of culture which I have practised.

The following is the mode of culture which I have practised. As early in the winter as possible I select a piece of ground well exposed to the sun, trench it to the depth of 2 feet, putting a good dressing of manure at the bottom, and laying the surface rough for the action of the frost. In spring a crop of Potatoes or any other vegetable of quick growth may be planted, but care should be taken to keep the soil quite free from weeds; for, from experience, I find that Strawberries dislike weeds as much as any plant I know.

Early in June I select from each well-established plant eight or ten of the best runners, and layer them in pots filled with rich soil (I prefer this method to pegging on the ground in heavy soil), keep them well watered till they have taken good root, which they will have done in about fifteen or twenty days if they have been properly layered, and the soil has not been allowed to become dry. They are then severed from the parent plants, and transferred to a place well exposed to become a little more hardened; meanwhile the crop is cleared from the ground, and a good dressing wheeled on, and dug in to the depth of 14 or 15 inches. The ground is then worked down nicely, and the plants carefully turned out of their pots, and planted in rows 2 feet 3 inches apart, and 2 feet asunder in the rows. Three rows are planted in a bed, leaving the space of 2 feet 9 inches between the third and fourth row; there is consequently room to pass between the rows to water, gather fruit, &c., without treading the bed all over alike or bruising the fruit at every step. The planting should be performed during the afternoon if possible, as water can be copiously given towards evening without much chance of damage; whilst if the plantation is watered in the forenoon, and the sun happen to shine brightly soon afterwards, more or less injury will be the result. The plants will now require plenty of water in dry weather. Liquid manure will greatly benefit them till September, by which time they will be well established, care being taken during the whole of their progress to keep the runners cut off and weeds pulled up as soon as seen; but I never allow a spade or fork to be used near the plants after they are planted.

As early in November as I can procure it I cover the ground with a lot of seaweed from the beach, and let it remain all the winter untouched; in spring the weeds will require attention again, but now and during the whole of the summer will be found the advantage of the mulching; it will prevent the weeds growing so fast as they otherwise would do, save watering to a great extent, and keep the fruit as clean as plates would, and as free from slugs, &c., as any precaution that could be adopted, whether tying or anything else. If seaweed fall short, I use short litter from the stable-yard, but, as Mr. Read remarks, ladies do not like the idea of eating Strawberries that have been laying on such material. Besides, the seaweed has another beneficial effect on the plants—the salt contained in the weed, when procured from the beach, is washed down to the roots, affording food to these, and keeping them nearer the surface. The directions for after-cropping &c., are the same as for the first year, only stronger liquid manure may be given as soon as the crop has been gathered. My experience on light soil has taught me that the ground

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should be made firm by treading, as soon as the plants are established and mulched as above; I have never found this to fail in producing a good crop of fruit.—JOHN MAY, *Westfield, Havant, Hants.*

STOCKS FOR GRAFTING ON, AND THE RESULTS.

HOWEVER artificial the process of grafting may appear to those who for the first time see it performed, it has its counterpart in nature: branches of trees overlying and pressing against each other eventually unite, and no doubt it was an example of this kind that first led some experimentalist to try to bring about the same result by tying two such branches together, or perhaps branches belonging to different trees. Success would induce further experiments, and eventually a scion taken from one plant and inserted in another was found to grow when the operation was performed at the proper season and in a suitable manner. The process most likely to lead to success was no doubt found out by degrees and after a due number of failures. How many centuries ago this portion of our craft was in course of perfecting itself, it is needless to inquire; but as there was no JOURNAL OF HORTICULTURE in those days, and the modes of disseminating information of every kind were slow and imperfect, we may readily infer that a new mode of effecting the desired object might not unlikely remain for a long time known only to the operator, especially if he assumed that "mysterious secrecy in the matter which still lingered amongst some "knifemen" in large nurseries as lately as thirty or forty years ago, or perhaps still later than that. A stranger happening to stop and look at these mysterious workers was a signal that their knives wanted sharpening, that some scion had to be sought after, or that some work or other in the distance had to be done; thus the inquisitive looker-on never came at the right time to see the operation performed. Happily these times have passed away, and though dexterity in the manipulation enables one man to be more successful than another, there is no secret in the affair, and practice and experience, aided by other favourable circumstances, usually meet with success.

The out-door grafting of fruit trees is a very common affair in counties where orchards abound, and is often done very extensively by ordinary labourers. Certainly some little knowledge is necessary, but the time at which the work is done has more to do with the success than the mode of carrying it out. In Kent it is deferred till much later in the spring than is the custom in many places, and the result is usually satisfactory. I have seen several thousand scions put on in May, and nearly all grew. There is, however, a description of grafting much more difficult than that of ordinary fruit trees, the parts operated upon being so much smaller, and in some cases the affinity between stock and graft is not so great, leading to more uncertainty, and these cases seem multiplying every year. Thus any choice plant that it is necessary to propagate quickly, is at once "worked" in some way or other, and this "working," as it is called in nursery phrase, comprehends a considerable series of objects differing materially from each other, and, as stated above, their number is yearly extending; for not content with operating upon the class of plants having woody fibre, fleshy-rooted herbaceous plants now and then are grafted, and with success.

Of all the plants subjected to the operation of the knife, in the way of grafting, the Cactus is perhaps the most quickly and easily grafted, while some skill and dexterity is required to operate on a hundred Camellias and get ninety-nine of them to grow, and I believe there are many plants more difficult than this, and resinous plants are not always the most successfully managed. With many of the classes of variegated plants the chances of success are greater. Hollies are worked by the hundred, and the new deciduous plants with remarkable foliage, recently introduced from Japan, are no doubt thus propagated to the utmost extent that a skilful propagator can, and where stocks of a suitable kind are forthcoming, there seems to be no reason to doubt the after-success of the worked plants, whilst the peculiarities of each sort will in due time be presented by a greater number of individuals than there could have been had each plant been supported by its own roots only.

Grafting is also often performed by amateurs and experimentalists for purposes of curiosity only, and sometimes with rather singular results. I remember its being stated, about forty years ago, that when the purple *Cytisus* was budded or grafted on the *Labrum* (which it often was in those days), and did

not succeed, the contact of the bud or scion with the stock nevertheless exercised on the latter an effect that could be discerned in the bark, sap, or foliage. I believe the same to be the case with the Copper Beech, but of this I am not so certain. Grafting, however, is often practised on plants that may be termed only half-shrubby, or, in some cases, purely herbaceous. When double *Dahlia*s first made their appearance, it was thought that the best way to increase them was by grafting the young shoots on the fleshy tubers of single varieties, which, like the single *Camellia*, were obtained in greater abundance. *Geranium*s have also often enough been grafted, but more for curiosity than with a view to multiplying the variety; and the same may be said of the *Fuchsia*. *Azalea*s, however, are now almost all subjected to the "working" system, and with good results; and *Rhododendron*s of the best varieties could never have been increased so rapidly had recourse not been had to the assistance of other less-favoured members of the family to act as stocks. Many other plants are in a like manner increased to a wonderful extent by grafting and budding, and more are daily being subjected to these modes of propagation.

It need not be wondered at that a proceeding so fraught with advantages should also have its drawbacks, that now and then differences of opinion should exist as to some of its details, that there should be differences of opinion on the merits of the stocks used. I believe Mr. Barnes, of the Camberwell Nursery, was the first to point out the best stock on which to work the Indian *Azalea*, and a few years ago there was some contention amongst *Rose*-growers, as to whom was due the merit of first trying the *Manetti* stock for the *Rose*; latterly, however, there has been some difference of opinion about this stock, and the *Briar* has been again put forward. Of the respective merits of these stocks it is not my intention to offer an opinion; but I would like to see both dispensed with if *Roses* could be coaxed to grow on their own roots. This subject, however, has been already discussed by several writers in the JOURNAL OF HORTICULTURE, and, in connection with it, I will only allude to a plan that has been of late adverted to by several—that of planting *Rose*s worked on the *Manetti* so deeply as to bury part of the plant as well as the stock, a proceeding which is said to facilitate the production of roots above the graft, and some writers have advised the stock and lower roots to be cut away when the upper tier are formed. If the *Manetti* is of no further use than this plan would imply the sooner it is done away with the better, and the plant started on its own roots, instead of having to suffer the inconvenience of its foundation being cut away. Besides, unless the plants are worked very low indeed, planting them in their final quarters so much deeper in the ground than they were before, must be hurtful in other ways, as there are comparatively few plants that like to be planted so deeply, however prone they may be to send their roots downwards. We ought as far as possible to imitate Nature in all her works, but we see no instance in which she buries the collar below the surface, why, therefore, should we do so? Assuredly the result is no better. It may, however, be said, that transplanting is an artificial proceeding altogether, and so it is, for with the exception of trees or plants being torn up and washed away by floods in rivers, or such tornados as we hear of in tropical countries, and deposited somewhere by accident where they can grow, the transplanting of trees by natural means is less common than grafting, so that there is no analogy between the two; but layering is a purely natural mode of multiplying plants, and seed still more so, and rooting in both these cases is from the surface. All this has been repeatedly urged by the advocates for shallow planting.

Instead of pursuing the subject of *Rose* stocks further, I will now enter on that of stocks as adapted for fruit trees, which has again, for at least the twentieth time, occasioned discussion in the pages of gardening periodicals, and latterly I was sorry to see that a bitterness of spirit was imported into the matter which ought not to have been, especially as the difference of opinion seems to be one likely to affect all kinds of grafted or worked plants, and I may add many that are not worked. In other words, it may be taken for granted that every tree planted deeper than is good for it, endeavours to correct the error that it made, by directing its roots to the surface, or if it is incapable of so doing, it will in many cases emit roots from that part of its stem which is just sufficiently below the surface to protect the roots when young from the effects of dry weather; or, where sufficient moisture can be obtained, the roots are formed on the very surface, as sometimes is the case with *Willows* in swampy ground; or a still more notable example is

that of the Grape Vine, which under favourable circumstances sends out roots innumerable into the tempting humid atmosphere. But more on this head when the subject of stocks has been adverted to.

It would be difficult to trace back the history of the stocks that have been at times recommended for our ordinary fruits. The Peach and Almond for the Peach, Quince and White Thorn for the Pear, and the Paradise Apple for the Apple, must assuredly have been tried long ago, and by successive writers and practitioners recommended at various times in preference to the stocks most generally in use. Now, though foreigners, especially Americans, say we are slow at availing ourselves of advantages within our reach, assuredly if the stocks above named had possessed superior merit to those they were tried against, there is, and has been, sufficient discernment in the cultivators of these fruits to perceive it, and these stocks would have made their way into general use long ago. However, these stocks are not the most generally used at the present day, and it behoves us to find some solution as to, in schoolboy phrase, "the reason why."

Commencing with the Peach—I well remember the time when the Peach stock was hailed as a step in the right direction, and was expected to do wonders, the knotty protuberance so manifest in most Peach trees worked on the Plum stock, was an eyesore said to give way when a Peach stock was substituted, and I have certainly seen some fine trees so grown, but by-and-by it was whispered about that now and then such a tree would fall into ill-health, and in spite of its being supported by one of its own kin, death would overtake it at an early age. The Almond, I believe, was still more liable to this misfortune, and though trees on both stocks may occasionally be met with, they are not in sufficient number, nor in such a healthy and vigorous state as to warrant the general adoption of these stocks. The reason of the Peach stock not answering would seem to be its inability to perfect itself and the variety worked on it in our cold soils, and in the dull summers of this country as compared with those of its native land, while the Plum, being probably indigenous, performs the task better. Local circumstances, doubtless, modify these results, and some places favour the growth of the Peach stock; but as a rule these places are few, and there are, perhaps, fewer trees worked in this way now than twenty years ago.

Taking the Pear next, the comparative merits of the Pear and Quince stocks ought not to be judged by the same standard as that which guided the decision in the case of the Peach, for both are hardy. I will say nothing of the Pear on the White Thorn, Mountain Ash, and other stocks on which it is said to be grown, but most generally as an object of curiosity, but will proceed to the merits of the two stocks on which the tree is most commonly worked, and on which the controversy has lately turned, and endeavour to offer some solution of this knotty question. In the first place, let us examine the two plants as they generally present themselves, and, reasoning from that, the truth may, perhaps, be arrived at. On examining the two what a difference will be perceived in their growth, that was not before thought of. In this county both fruits, especially the Pear, are grown somewhat extensively. The Quince is certainly not so much grown in this neighbourhood, and only now and then a tree is met with until we travel a few miles farther, and then this fruit is seen in all its glory. Now, it is not my intention by any means to condemn the Quince as a stock for the Pear, on the contrary, there are some cases in which most likely it may be used with advantage. I am, nevertheless, of opinion that there is no instance in which a Pear so worked has produced anything like the quantity of fruit it has done when grown on a stock of its own kind. The Quince seems altogether of more limited growth, and in no case when I have seen it has it approached the majestic growth of the Pear tree, when on a stock better suited to its requirements. Taking the quantity of fruit that full-sized trees of each kind may be said to produce, I have in no instance seen a Quince tree yield more than one-fourth of what the Pear will do, and this is a wide difference. Certainly this immediate district favours the Pear tree more than the Quince, but I have not heard of the latter assuming anything like the proportions of the former in any place where it is grown.

It is just, therefore, to assume that the Quince is of humbler growth, and, consequently, more likely to check the growth of what it has to support than to augment it, and as such may be more useful when trees are grown in a dwarfed or stunted condition, as small pyramids, or against low trellises, walls, or the like, instead of assuming the lofty proportions and vigor-

ous condition that would result from the tree being worked on a stock of its own kind; but this condition of things is also modified in other places, where it is possible that the Quince may be of service; for the Pear and Quince do not by any means both like the same soil, and here is the secret of much of that difference of results which is sometimes attributed to mere opinion. The Quince grown as an independent fruit tree thrives best in a damp place, say by the side of a ditch, or in a similar position not too dry nor light. The Pear, on the contrary, seems to thrive best on a dry stony soil that will allow its roots to descend to a good depth, and still to find nourishment in the open stratum through which they pass, the whole being free from all stagnant water, and ready to receive any amount of rainfall without showing much difference at top. Such a soil is the one in the immediate neighbourhood of this place, where the Pear is to some extent cultivated, though not to the same degree as the Plum, Apple, and Filbert. Still there are many thousands of bushels grown in favourable years at no great distance from us, and these are mostly produced on large standard trees on stocks of their own kind, with trunks a foot or more in diameter, and scarcely showing any signs of ever having been worked, the stock and scion keeping pace with each other. I will not say how many sieves report has given credit for one of these large trees yielding in a favourable season, but the produce is said to exceed that of any Apple tree. The fruit of the Quince may very often be all-gathered without the use of a ladder, the trees being so low; but then I am not certain the Pear tree would not be small in such a place also; therefore, we must not confuse the relative position of the trees, but, taking the matter in its broadest sense of competitive merit, ask whether the Pear grown on the Quince stock in the most favourable situation for that stock, or the Pear grown on its own stock in its most suitable position, produces the more fruit of good quality. I, for one, have no hesitation in giving the palm of merit to the latter; other growers may, perhaps, think differently. What is here stated may, perhaps, provoke discussion; if so, let it be of that courteous kind which becomes the calling in which we are all engaged.

My remarks on the Pear having been extended further than I purposed, but little will be said on the Paradise stock for the Apple. Its only merit, so far as I could ever learn, is, that it tends to dwarf the growth of the variety grafted upon it. Some of its admirers assume that trees on the Paradise begin to bear sooner, but that is questionable, and most certainly a smaller quantity of fruit is produced on a given number of trees of, say, ten years old, of this kind than by those on other stocks, when the advantages are alike; and possibly in cases in which the trees supported on the Paradise stock do so well, this result is due to the soil and situation favouring that variety. I imagine, however, that it is not the same sort of soil as that mentioned as being the best for the Quince, but, on the contrary, a dry soil; yet on this point I am by no means certain, for I have had little experience with the Paradise stock, and have yet to learn any advantages it possesses over the more common Crab. The desire for novelty and a wish to have something different from their neighbours are inherent in many persons, and these feelings are laudable too in their way; they have at various times during the last fifty years called the Paradise stock into notice, but it has never to my knowledge made that figure in the world that its antagonist has done, and for every basketful so produced, some waggon-loads may be set down on the other side; therefore, unless as above stated for some special purpose, the use of the Paradise stock is not advisable. It may, nevertheless, be worthy of notice from those who prefer a single fruit to a bushel of the same obtained in the common way, and such persons are justified in riding their hobbies as hard as they like, but the market basket would be long in being filled by this plan, and that after all is, perhaps, the true way of looking at the matter.

With regard to planting fruit trees so deeply in the ground as to bury the part worked 4 or 5 inches under the surface, and induce the upper portion to emit roots, no better argument could be used against working at all; but, independently of that, is not planting so deeply bad practice? In general shallow planting is recommended, everywhere I might almost say, and to reverse this merely to induce the formation of roots where none existed before will no doubt effect that object, but that does not by any means justify the means adopted. Within a mile of where I now write, there are hundreds of Apple and Cherry trees that have been planted on the surface and the soil heaped on the roots, making a mound of about half a cart-

load or so around the collar of each tree, and the result is favourable. Gooseberries and Currants have sometimes been treated in the same way, but the plan is all but abandoned, and in the case of Apples only a few practise it. Cherries, however, on stiff ground seem to be benefited by the practice, but on dry stony soils of upland districts the benefit is less apparent, and the plan has been abandoned by many growers; nevertheless, some old hands still adhere to it. There is an inconvenience attending it where the ground is in tillage, but when in grass this is not the case.

I cannot conclude this article without thanking Mr. Pearson for his excellent article on the Camellia, a plant which is managed the reverse of well in many places, and though I hardly agree with him altogether as to the soil he recommends, I am far from being certain that he is wrong. Most excellent Camellias are grown in different parts of Yorkshire, and, no doubt, in the adjoining counties also, and advice from growers there is valuable; but somehow I have always been of opinion that the water a plant is fed with exercises as much influence on its well-doing as the soil it is grown in. For instance, water from a chalk well, continuously supplied to Heath's planted in peat, in time is fatal to the plants. Rain water we are perfectly assured is in all cases grateful, and for tender plants ought always to be used.—J. ROBSON.

PEAR SCIONS ROOTING.

I HAVE read with lively interest the discussion on Pear scions emitting roots above the stock. The affirmative I can fully endorse by practical proof. I have very recently been transplanting a number of Pear trees, and one of them is ready for Mr. Scott with a beautiful bunch of roots "from above the junction of the scion and stock." The spongelets are very fat and active, while those of the stock are dormant. The tree is a standard, about 5 feet high, stem 2 inches in diameter. If Mr. Scott will send me a dozen Mrs. Pollock Geraniums I will send him the tree for ocular demonstration. Of course he will pay the £1 to the Institution.—T. MIDDLETON, *Gardener to Sir W. W. Wynne.*

WINTERING VERBENAS UNDER BELL GLASSES.

HAVING for the last four years adopted a particular method of wintering Verbenas, Calceolarias, Lobelias, Ageratum, and even Pelargoniums, which I have never seen described, I venture to give my experience and mode of proceeding, not for the purpose of instructing professed gardeners, but in order to bring this class of plants more within the reach of such amateurs and cottagers as cannot or will not afford themselves the luxury of a greenhouse or frame. Even by those who possess these useful adjuncts to a garden, this mode of keeping them through either a wet or frosty winter will be found easier and more certain than the old systems. That it may not prove a success with all on the first trial is probable, but it should not, therefore, be hastily condemned, for many will set about it the wrong way, or omit doing something essential to success.

The advantages of the method are, that the first outlay is small, that the skill required to succeed is only such as is possessed by every one who cultivates plants as a pastime, and that very little labour is required. That I was not so successful the first season as I now am is true; but since I adopted this method I have never been without a sufficient supply of these usually fastidious pets, and most seasons I have plenty to spare for my more unfortunate neighbours.

The time for commencing operations is not the same for all the above-mentioned plants. Verbenas should be put in from the beginning to the end of October; though I have done so and succeeded as late as the 25th of November, I do not advise waiting so late. For Ageratum and Calceolarias my advice is, wait as late as you possibly can, but insert the cuttings before the plants are affected by frost.

This is my mode of proceeding:—A fortnight before propagating I dig a border 2 feet wide and long in proportion to the number of bell-glasses required. It should be immediately under a south wall, and slope from the wall so that the water may be thrown off. Over this border spread sand an inch thick, and fork it well in, so as to make a sandy open soil in which to plant the cuttings. On this I place the bell-glasses

for a few days before planting, that the soil may become heated. I make my cuttings in the usual way, and dibble them in as thickly as possible—say about half an inch apart. I have now of Purple King Verbena a bell-glass 16 inches in diameter, in which were put a hundred cuttings; eighty-eight are looking well, and have already furnished one set of cuttings, the others were devoured by a slug which found its way in, and grew fat on Verbenas for a few days, but *requiescat in pace*. I then give a good drenching with water at 90°, put on the bell-glass whilst the soil is still muddy, press the glass down firmly, shade from strong sun, and water over and around the bell-glass every third morning until the cuttings begin to shoot. As soon as they start I give air by removing the glass on every fine day, and occasionally wipe the inside, and I fork the soil among the plants. If kept well aired and tolerably dry a little frost will not hurt the cuttings, though if the frost become severe protection must be given by means of a sheaf of straw, tied together at one end, and of a convenient length, so that when pushed over the top of the bell-glass it may cover it all round. Treat the Ageratum, Lobelias, and Calceolarias in the same way, and in March each Verbena will furnish two cuttings, which may be struck as before, and each Ageratum and Calceolaria will afford one cutting. I have wintered Pelargoniums and Fuchsias in precisely the same manner. Though I do not recommend this method for them, it is better than fagotting them in a cellar.

The objections which may be raised against this system are:—Firstly, That the roots are necessarily more or less injured at bedding-out time. Secondly, That the plan may do for a mild climate, but will not answer in a cold one. Thirdly, That if the climate is very wet, damp will be the destroying agent.

To the first objection I will answer, that though the roots may be a little broken, and the plants require water and a little attention for a few days after planting out, they do not sustain material injury, and will prove hardier and less liable to mildew than if they were pot-bound, or allowed to become too dry in winter.

To the second objection my answer is, that where my bell-glasses stood last winter the thermometer registered 25° for three consecutive nights, yet not a plant suffered.

With regard to the third objection, I may remark that this winter has been a severe test, for we have scarcely been two days without rain, yet not a single plant has damped off, or shown an inclination to do so. The Lobelias and Calceolarias are, perhaps, a trifle too tender, but exposure to March winds will put that all right.—PURPLE KING.

[We know that most of what "PURPLE KING" relates can be done, but only by care and watchfulness. In such positions hand-lights have been used pretty successfully. In fine weather they are better, in bad weather they are not so good as large bell-glasses. As our correspondent speaks of the little expense, we presume he uses those of coarse coloured glass. Good bell-glasses of clear glass, 16 inches in diameter, cost about 3s. 6d., and they are expensive and liable to break in carriage. We once had a narrow pit close to a wall under our care, and there Neapolitan Violets and bedding stuff flourished amazingly, the glass being protected by straw covers and straw mats, and the ground in front rough-asphalted with tar and gravel to throw off the damp and wet. With rough glass in large squares at 1½d. per foot much may thus be done with narrow pits—say 2 or 3 feet wide, in front of a thick wall. The bell-glass system might suit some people much better, as they are made all ready for use, and our correspondent would confer a further favour by telling us the size and price of his glasses, and the quality and colour of the glass. We duly appreciate the skill and the unwearied watchfulness he has exercised over his pets.]

CULTURE OF VERBENAS FOR BEDDING-OUT.

SOME of your readers seem to find a difficulty in the cultivation of Verbenas; my mode of growing them always successfully is as follows.

In the latter part of July I take cuttings, and insert them in a mixture of light loam and leaf mould, with a sprinkling of silver sand, in 48-sized pots well drained, and plunge these up to their rims in some old tan in a two-light frame on a gentle hotbed. When the cuttings are rooted I pot them off into 60-pots, and place them in their previous quarters till they have roothold. They are then placed on a shelf in a cool vinery, and remain there till spring, to be then removed to a cold frame to await their being transplanted into the flower

garden. Should any of your readers try the above plan, I feel sure they will not fail in successfully cultivating the Verbena.—H. C. O.

HEATING BY A FLUE, AND CHIMNEY DISTANT.

I HAVE a small span-roof greenhouse, 16 feet by 9 feet, and 10 feet high, which I intend heating with a flue. Opposite and parallel to the greenhouse, and distant from it about 9 yards, stands a brick summer-house. It stands about 2 feet higher than the greenhouse. I intend pulling it down, and putting two frames in its place. As I do not wish to be at the trouble of building a chimney to the greenhouse, I have been thinking it might be possible to use the summer-house chimney for carrying away smoke from the greenhouse flue, and wish your advice about the following.

I intend building the fireplace outside the greenhouse at the door end, and at the back of the door close to the greenhouse; the flue to enter the greenhouse and run along the back, then along the end, and back along the front to within a foot of the doorway, and leave the house there. On leaving the house I intend it to dip down about 18 inches, and pass along underground in an uphill direction about 9 yards. At the end of the underground part I intend it to rise into an aboveground flue, which will be about 14 feet long, under the two frames, they being placed on the present site of the summer-house. After the flue passes through the frames it will end in the present summer-house chimney. My reason for having the underground part is, the flue would require to cross the principal walk of my ground.

Query 1st, Would it be better to build the fire altogether outside, or inside with the door to the outside of the house?

2nd, By the above plan do you think there would be a sufficient draught of air to keep the fire going and heat the greenhouse flue?

3rd, Would there be any heat after passing through the ground, to be of use in a frame for raising plants from seeds and cuttings?—W. B. M. L.

[There are two things against your proposed plan answering well. First, the proposed dip of your flue, 18 inches, after going round your house, and then passing in a lower level, though rising for 27 feet, until it gets above the ground again for 14 feet, and then passes into the garden arbour-house chimney. The dipping would be of less consequence if at once you rose from the dip to the original or a higher level. It would require a high chimney to secure a draught with such a dip and the low level afterwards, as heated air, like heated water, has a disinclination to descend. Then, again, your 27 feet of flue sunk beneath the ground will be apt to get damp, as we see nothing of the flue being protected, and that will impair the draught. Then, again, you will waste more fuel than is necessary if, after making a flue some 40 feet long for your house, you continue that flue some 27 feet out of doors, and then 14 feet to heat two frames in the position of the summer-house, and chiefly for the sake of the summer-house chimney. Now, first, as a question of economics, we would be content to heat the greenhouse as you propose with the flue, and have a small chimney at the end to which the flue returns; and that need not frighten you, as an iron pipe 7 inches wide and 7 feet long would do, or three or four hard-burned earthenware pipes, some 6 to 7 inches in diameter and from 2 to 2½ feet long, as used for drainage purposes, would make a chimney at once. After the flue had run more than 40 feet there would be no danger of cracking. We think this would be a much easier thing than building 27 feet of a flue underground, in order that it might give out a little heat to 14 feet further on, so as to get to a chimney. But

2ndly, It is natural that we should like our own ideas best if they can be at all carried out; and we think you may do all and more than you propose if the ground will permit of your sinking your furnace deep enough, so as to have the flues in the house lower than the level of the path outside which you must cross. We do not know the arrangement of your span-roofed house 9 feet wide inside, but we think the best would be to have the pathway down the centre; and if you put your flue or flues beneath the pathway, the top of the flue forming the pathway in fact, then you might pass your outside walk without dipping, and continue in the same or a rising level all the way to the summer-house chimney; and if you liked you might cover the flue all the way from the outside pathway with

frames or pits, the greatest heat being found nearest to the greenhouse. This would be a capital plan for keeping lots of plants, and securing early vegetables, &c., and the flue would act better than when exposed to all weathers for 27 feet. We should like to know how you decide. We have said flue or flues beneath the centre pathway of the greenhouse. If single, it would require to be 14 or 15 inches wide, outside measure. If double, each 9 inches wide at least, outside measure. Now to the questions.

1, Have the fireplace outside the house by all means, the outside flush with the end wall of the house. The furnaces may therefore be inside the house, and should be 18 inches at least beneath the bottom of the flue.

2, We think the unprotected (except by earth) covering of the flue out of doors, would promote dampness and arrest draught.

3, The heat outside the house for raising cuttings, seedlings, would be most effectual in frames placed as near to the greenhouse as possible. Would it not be possible to have a small pit outside your greenhouse, the side wall of your greenhouse forming the back of the pit, and turn your flue into that?]

FUMIGATING — SYRINGING WITH HOT SEWAGE—LAPSTONE KIDNEY POTATO.

I WILL answer "A BEGINNER" by stating that I never syringe my orchard-house trees from the time the blossoms first peep from the buds till the fruit is set, a dry airy atmosphere being necessary for the dispersion of the pollen.

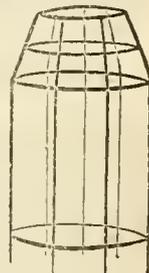
My orchard-house adjoins another house filled with a miscellaneous collection of plants, and the latter I watch narrowly at this time of year in order to detect the first sign of green fly. About a fortnight ago I observed this insect on some Calceolarias, and, to take measures against it, I merely waited for the glass to become coated with snow, according to Mr. Fish's excellent hint, for I knew by the appearance of the sky that I should not have to wait very long. In the eighth volume of the Old Series of this Journal I gave the accompanying illustration of the contrivance which I use in fumigating a single plant in a large pot, and I have the original

by me now. It is made of hoops joined to uprights, and is covered with some old mereen curtains so as to confine the smoke. I have always found it excellent for the purpose of fumigating a single bush tree, or a limited number of small plants.

The mode of operating is very simple and very effectual. When we receive a loaf of sugar from the grocer, with a wrapper of blue paper coarser than common, I seize it, and cut it into strips about 10 inches broad. I then place on the fire the liquid-manure saucepan containing about two quarts of water, a quarter of a pound of coarse shag tobacco, and one ounce of saltpetre, and boil the ingredients for half an hour. I next strain the liquid from the tobacco, return the former into the saucepan along with the strips of paper, which are loosely rolled up, and allow the liquid to become again heated and to thoroughly saturate the paper. I then place the pot on one side till its contents become cold, unroll and thoroughly dry the paper, and what liquid remains in the pot unabsorbed by the paper may be added to six times its bulk of water, and be employed for syringing.

The paper thus treated becomes like touch-paper, and is used to form self-acting cigars for fumigating. To fumigate a house say 20 feet long by 14 feet wide, six cigars would be required. I form them thus: I divide three ounces of tobacco into half ounces, cut six pieces of the prepared paper, each about 8 inches long, spread the tobacco equally over their surfaces, roll up loosely, and merely fasten the end of the paper at the bottom with a pin to prevent its uncoiling. Now if the roof of the house to be fumigated is covered with snow, or if not, at evening or on a dull day, place six small empty flower-pots equidistant on the floor of the house, and let each of them be furnished with a cigar; then apply a lighted match to the latter, and the tobacco will be gradually consumed through the smouldering of the touch-paper. The operator who dislikes the fumes may immediately make his or her exit, and return next morning to find the insects all dead, which is exactly what I did.

I fumigated the orchard-house at the same time as the plant-house, to prevent the insects finding their way from the



one to the other; but always, excepting from the bursting of the buds up to the time of the fruit setting, and from the beginning of the softening to the ripening of the fruit, commend me to the hot ammoniacal fumes of house sewage. One cigar would be sufficient to fumigate the crinoline contrivance, or a two-light Cucumber-frame.

Now with regard to the inquiries of "A BEGINNER." "First, how often the syringing is recommended to be used to trees in an orchard-house when free from insects?" I answer, That depends entirely upon "A BEGINNER's" inclination and time. From the setting of the fruit up to its last swelling for ripening an application every evening, if bright fine weather prevails, would benefit the foliage; and the same may be said from the gathering of the fruit to the maturation and fall of the leaf. When, however, the wind is in the east, and dark murky clouds move sluggishly over the firmament, if fruit and a healthy foliage are the objects in view, the trees must be indefatigably syringed with the sewage morning and evening.

"Second, how often is it recommended for borders in an orchard-house, to be syringed for the purpose of filling the house with steam?" I answer, As a matter of course the borders must necessarily become moistened every time the trees are syringed; but if roots are there, give the border a thorough deluging with sewage once a-week whilst the fruit is arriving at maturity, and the same may be done to the soil in pots, and in fine hot weather the latter must be watered with pure water every day on which the sewage is not applied. For ainery, by syringing the hot sewage from pail to pail, the house soon becomes filled with steam. Soak the borders both inside and out once a-week, only desisting as soon as the Grapes begin to colour. In 1864 I continued syringing overhead my Vines in the house till the Grapes became ripe. The bloom stood it better than I could have thought possible. Last year I never syringed after the Grapes were set, but continued the sewage-steaming and saturated the borders once a-week. I shall continue the latter plan for Vines under glass, as being what I consider much the best. The heated ammoniacal gases prove sufficiently pungent to maintain the Grape foliage in health, and to prevent red spider; but Peaches, Nectarines, and Plums in an orchard-house require the direct application to their foliage.

I advise a "A BEGINNER" to adopt the mixture of horse-droppings and malt-dust which Mr. Rivers recommends in his work, the "Orchard House." I have used it two years as a top-dressing for my pots, and not only for fruit, but for Myrtles, Heliotropes, Geraniums, &c. I find it most excellent for the purpose, and it always remains porous so as to allow of water passing down, and, as a matter of course, air as well. I am of opinion that whole borders, wherever they may be, would be vastly benefited during the heat of summer by a surfacing of this mixture.

I beg to inform "D., Deal," that the raiser of the Lapstone Kidney was Major Haigh, a shoemaker, who formerly lived at Bartsy, near Leeds. Haigh first raised the Kidney bearing his name. It is a fine stained purple sort, throwing very meagre brittle haulm, a spare crepper, one of the firmly-meaty class, and richest of the esculents. Afterwards Haigh raised the "Cobbler's Lapstone," which he dubbed so because many of the finest tubers bore a resemblance to his lapstone. Haigh died in 1856. Honour to the "benefactor of his country" who raised two excellent sorts of Potatoes—honour even in a greater ratio than that commonly accorded to the "two-blades-of-grass" men.—UPWARDS AND ONWARDS.

PREVENTING FICUS ELASTICA BLEEDING.

HAVING noticed in the Journal, a short time since, an application for a remedy to prevent *Ficus elastica* bleeding when headed back, I send you a simple but effectual remedy if you think it worth publishing. It merely consists in heating some silver sand to about 130°, and applying it to the wound the moment the cutting is taken off. One application I generally find sufficient; but should the sap be very lively it is easy to repeat the dose. This may be a very old remedy, but I have not yet seen it in print, and having tried it successfully on several species of *Ficus*, I thought probably it might prove of use to some of your subscribers.—R. H. LEE, *Propagator, Battersea Park.*

MR. J. GOULD VEITCH.—We have the pleasure to announce the safe return of Mr. J. Gould Veitch from his botanical ex-

plorations in the South Seas and Australia; and to observe that he and his brother, Mr. Harry J. Veitch, have been received as partners into the extensive nursery and seed establishments at Chelsea and Coombe Wood, which will in future be conducted under the designation of James Veitch & Sons. *Flourant!*

ROYAL HORTICULTURAL SOCIETY.

FIRST SPRING SHOW.—The first of the special shows for the season was held on Thursday last, the 15th inst., in the eastern conservatory arcade, and notwithstanding the keen wind and ungenial temperature, which no doubt had the effect of deterring many exhibitors from coming forward, and of keeping away a large number of visitors, there was an excellent attendance of both. The display altogether was one of the best that have been seen of late years so early in the season; not only did the Hyacinths present an imposing array most brilliant and varied in colour, but there were gay Tulips in abundance, long lines of Crocuses, beautiful Roses, and a good number of stove and greenhouse plants, forced shrubs, &c.

Hyacinths have certainly never been seen in greater perfection, if, indeed, they have been equalled at any previous show; and though Mr. William Paul and Messrs. Cutbush were, as usual, pre-eminent, other exhibitors came forward; and that which is not so usual, their productions, though falling short of those from the above veteran growers, were of considerable merit.

In Class 1, for eighteen distinct varieties from nurserymen, two splendid collections were shown. That from Mr. William Paul, to which was awarded the first prize, contained spikes which for size, and for freshness and brightness of colour, even surpassed his previous efforts. There was an air of nobility about the spikes that it is difficult to describe, but which was most striking. Foremost among the single blue class in this collection was King of the Blues, and a magnificent spike it was; the others were Grand Lilas, Charles Dickens, and Marie. Double varieties of the same colour consisted of Van Speyk, Garrick, and Lanrens Koster; and the very dark shades approaching to black, were represented by Ferreck Khan and General Havelock. Of reds—Garibaldi, Von Schiller, Solfaterre, Koh-i-Noor, and Macaulay, were most brilliant, and the spikes very fine; and so, too, was that of Lord Wellington, double pale blush, serving as a connecting link with the white class, of which there were Mont Blanc and Alba maxima, the latter remarkably fine. Ida, the best of the yellows, completes the list.

Messrs. Cutbush, as already remarked, had also a splendid set of eighteen, but some of the flowers had not reached that perfection which they would evidently have attained a week later. This collection received the second prize. It consisted of blues—Charles Dickens, Blen Aimable, Marie, Grand Lilas, Baror Von Tuyll, and Laurens Koster; reds—Von Schiller, Solfaterre, and Macaulay, very brilliant; Howard, Florence Nightingale, Princess Clothilde, and Cavaignac; Robert Fortune, mauve; Grandeur à Merveille, pale blush, a splendid spike; La Vestale and Mont Blanc, white; and an excellent spike of Ida, yellow.

Mr. Kirtland, Albion Nursery, Stoke Newington, came third with a very good collection, in which the most noticeable were Orontides, Von Schiller, Sultan's Favourite, Charles Dickens, Van Speyk, Mont Blanc, Gigantea, and Mimosa.

The next class was for twelve Hyacinths, of six kinds, amateurs only. The competitors were Mr. Young, gardener to R. Barelaj, Esq., Highgate, and Mr. Bartlett, Shaftesbury Road, Hammersmith, who were awarded the first and second prizes respectively; and it is worthy of remark that their collections, both in this and other classes, were much superior to those generally shown in previous years by amateurs. Among the kinds shown were—Queen of the Netherlands, Sultan's Favourite, Von Schiller, Mont Blanc, Nimrod, Mimosa, Charles Dickens, &c.

Class 5 was for six Hyacinths, and open to nurserymen and amateurs. Here, again, Mr. W. Paul was first, with splendid spikes of King of the Blues, Van Speyk, Macaulay, Koh-i-Noor, Alba maxima, and Ida. Messrs. Cutbush and Mr. Kirtland were equal second, and Mr. Young third.

Of Hyacinths grown in pots and glasses in windows, the best came from Mr. Bartlett, and were in pots. Mrs. L. Young, Kentish Town, and Mr. Beech, gardener to W. Rogers, Esq., Redhill, were respectively second and third.

New Hyacinths were shown by Mr. W. Paul, Messrs. Cutbush, and Mr. Young. Those from Mr. Paul, who took the first prize, were Vunxnak, a brilliant scarlet crimson, which, as well as Princess Mary of Cambridge, lilac, appeared to be decided acquisitions; Sir Henry Havelock, purplish plum; Adelina Patti, like Robert Fortune in colour; Bird of Paradise, resembling Ida in colour; and Sir E. Landseer, a showy rosy crimson. Messrs. Cutbush, who were second, had Arnold's Prince, purplish plum, a desirable colour; Grand Vainqueur, pale rose striped with pink; Orion, violet, with good-sized bells; Anriuela's Oog, purplish violet with a white eye; Hogarth, a pleasing rose pink; and Mrs. James Cutbush, white, in the way of Snowball, but with a larger truss. From Mr. Young came Sir E. Landseer, deep mauve, good spike; General Pelissier, porcelain blue; Mary, a promising white; Annie Lisle, rosy red; and Omphale, blush. A third prize was awarded for these.

It now only remains to notice a collection of 120 pots, furnished by Mr. W. Paul, and comprising magnificent examples of most of the best known varieties. Among blues, here, as elsewhere, King of the Blues was the finest of the dark shades of that colour; and of the lighter varieties Charles Dickens, Grand Lilas, Couronne de Celle, Lord Cowley, Bloksberg, and Van Speyk, were conspicuous. The very dark, almost black shades, were represented by General Havelock, Prince Albert, Fernck Khan, and Von Humboldt. Reds were numerous, and besides those already enumerated, consisted of Reine des Jacinthes, Ornement de la Nature, Cavaignac, and Beauty of Waltham; whilst of the bluish varieties, Lord Wellington and Grandeur à Merveille were particularly fine. Haydn and Adelina Patti were conspicuous on account of their mauve tinge, and Ida was apparently the best yellow. Of the white class there were besides Queen of Netherlands, Alba maxima, and Mont Blanc, very good examples of Orondates, Mirandoline, Snowball, and Madame de Staël.

Tulips were shown in twelves in two classes by nurserymen and amateurs respectively. Of the former Mr. W. Paul was first with Keizerskroon, very showy, Proserpine, a very fine purplish rose, the well-known Yellow and White Pottebakker, Globe de Rigaut, purplish streaked with white, and Conleur Cardinal, a showy red. Messrs. Cutbush, who were second, had Keizerskroon, Cramoie Royale, Cramoie Superbe, Duc d'Artemberg, and Duchesse de Parme, red and yellow, the latter very showy. In the Amateurs' classes Mr. Young was first, Mr. Bartlett second, the kinds being Tonnesol, Vermilion Brilliant, and others already named; and in addition an extensive and fine collection was exhibited by Mr. W. Paul, and one came from Mr. Bartlett, which was also very good, though not so numerous.

Narcissi were not numerous. Those from Mr. W. Paul were first, and consisted of Bazelman Major; Newton, yellow; Grand Primo Citronier, white and yellow; Queen of Yellows; Gloriosa, a fine white with a yellow cap. From Mr. Macintosh, Hammersmith, who was second, came Paper White, a pretty pure white, Grand Soleil d'Or, Grand Primo, and others; and collections were also furnished by Messrs. Cutbush and Mr. Young, to whom equal third prizes were given.

Crocuses made a fine display, and some sorts, such as Albion and Ida Pfeiffer, striped; Marie d'Ecosse and Mammoth, white; and Prince of Wales, blue, were very effective. Collections also came from Mr. Macintosh, Hammersmith, Mr. Young, and Mr. Bartlett, to each of which a prize was awarded.

Of Lilies of the Valley good pots came from Mr. W. Paul, Mr. Bartlett, and Messrs. Cutbush; and Chinese Primulas from Mr. Todman, gardener to R. Hudson, Esq., and Mr. Fountain, gardener to Miss Wood, Ealing. There were also several miscellaneous collections of Hyacinths, Tulips, and other bulbs from the above exhibitors.

Beautiful groups of Roses were furnished by Mr. W. Paul and Messrs. Paul & Son; and several boxes of cut blooms by the former. Camellias came from Messrs. Lee, Bull, and Young. For the prizes awarded we must refer our readers to our advertising columns. Respecting the Roses and the new Hyacinths some notes will be supplied by "D., Deal."

Forced shrubs were not numerous. Messrs. Cutbush had a first prize, and Mr. Young a second, for collections consisting of Guelders Rose, Rhododendron Cunninghami, Deutzia gracilis, double-flowering Peaches, Andromeda yuxifolia, Forsythia viridissima, and a Philadelphus; and Rhododendrons were furnished by Mr. W. Paul, Mr. Young, and Messrs. Cutbush, the former taking the first prize for six, and for a single specimen, a bushy well-bloomed plant of Blandyanum. The six were smaller plants of Illuminator, Atrosanguineum, Sir I. Newton, Pardoloton, and Schiller. Second and third prizes were awarded to Mr. Young and Messrs. Cutbush respectively.

Greenhouse Acacias made but a small show, being only exhibited in threes, and as small plants. Messrs. Cutbush were first with A. Drummondii, eriocarpa, and grandiflora magna, with spikes an inch or more in length; and Mr. Young second with the first two and nitida.

Epacris were only shown by three exhibitors—viz., Messrs. Lee, Cutbush, and Young, who stood in the prize list in the order in which they are named. Messrs. Lee's consisted of a large specimen plant of Eclipse, and of Ornata and Salmonea; other sorts were Copelandii, miniata splendens, and Walkerii. Hyacinthiflora, lively rose, and Sunset, crimson, in Messrs. Lee's miscellaneous collection were very pretty.

Among miscellaneous groups of plants Mr. Bull, of Chelsea, contributed different varieties of Aucubas, some in fruit and one or two in flower, Peperomia arifolia, a beautiful azure blue Ipomoea from South America, Draecenas, Yucca quadricolor, variegated Podocarpus, several pots of the showy Imantophyllum umiatum, Costus zebrinus, Araucaria glauca, Eleagnus japonicus, with well-marked yellow variegated foliage, Bignonia violascens argyrea, with leaves variegated with white, and with violet in their young state, the handsome Bertolonia margaritacea, Lomaria gibba, and Azalea punctulata, which has sported into two other forms; also, twelve Orange trees in pots, forming handsome little standards, bearing numerous fruits. Mr. Bull was awarded a first prize for his collection, and a like award was made to Messrs. Lee for a fine group, comprising Dendrobium moniliforme and noble, ten Anoubs bearing an abundance of their bright red berries, Ixora Griffithii, in excellent bloom, Epacris, Azaleas, Camellias, and Hedera fuchsoides, in good bloom. Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, sent a well-grown specimen of Chorozema Lawrenceanum, exhibited at the previous weekly show, Azaleas,

Cyclamens, &c.; F. J. Graham, Esq., his large and very fragrant Violet Czar; and Mr. Bartlett, Todea pellucida, and other Ferns, and a miscellaneous collection of plants in flower. Mrs. Mitchell, Anglesea Terrace, Battersea, exhibited wax flowers creditably executed, consisting of Gloire de Dijon and other Roses, Camellias, &c.

Mr. Gardiner, Eastington Park, Stratford-on-Avon, contributed fine specimens of Apples, grown on the blue lias clay of south Warwickshire. They consisted of Sturmer Pippin, Reinette du Canada, Hanwell Souring, Dumelow's Seedling, Yorkshire Greening, and others unnamed, and were in such excellent preservation that not a speck was to be seen on them. They had, it was stated, been kept in a dark, dry room, where an almost uniform temperature of 40° was maintained.

A number of extra prizes were awarded, for which we must refer our readers to the prize list in another column.

HORTICULTURAL SOCIETIES IN UNION WITH THE ROYAL HORTICULTURAL SOCIETY.

THE Council offer the following advantages to Provincial Horticultural and Floral Societies which may desire to enter into union with the Royal Horticultural Society:—

1. The Council will transmit free to each Society in union one copy of the "Proceedings" and "Journal" of the Royal Horticultural Society.

2. They will insert either in the "Proceedings" of the Royal Horticultural Society or in its "Journal" according to the character of the contribution, the more important notices or papers the Society in union may wish to have published.

3. They will transmit to the President of the Society in union, for the use of its members, a transferable ticket, conferring on the bearer of it the following advantages:—

a. The right of free admission to the Gardens whenever they are open.

b. The right of introducing two friends personally on any day of the week excepting on Saturday, when one only can be introduced.

c. The same right as a Fellow of purchasing tickets at a reduced rate, before the day of the show, for the great and special shows, and on the day of the show, for the Saturday weekly shows.

4. They will transmit to the President forty orders, each order giving admission to South Kensington or to Chiswick to one person.

5. They will allow to the Societies in union a two-guinea Fellow's chance in the ballot for plants for each two-guinea subscription paid.

6. They will send to the President of the Society in union for the use of its members, one share of the seeds distributed among Fellows, and will procure for the Society seeds of the best description at wholesale prices.

7. They will allow the Secretaries of the Societies in union, to procure for its members such cuttings as can be spared from Chiswick Garden.

8. They will exchange plants and seeds, &c., with the Society in union.

9. The terms of subscription are an annual payment of two guineas, but a Society may, by payment of two or more two-guinea subscriptions, obtain increased privileges in proportion to the subscription paid.

It is to be understood that the privileges are offered to the Society for subscriptions paid by it as a body, and not to individual members of it.

INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

In our article last week under the above heading there was an omission or two, and there is a correction which we have to make. In the list of local committees formed in Scotland, that for Elgin and the north of Scotland has Mr. H. Rose, of Floors Castle, named as the Hon. Secretary. It should be Mr. John Webster, The Gardens, Gordon Castle, Fochabers, N.B. In the list of local secretaries the name of Robert Warner, Esq., of Broomfield, Hon. Secretary for Chelmsford and the county of Essex, was unfortunately omitted.

A very numerous and influential local committee has just been formed at Dublin, of which the Right Hon. the Lord Mayor is the Chairman, and the Hon. Local Secretary W. E. Steele, Esq., M.D., the energetic Assistant-Secretary of the Royal Horticultural Society of Ireland. We have great pleasure in recording this fact, as it manifests that a lively interest is being taken in this national movement in the great capital of the sister Island.

ROYAL HORTICULTURAL SOCIETY.—The blossom of the beautiful *Amherstia nobilis*, so rarely flowered in England, and to obtain which was the special object of a mission sent to India by the late Duke of Devonshire, will be exhibited at the meeting of the Society this day. Mr. Bateman, F.R.S. and a Vice-President of the Society, will deliver a lecture on this glorious plant.

THE ROYAL BOTANIC SOCIETY'S FIRST SPRING SHOW.—MARCH 17.

This took place on Saturday last, and was a charming display of spring flowers most effectively arranged on turf banks in the exhibition tent. In the background, along the canvas walling, were ranged *Araucarias* on the one side, specimen *Camellias* on the other; in front, *Hyacinths*, *Tulips*, *Crocuses*, and other spring bulbs; in the centre, a bank of *Roses* in all their freshness and beauty; at one end, flowering and fine-foliaged stove and greenhouse plants, at the other, a group of rich-coloured *Rhododendrons*. Following so closely the show at Kensington, the subjects exhibited there were to a great extent reproduced on this occasion, and as these have been already noticed, it will be unnecessary to do more than mention their presence.

Hyacinths were numerous shown, both in special classes and in collections. In the Nurseryman's Class for twelve, Mr. W. Paul was first, with Lord Wellington, King of the Blues, Garibaldi, Van Speyk, Koh-i-Noor, a magnificent spike; Macanlay, Solfaterre, Grand Lilas, Alba maxima, Laurens Koster, Garrick, and Ida. Of the size and beauty of these it would be superfluous to say more than that they were characterised by the same excellence as at Kensington, and on a second inspection it even seemed enhanced. The second prize was awarded to Mr. Davies, Stanley Nursery, Old Swan, Liverpool, a new exhibitor at these shows, for a very creditable collection, in which Von Schiller, Maculay, Grand Lilas, and Ida were particularly good. Duc de Malakoff, Madame Van der Hoop, Mont Blanc, Sultan's Favourite, Grandeur à Merveille, Grootvoorst, Laurens Koster, and Charles Dickens completed the number.

In the Amateurs' Class Mr. Young, gardener to R. Barclay, Esq., Highgate, was first; Mr. Wheeler, gardener to Sir F. H. Goldsmid, Bart., Regent's Park, second; and Mrs. Young, Kentish Town, third, those from the latter being in glasses.

For six new *Hyacinths* Mr. W. Paul was first and Mr. Young second, the kinds being the same as those shown at Kensington. The former also exhibited a beautiful collection of established kinds; and others came from Mr. Young and Mr. Davies.

For eighteen *Tulips* the two exhibitors above named took a similar position in the prize list, and both furnished numerous collections in addition. Of the single kinds, Keizerskroon, Yellow and White Pottebakker, Rose Luisante, Proserpine, and Cerise Gris de Lin on account of its affording a change of colour, were six of the best; and to these may be added Vermilion Brilliant, and of doubles, Tournefol and its yellow variety, and Leonardo di Vinci, very showy, red, edged with yellow. Lac Gris de Lin, similar in colour to Cerise Gris de Lin, but double, will afford a further variety of colour. Unfortunately the day was too dull for the *Tulips* to be seen in perfection.

Of other bulbous plants fine collections of *Narcissi*, *Lilies* of the Valley, and *Crocuses* came from Mr. W. Paul; of *Narcissi* from Mr. Young; and of *Cyclamens* from Messrs. E. G. Henderson, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, and Mr. Wheeler. All the *Cyclamens* were in good bloom, but those from Messrs. Henderson and Wiggins were particularly so. Prizes were awarded to the three exhibitors in the order in which they are named.

Chinese Primulas in good bloom, and of good colours, were shown by Mr. Todman, gardener to R. Hudson, Esq.; and Mr. Wheeler, who were first and second; but the greatest attractions in this way were two new and remarkably fine varieties exhibited by Messrs. E. G. Henderson. One, called Stewarti, had flowers as large as a five-shilling-piece, white, beautifully mottled and striped with purplish crimson; the other, Mrs. Eyre Crabbe, was smaller than Stewarti, but double, and the white ground suffused with pink. Both are decided acquisitions, and a great advance on older kinds.

Camellias in pots were furnished by Messrs. Lee and Mr. Bull, to whom first and second prizes were awarded. The varieties were Fulgens nova, Valterredo, Madame Langelier, Rossii, Alba illustrata, Prince Albert, Sarah Frost, Double White, and Marchioness of Exeter, large deep red. Cut blooms in great beauty were furnished by Messrs. Lee, Todman, and Trassler, gardener to D. J. Kay, Esq., Hoddesdon, and Young. Among the varieties seen to most advantage were Double White, Fimbriata; Reine des Fleurs, Mathotiana, red; Optima and Caryophylloides, carnation-striped; Variegata, very showy, red, with some of the petals nearly entirely white; Valterredo, rose; Fra Arnoldo da Brescia, rose, with a white stripe up the centre of each petal; Countess of Orkney, and Lady Hume's Blush. To Messrs. Lee and Todman first prizes were awarded, Mr. Trussler and Mr. Young being second and third.

Of *Roses* in pots, though no prizes were specially offered, beautiful examples were shown by Mr. W. Paul and Messrs. Paul & Son, to each of whom a silver medal was given. Those from the former comprised Dr. Lindley, very rich in colour; Senatenr Vaisse, Elizabeth Vigneron, Mrs. Bosanquet, Daehess of Sutherland, Madame de St. Joseph, very full of bloom; Victor Verdier, and General Jaqueminot; whilst from the latter came Model of Perfection, Maurice Bernardin, Louise de Savoie, Victor Verdier, Alba Rosea, Madame de St. Joseph, Beauty of Waltham, Prince Camille de Rohan, Princess Mary of Cambridge, President, and others. Among novelties, Calathea Turneri, pure white, with a purple eye, and *Dendrobium philmilium* giganteum, with a pale primrose lip, and lilac sepals and petals, came from Mr. Williams, of Holloway; and from Messrs. Paul & Son, *Philadelphus grandiflorus speciosissimus*, with fragrant white flowers

2½ inches across; and *Diervilla multiflora*, with tubular maroon flowers, with white anthers and a long pistil, surmounted by a white stigma. Both the above appear to be acquisitions in the way of flowering shrubs. Mr. Bull again exhibited a large collection of new and rare plants, the same as that shown at Kensington, as well as handsome standard *Orange trees*, and was awarded a silver medal. Some seedling *Cinerarias* were also shown by Messrs. F. & A. Smith, of Dulwich, but the season was too early to form a definite opinion of them. Groups of flowering and fine-foliaged stove and greenhouse plants from Mr. Williams, Messrs. Lee, and Mr. Wheeler, received first, second, and third prizes, and consisted of *Azaleas*, *Camellias*, *Hedera*, *Rosa fuchsoides*, *Eriostemon pulchellum*, a fine flowering specimen of *Franciscea confertiflora*, *Yucca aloifolia variegata*, *Draecenas*, *Cordylone indivisa*, *Pandanus javanicus variegatus*, handsome plants of *Dicksonia antarctica*, and a very fine specimen of *Alocasia metallica*, which came from Mr. Wheeler, who also exhibited half a dozen exotic Ferns. Messrs. Lee again produced their handsome fruiting *Aucubas*, Mr. W. Paul a fine group of *Rhododendrons*, and Mr. Young greenhouse *Acacias* and forced shrubs. From the Rev. George Cheere came a pot of *Anna Beley* Pink; and lastly Mr. Reeves of the Ladbroke Nursery, Notting Hill, showed a dozen admirable specimens of *Dentzia gracilis*, which, though only in six-inch pots, were covered with a profusion of their pretty white flowers.

CRYSTAL PALACE SPRING FLOWER SHOW.

This was opened on Saturday, and will remain open during the present week. The flowers are from Messrs. Cutbush, of the Highgate Nurseries, and, as usual, are of very superior excellence. They are tastefully arranged on a platform at one end of the Palace aisle. We shall notice them fully next week.

AIDING IN FERTILISING BLOSSOMS.

It is a custom among gardeners to perform a work which they deem necessary—namely, fertilising or setting their Peach and Nectarine flowers, a practice which I consider useless in fine weather.

I presume the gardener considers that the pollen is carried from the anthers to the stigmas by the means he uses, consequently conducing to the setting of the fruit. Do you consider such assistance really necessary? Why has nature provided pendent flowers with a longer style than those growing erect? Most assuredly that the work may be performed naturally.—INVESTIGATOR.

[Precisely so; but all flowers are not pendulous, nor are all stamens and pistils of such disproportionate length. If we had the trees in a Peach-house in bloom in February or March, and in cold weather, and we did nothing to move the air so as to scatter the pollen, and the fruit did not set to our mind, we should blame ourselves afterwards. The cultivator must not always depend on Nature. How many of the handsomest Cucumbers never will produce a seed if left to themselves? How seldom do the fine flowers of the *Granadilla* set fruit without being helped? Again, how many flowers, especially those which are dioecious, depend for fertilisation upon insects carrying the pollen to the female flowers?]

CUCUMBER CULTURE.

The cultivation of Cucumbers in winter is a subject which, though very useful, is very little touched upon; for this reason I will endeavour to give a sketch of the system I adopt, and which has invariably proved successful in my hands, and with others will no doubt do the same. It is very simple. About the end of September I cut down the old plants, which have been bearing since the previous Christmas. The house then undergoes a thorough cleansing and fumigating; the walls are whitewashed with good lime and sulphur; the pipes are also painted with boiled oil, which, besides adding to the neatness of the house, keeps them from rusting. Thus cleaning the house I consider to be one of the greatest advantages to the young plants, it destroys the haunts of insects; and where do insects thrive so well as in a dirty house?

I shall now suppose the house to be clean; I will therefore proceed to detail my method of raising the young plants necessary to fill it. I have for many years used plants from cuttings in preference to those from seed, and although there is thus a little more trouble at first, it is amply repaid afterwards. I have never found the plants degenerate under this treatment, as many persons aver they will. The sort I cultivate is a black spine of my own raising, an improvement on the old Lord Kenyon's Favourite. It has always given me great satis-

faction. I believe the black-spined varieties are far superior to the white for winter cultivation, setting better, and not requiring so much sun as the white. I pot the cuttings singly in small thumb pots, and plunge these in a moderate hotbed. Great care should be exercised in shading them from the sun, and giving them air towards the evening. A moderate supply of water only should be given, otherwise they are liable to rot off. They should also be syringed occasionally.

Here we will leave them while I describe the preparation of the house. My own is a half-span, with one bed in the front about 3 feet deep. At the bottom of the bed I place a layer of brickbats and corks as drainage, and on this cotton-dust well saturated with water. This I find affords the necessary heat, and retains its heat well—an important point in Cucumber-growing. After allowing the cotton-dust to cool down for a day or two I put in the soil, which is composed of the soil of a meadow, taken from below the grass, mixed well with spent horse-droppings, to keep it open. This I also allow to remain for a day or so, after which the plants may be put in, providing, of course, they have prospered. Be careful to choose a dull day for the work; if not, shade them well from the sun. When well established the plants should be syringed daily with tepid rain water, if the sun is shining. This is very beneficial to the plants, it freshens the foliage, and, above all, keeps down insects. Occasional fumigations with common tobacco paper are also necessary.

Towards the beginning of February the plants will have reached the top of the house, they should then be tied down to the bottom wire, when they will start up again beautifully. Another important point to be attended to is damping the house. This should be done three times a-day, or oftener if necessary. The floor and pipes should be well watered with a rose, so as to raise a steam. Evaporating-troughs placed on the pipes, and filled two or three times a-day, will also aid this object greatly.

By persevering in the above treatment Cucumbers can be obtained from Christmas to September, or if there are two houses, all the year round.—PETER.

FLOWERS OF THE PAST SEASON.

BEDDING GERANIUMS.

FASHION—which is fast consigning florists' flowers to oblivion, and seeking to heap ridicule and contempt on those whose enthusiastic love for their favourite Tulip, Auricula, Pansy, or Carnation did so much to encourage a love of floriculture amongst a class who, without these florists' flowers, would never have thought of it—has brought into prominence and raised to the very first rank of favourites what a few years ago would have been a mere "outsider;" and the common scarlet Geranium, which was at one time considered only fit for the cottage window, is now the petted child of the first gardeners in the land. There are some of us, who sigh for the days that are past, who remember with feelings of pleasure the meetings of former times, when John Dickson of Brixton was in his glory, and Turner of Slough a "prentice hand" at those flowers of which he has since become the king of cultivators. I met one of the heroes of other days lately in a railway train, and a pleasant little chat we had over those times. He afterwards became a great Orchid fancier, and his name figured in many a prize list. We cannot, however, be out of the fashion. I question now in these days of push, and bustle, and love of novelty, whether we shall see a resuscitation of this love of florists' flowers, and so we must bend to the prevailing current.

In giving these notes on new flowers I do not pretend to give complete lists. I only speak of those I have seen either in my own garden or in that of my friend and neighbour Mr. Banks. These indeed comprise a great number, but not all of the novelties; and while not pretending to infallibility, I am inclined to think that, as far as circumstances will allow, the judgment will be found correct.

BULL.

I have repeatedly spoken of the excellent strain of Zonale Geraniums which Mr. Bull has obtained, and when his flowers become better known I am sure they will be more appreciated for their size and bedding qualities. I this year in my small garden substitute Editor for Tom Thumb and Attraction, and hope Clipper will be in the same honourable position.

Governor.—A large rich scarlet. Flowers of excellent form and substance; trusses large.

Serena.—A beautiful and attractive flower, in the style of Eve and Charmer, but superior to either of them.

Manfred.—A fine, large, and striking flower of great merit, brilliant scarlet in colour, and free in habit. I have noted this as A1.

Maiden's Blush.—A delicate beautifully coloured pink flower, and likely to be useful.

E. G. HENDERSON & SON.

Bridal Beauty.—In the style of François Desbois and other foreigners. Centre of the flower bright rosy salmon; margin pure white; colours constant. Excellent also for pot purposes.

Rose Perfection.—Light clear rose; upper petals with white centre. In the style of Rose Rendatler, &c. Medium in growth.

HALLEY.

Venus.—A beautiful flower. Bright scarlet with white eye. Foliage very prettily marked with a dark horseshoe, splashed with brown. I imagine this will make a very effective pot plant.

SALTMARSH.

Luna.—A fine flower of the Mrs. Milford section of Geraniums. Last season seemed to be peculiarly trying to this class, and in many cases Cloth of Gold and others of a similar character made no growth at all. Luna was more vigorous, and did well.

Little Treasure.—A very pretty dwarf-growing variety. Very free-blooming, and well adapted for small beds or for the edgings of larger ones.

F. & A. SMITH (DULWICH).

In the catalogue published by this firm there is perhaps the largest and most varied assortment of bedding Geraniums to be found, whether continental or home-grown, and hence there is every opportunity for obtaining good sorts. I am very much mistaken, from what I have seen myself, whether there are not at Dulwich some varieties of the Mrs. Pollock style, which will exceed anything as yet out. Messrs. F. & A. Smith sent out twenty-four varieties last season. It was not to be expected they would be all first-rate, but some of them are without doubt flowers of great merit; of these I think the following are the best:—

Biondella.—In the style of François Desbois, &c.; but the centre a deeper orange salmon, shaded with the same colour, and with white margin.

Conspicua.—A fine flower, of a rosy blush colour. Good form and substance.

Glow.—Well deserves its name. Truss large, individual pips very large also, measuring nearly 2 inches across, a rich deep scarlet; foliage with dark zone. An excellent flower.

Loveliness.—Colour rosy blush with salmon centre; foliage with dark zone. Good flower.

Magnus Bonum.—Orange salmon; eye light. A very large well-formed flower; trusses very large and fine.

Pre-eminence.—Somewhat in the way of Excellent as to habit, foliage, &c., but deeper in colour. An excellent variety.

Prince of Orange.—I believe this will be found to be a most useful flower. Its habit is dwarf and compact. The colour is a bright orange scarlet, and the trusses are very abundantly produced.

Premier.—Very deep scarlet; white eye. Will make an excellent plant for vases or pots.

Rev. H. Dombain.—Modesty forbids. It is, however, a rich dark cerise flower, with a shot of lake through it; flowers good and large. A very desirable variety.

G. SMITH, TOLLINGTON NURSERY.

How many good things have come from this little nursery, and how much care must have been exercised in fertilising in order to procure so many! Of the Geraniums Mr. Smith sent out last year two struck me as very good, and one as being but a little behind them.

Glory.—Flowers of a bright orange scarlet, in the way of that well-known and valued flower Herald of Spring, but its colour is even brighter than that. The individual pips are very large, and the truss fine.

Highgate Rival.—Rosy salmon; truss large; flowers well shaped. Very free bloomer.

Princess.—Bright rosy pink; truss large. Promises to be a good bedding variety.

It will be perceived that I have not mentioned any Nosegay varieties, for I cannot as yet school myself to admire them. I admit that many of them are brilliant in colour, and that there are, moreover, tints in them that have not as yet been obtained in the Zonale section; but I have never yet seen a bed even of Stella or Cybister that pleased me when I came to close quarters, however brilliant at a distance. The

centre of each truss dies off first, leaving a blank space, and giving a very dingy look to the bed. While the process of cross-fertilisation is gradually introducing into the Zenale section the desired tints, I may be behind the age in preferring symmetry to raggedness, but I really cannot help it.—D., Deal.

THE AMATEUR'S AND COTTAGER'S FORCING PIT, AND PIT FOR GENERAL PURPOSES.

I HAVE sometimes obtained the character of a retrogressionist, because in these days of heating by hot water I have now and then had a good word to say for brick and iron stoves, and the old-fashioned stoves, as the cheapest at first and by far the most economical afterwards for heating small places. I am fully aware of the pleasant and safe heat obtained from hot water with means of evaporation at command; and I believe that there is no other mode so economical when several houses and pits have to be heated from one boiler, as then there is only one chimney to take away the heat unappropriated by the water; but in all such cases of economy there is always the risk of the one boiler giving way at a critical time, when all the houses heated from it might be greatly injured before the boiler could be repaired or a fresh one substituted for that which is faulty. Then, on the other hand, when a boiler heats only one or two small houses there will always be a waste of heat up the chimney unless there is a longish flue, no matter how careful you are with the damper and the ashpit-door, and that due carefulness will rarely be exercised unless by the person who has the strongest reasons for doing all this in the best and most economical way. After considerable practice I have come to the conclusion, that for keeping frost out of a small house where a temperature of not more than 40° or 45° is required in cold weather, nothing beats a well-built brick above, fed either inside the house or from an opening outside the wall; and where a higher and more regular heat is wanted in a small place, then I conclude that nothing for first economy and future economy in fuel will compare with a small well-built flue.

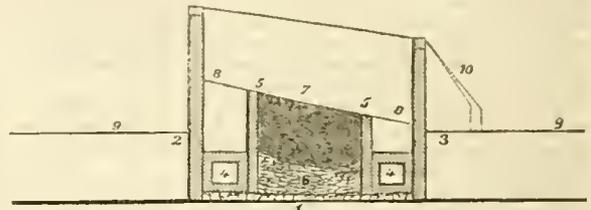
In former volumes I have several times alluded to the many things that farmers might grow from the heat of the manure and litter in their yards, and amongst the rest have instanced Cucumbers, as there would almost always be plenty of fermenting material to apply as linings to either frame or pit to keep up the requisite temperature. Influenced by such remarks from myself and other friends, many artisans, mechanics, and the better-to-do labourers, have bought their two, three, or more loads of farmyard dung, prepared it properly for a Cucumber-bed, and placed a frame over it, finding that the manure paid itself well when ultimately transferred to the garden or the allotment. Many, however, failed to succeed with Cucumbers according to their wish, because they began too early, and, though they obtained enough of heat at first, they could not afterwards afford manure to keep up the heat by linings. Those who can obtain only a load or two of fermenting manure should be content to put the most of that underground, set the frame on it, and plant out in May, depending chiefly on sun heat after the plants are fairly in growth; but then, if disposed to sell, much less in comparison will be obtained for the fruit than if it were produced in May and June. This difficulty in obtaining fermenting material, and the additional trouble in preparing and watching it to secure a regular heat, have led some of our enthusiastic amateurs among our artisans and tradesmen to try other modes of effecting their object.

For many years the most successful in cutting early Cucumbers among unprofessionals in this immediate neighbourhood has been Mr. Attwood, boot and shoe maker, in the pretty village of Lilley, four and a half miles from Luton and Hitchin. As there are now the Messrs. Attwood, father and son, and both equally enthusiastic in gardening, it need not be wondered at that the garden is a picture of neatness and good taste. Until about three years ago Mr. Attwood used the old-fashioned frames for his Cucumbers. Never have I met with a better example of the rest and the zest which are obtained, not from doing nothing, but merely from a change of labour, every run out from the seat to the frames, or a short spell in the garden, imparting fresh vigour for prosecuting the regular professional work. In the gloamings from autumn to spring—those witching moments of the twilight between the fading of the light of day and the lighting of the lamp, in which so many of us like to indulge in a quiet dreamy mood—again and again

have I met Mr. Attwood with barrow or bag, scouring the roads and lanes, collecting withered grass and tree leaves to add to his valuable fermenting heap. These sources of supply gradually became more meagre, the collecting of them more laborious, the purchasing of fermenting material more precarious, and little to be depended on; and it became apparent that a pleasant and a profitable hobby must be given up, or other means of obtaining heat resorted to, and what I call the model pit for such amateurs was the consequence.

This pit, 5 feet in width and 25 feet long, outside measure, is a very neat-looking affair, and was built and is worked very economically. I dare not say how much, or rather how little it cost, as with the exception of the flues and the tanks of Portland cement on the top of the flues, the work was mostly done by Mr. Attwood, junior. During the heating season, the cost for fuel is from 1s. to 1s. 3d. per week, and Cucumbers are generally turned out about the beginning of March. There had also been a collecting of brickbats and old bricks for some time previously, but all the flues and part of the walls were new bricks, purchased at the market price. The simplicity of everything secures the first and ultimate economy.

I shall now describe this useful pit as it stands, of which the figure is a cross section, and drawn roughly to a scale of 4 feet to the inch.



1, Is the bottom of the pit, formed of brickbats, stones, &c.
2, Back wall of pit, 3 feet 8 inches in height, 2 feet 4 inches above the ground level (9). This wall is formed of single bricks on bed—that is, 4½ inches wide, or nearly so, bound with a wood plate at top of the same width.

3, Front wall built in the same way, 3 feet 4 inches in height, and 2 feet above the ground level.

4, 4, Flues along the front, round the farther end, and along the back to a small chimney. These flues can scarcely be more simple or substantial. Suppose on the floor of the pit, close to the furnace end of the front wall, you level a space 10 inches wide all the way round to the furnace end of the back wall; or, if you choose, in that length of 55 feet or thereabouts, you make your level, so that at the furnace end of the back wall the level will be 2 or 3 inches higher than where you began, though if all is a dead level it will do well enough—on this level place a layer in mortar of brick on bed—that is, 9 inches wide, which will form the bottom of your flue. Then on each side of this nine-inch base set, with good mortar, a brick on its side—that is, 4½ inches deep, connect these crosswise with another brick on bed, with good mortar between the joints, and your flue is made, leaving a hollow space for the heated air of from 4 to 4½ inches wide and the same in depth, which is amply sufficient to secure from 70° to 80° even in cold weather. You will perceive that the base and the sides of the flue abut against the outside 4½-inch walls, and

5, 5, The inside walls, which are built with brick on edge—that is, 2½ inches wide, with a couple of wider piers in the length; but the walls have stood very well.

6, Shows a little hot dung, put in the bottom of the pit to help to heat the soil sooner.

7, Is 18 inches deep of soil for the Cucumbers.

8, Represents small spars of lath that go across the openings between the walls to prevent the vines of the Cucumbers falling down. It has been noticed that Cucumbers that hang down above the flues grow more quickly and straighter than those on the bed; but for the slight expense of a trellis right across, we would have it, and have the earth in the bed lower to permit of it.

9, 9, Is the general outside level of the ground, which permits of work being done easily either from the back or front of the pit.

A few supplementary remarks may here be added.

First, The stokehole is sunk at the end and covered with a flap door, and is sufficiently low to permit the furnace-bars of

the small furnace being some 18 inches below the bottom of the flue.

Second, The flue, though so small, would give out far too much heat at the furnace end, and, therefore, for 6 or 8 feet the brick covering is double instead of single, and for about 3 feet, I believe, the thickness is about triple brick on bed.

Third, In front especially, there are at least three large cisterns, or evaporating-basins, formed by plastering with Portland cement the top of the flue, the side walls, and the bricks across to make the cisterns, which stand well, give off abundance of vapour, and supply hot water for watering and syringing.

Fourth, The bed 7 is 2 feet in width, a width which, as I have often stated, will render Cucumbers more fertile than if the roots revelled in the five-foot width. The hot dung at the bottom will help to heat the soil when first put in; but not to be troubled with such dung at all, some rough stones might be placed in the bottom, and openings left in the walls 5, 5, opposite the flues; but even without that the flues would soon heat the soil, as now arranged, if the bags and cloths used for covering the glass were placed along the latticed parts 8, 8, as then the heat from the flues would tell more on the bed. If cold soil is now put in, it generally becomes hot enough in eight days.

Fifth, Along the length of the flue there are five or six openings left in the brick covering, and on these a paving tile is fixed above the level of the bricks. By moving off these tiles, the flue can be rapidly cleaned without disturbing any part except these tiles. It is always cleaned before commencing Cucumber work, and the exposed portions of the flue are washed with fresh lime. All the walls are washed with lime and sulphur, also, before commencing forcing-work.

Sixth, It will be easily seen how such a pit, with shelves or without them, might be used with the least or with more heat to keep plants for bedding, &c., in winter before commencing with Cucumbers or Melons.

Seventh, Some improvements might be suggested, such as, for early forcing, having a few pipes along the front, one end opening above the flue, and the other communicating with the air outside above the surface level, and furnished with a plug to let air in or not at pleasure. The flue along the back will enable air to be given early by tilting the sashes there. Until the season is advanced Mr. Attwood uses covering for the glass at night. This keeps the heat from the flue more genial.

Eighth, Along the front of the pit outside a young Vine is trained, which, in addition to the sun heat, was no doubt much helped by the wall being heated by the flue inside, so that some fine bunches were produced. Like a good many of us gardeners, who will not let well alone, Mr. Attwood thinks of taking a part of the Vine inside, so as to have early Grapes; but of course if he do so he must lose so much space for Cucumbers. He might have fine Grapes when the wall is covered with the Vine, by having a moveable small glazed box placed against the wall, as indicated by dots (10), and to have them early, half a dozen or a dozen half-bricks in the length of the wall might be moveable, to admit when open the heated air to the Vines. There would not, however, be the same easy access to the Cucumbers.

Ninth, I by no means infer that there is much of the novel in this neat little pit, but I think it will be interesting to amateurs, among tradesmen and artisans especially, from its being built and successfully managed by one of their own class, just on the principle that what is done by one, others may at least try to accomplish. Let it not, however, be supposed for a moment that the possession of such a pit will ensure success unless to its possession there be added, not only practical skill, but unremitting attention.—R. F.

CULTURE OF VINES IN POTS.

JUDGING from the frequency of the applications for information on the management of Vines in pots, it would appear that the culture of fruit trees, and especially of Vines in pots, is not losing but gaining ground. Though Vines have been grown in pots for the greater part of a century, it is only of late years that this mode of cultivation has been generally practised. Now, in almost every garden they are grown more or less extensively; and this has created such a demand for what are known as fruiting Vines, that the supply is barely equal to the demand. Only a few years ago the propagation of Vines for sale was limited to those for planting out; but now we find them grown by the thousand, more for fruiting in pots than for planting new or replanting old vineries. It is by no means

uncommon to meet with thousands of Vines at our principal nurseries, and yet we are told that great as the supply is it is hardly equal to the demand. Partly for the latter reason, partly from the oft-repeated applications for information, and partly for the supposed reason that many like to raise and grow their own Vines for fruiting in pots, and derive as much if not more gratification from doing so as from fruiting them, I am induced to offer some hints on the cultivation of Vines in pots. At the same time I hope that others will also state their experience on this subject.

In propagating from eyes select the most plump eyes upon a cane of the previous year, as thick as the little finger, and brown and hard, showing that the wood has been well ripened. Reject all canes of which the eyes are large and flat, or have the appearance of being double, and more particularly all canes as thick as the thumb, and not well ripened. The wood from which the eyes are taken should be kept from the time of pruning to that of inserting the eyes with the lower end in moderately moist soil, in a house from which frost is excluded. Take care to use no eyes but those from Vines which have not been affected by thrips, red spider, or mildew in the previous year, as the leaves, being robbed of their juices by these pests, can only form imperfect buds at their axils. In preparing the eyes proceed as follows:—Having fixed on one, place the edge of a sharp knife behind where the tendril was, and where the wood is slightly raised make a clean cut through the cane in a slanting direction, so as to bring it out three-quarters of an inch below the eye, and on the same side as that on which the eye is situated. Turn the cane upside down, and make another slanting cut nearly from the same point as the first, but beginning it one-eighth of an inch higher up, and bring the knife out three-quarters of an inch above the eye. The eye thus prepared will measure 1½ inch from cut to cut on the upper side, and be exactly of the form shown in the engraving.



For potting the eyes prepare the pots by placing a piece of pot or crock over the hole, then an inch of smaller pieces, and upon these half an inch or so of the siftings of the soil. Fill the pots to within half an inch of the rim with soil chopped pretty fine with a spade, but not sifted; and a portion of the soil should be sifted through a sieve with quarter-inch meshes, which will give fine soil for covering the eyes, and rough pieces to put at the bottom of the pots over the drainage. The pots should not be less than 3 nor more than 4½ inches in diameter, and the soil should have no manure in it, but be turfy light loam from turves a year old.

In potting place the eye in the centre of the pot, flat, and pointing upwards, and press it in so that the cut part may be imbedded. Now cover the eye, or fill the pot level with the rim, with the finely sifted soil. Passing the thumb round the inside of the pot will lower the soil half an inch or so there, leaving the centre elevated over the eye. If the soil is in the right state no water will be necessary, but if dry give a little round the thumb mark inside the pot, which will keep the water away from the eye, or not wet the soil much over it.

After potting plunge the pots to the rim in a bottom heat of 55° for a fortnight, and that temperature must not be the reading of a thermometer at 1 foot below the surface, but at 2 inches below it, for it is there that the eyes are. Keep them plunged until they raise the soil over them, which will be in a fortnight, or at latest in three weeks, then transfer them to a bottom heat of 75° at 2 inches below the surface. If plunged in a tan-bed it must have a temperature of 90° at 1 foot below the surface, to give one of 75° at 2 inches beneath it; if a dung-bed covered with soil and dry, 85°, and if the soil be wet, 80°. The temperature where the eyes are situated should in any case be 75°. The top heat should be 65° by night. In this heat, top and bottom, the shoots will soon appear, and then the surface of the pots ought to be sprinkled through a syringe, morning and evening, with water of the same temperature as that of the house, causing the water to fall upon them like a fine but thick mist. This will generally keep the soil sufficiently moist; if not, give water so as to keep it moist, but not wet, otherwise the eyes may only give a shoot which will rot off, and, on the other hand, if dust dry the eye will show growth only to the extent of an inch or two, and then be dry and withered.

ing, ought to be completed before this, such as making fresh beds of Rhubarb and Sea-kale.

FRUIT GARDEN.

Apricot blossoms are now fast expanding, and, of course, protection must be afforded in time. Coverings not intended to be often removed should be light and airy, thick heavy material must be so arranged as to be removed in all seasonable weather. Where it is intended to head-down old trees for grafting, this should be done at once, and young stock should be grafted as speedily as circumstances will admit. Finish the root-pruning of all luxuriant trees. Most persons will have observed the effect of moving a large Pear tree very late in the spring, it generally becomes covered with blossom-buds. Such may be the effect of root-pruning at this period. Strawberry-beds should be dressed, remove all dead leaves and superfluous runners, and stir the surface of the soil. Make up all vacancies in the young plantations of Strawberries put in in the autumn. Fresh beds may also be planted if required.

FLOWER GARDEN.

See that rolling, mowing, &c., proceed in due order. Now is the period for laying the foundation of a fine lawn. Provided the weather is not too frosty, let all fresh turfing be completed forthwith. It is a good plan to scatter old tan thickly over fresh-laid turf as a screen from the sun until the roots take hold. Occasional waterings are also essential. Cut all coarse evergreens and shrubs before the bud becomes too much advanced. This is a good time to cut-in Holly hedges. Overgrown herbaceous plants may still be divided, the exterior portions of the stools should be reserved and the interior rejected. Planting done after this time will require much attention in watering, and this at the very busiest season of the year, especially if large plants are removed, and it is too common a practice to put off such work to the last. Look over beds planted with bulbs, and where necessary stir the surface soil so as to keep it open and friable, and also to give it a fresh appearance. Auriculas and Polyanthus will now require particular attention. Air must be admitted daily and freely. Watch the trusses as they appear, and pinch off all the weak ones, for if it is desired to have them strong and in full perfection, only one flower-stem should be allowed to remain. Stir the surface of the Tulip-beds, and give some occasional waterings during dry weather with manure water. The Tulip delights in abundant waterings, unless the soil be naturally wet and stiff. Stir the surface of Pansy, Pink, and Carnation-beds. Keep a good look-out after mice, slugs, and wireworms. Take advantage of the present state of the ground to stir the surface soil of shrubbery borders, to prevent the growth of weeds and give the whole a fresh and clean appearance. Do not neglect to put in plenty of Mignonette, and if not already done, hardy annuals should be sown without further delay, except in cases where they are wanted to bloom in the autumn.

GREENHOUSE AND CONSERVATORY.

Climbers in the conservatory will soon want frequent attention. Prune off all superfluous shoots, stop or pinch the tops of luxuriant leaders, in order to induce a flowering habit in those which produce blossoms from the axils of their leaves, and keep them neatly tied and trained. Many conservatories are unfit places for Heaths, being generally too lofty, and kept too warm for them. Some of the winter-flowering varieties are, however, very ornamental, and should be largely employed in other decoration during the spring months. As soon as they have done flowering let them be pruned back, and give them a liberal shift when they start into growth, using good fibry peat for the purpose, and if they are well attended to during the growing season, they will overcome any injury they may have sustained, though occupying an unsuitable position while in bloom. Azaleas, Camellias, Roses, early-flowering New Holland plants, and forced bulbs will keep show-houses gay for some time yet. Let all plants be placed in the best possible position as regards effect, and aim at maintaining a pleasing variety of arrangement, and displaying the colours to the greatest advantage. Pick off decaying flowers and leaves. In greenhouses keep up a lively circulation of air all the early part of the day, and dispense with fire heat as much as possible. Make a sowing of tender annuals if not already done. Pot off Balsams and Cockseombs, &c. These, however, will do better by far in a frame, with fermenting material, close to the glass, well matted up at night.

STOVE.

Attend to shifting, watering, and maintaining a free circulation of air. Continue to cut down, disroot, and repot

such plants as have been flowering through the winter. These would be better removed to a bottom heat of 80° in some spare pit or frame, and shaded. Follow up shifting, top-dressing, &c., of Orchids. All Orchids that have commenced growing and require potting should be attended to forthwith. This is a good time to shake out and repot *Cyrtopodiums*; they thrive best in good-sized pots, well drained, in a compost of equal parts good turfy peat, loam, leaf mould, crocks, and charcoal, broken rather small, mixed well together, and when the plants are growing freely they must be well supplied with water. Treat in like manner *Sobralias*, and give them abundance of water both at the top and bottom when growing freely. Pot in the same compost, omitting the loam, the following genera:—*Houlletia*, *Acanthophippium*, *Mormodes*, *Lycaste*, *Cycnoches*, *Catasetum*, and *Huntleya*. This is also the best time for parting and shifting *Gongoras*, *Brassias*, and *Acroparas*; they succeed well either in baskets or pots, and should be potted rather high in sphagnum moss, with a few large lumps of charcoal built in amongst it in the process of potting, and all made fast with a few deal pegs. Look well after those noble plants, the species of *Saccolabium*, *Vanda*, *Aërides*, *Camarotis*, and such like, and as soon as their bloom-scapes have fairly burst through the leaves—say one inch long, they will be greatly benefited by plunging them in a tub of water until they are quite saturated; after this the judicious use of the syringe will be of great service to them. Continue to withhold water from *Oncidiums*, except such as are making new leaf-shoots. The general collection of Orchids will now enjoy a good steaming every clear morning for about half an hour; this may be done by sprinkling the pipes or flues when they are warm, and must be done before the fire is banked down. *Vandas*, *Aërides*, and all such plants are increased by merely cutting off a branch having one or more roots. Advantage should be taken of solar heat at all times. Take care that the air admitted to the plants is mild, that all water applied to the plants is warm, and that all plants not clean be washed.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

DURING the past week we have had cold north winds, with bright bursts of sunshine during the day, followed by sharp frost in the following night and morning, sufficiently severe to make short work of anything at all tender that was not duly protected. Rain, hail, sleet, and snow have come duly in their turns. After the mild winter, it is fortunate that the cold has come in the beginning rather in the end of the month, as then almost everything would have been greatly injured. As it is, not many hardy things are sufficiently forward to be hurt much as yet. Unless the weather change soon we shall have a late spring; and the pastures are looking bleak and bare, but even after a cold March it is amazing how fast everything grows in a fine mild April.

In the frosty mornings wheeled manure and compost for the kitchen garden and pleasure grounds from carefully-preserved rubbish-heaps, old hotbeds, &c., and as we are deficient in all fermenting material, saved every bit that would produce heat when mixed again with fresh manure or fresh-collected tree leaves. Dug and trenched ground, and turned over soil-heaps that had not been collected and built in narrow stacks, to which we never give any turning.

When such stacks can be made of turf, a sufficient amount of air can pass through them to sweeten them, and allow them to slowly decompose, and if at all large, the same object can be attained by running open drain-tiles through them, or some well-tied bush faggots. If not more than from 2½ to 3 or 3½ feet wide they will not need such care, and if topped up with a ridge, span-roofed fashion, all the rain that falls will never injure them. All the centre will be nice and dry, well aired, and fibry, ready to cut down for potting, &c., when wanted, after it has stood a year. The turning over such stacks would merely waste the fibre, and render the whole heap likely to be permeated by rain. Kept as a nice ridged heap we can have dry soil without resorting to much shed-room. It is always best to collect such turfy soil when it is dry.

Out-door Cropping.—Notwithstanding hail and snow, the frosty nights and mornings, with sharp winds and bright sun, have dried the drenched ground amazingly, and enabled us to put out a good piece of early Potatoes in good order, and to sow early Peas, Beans, Spinach, and Radishes in the open air. The ground was wetter for Peas than we like, but covered

them over with burnt earth and furnace ashes, the latter acting, too, as a preventive to a certain extent against mice and birds. Whenever there is a hole made by a bird, we shall run a string or thread along the row a few inches above it. Turned over the upper spit of ridges intended for Carrots, Parsnips, &c. Took up a lot of Celery, and set it close among earth and furnace ashes, after putting a little earth to the roots and watering it, in order that we might trench and ridge the ground crosswise, so as to make the dung from the Celery-beds go equally over the ground as preparatory for Onions. It would be of no use sowing early in such weather. Onion seed will stand almost any amount of cold, and young Onions, when fairly up and established, are anything but tender; but many Onion-beds prove failures from a severe frost attacking them when the seeds have pushed from half an inch to an inch. Prepared a border for sowing vegetable seeds, and for Turnips out of doors as soon as it becomes milder. It is of little use just now, as, after the Turnips are up, a very little frost will so injure them as to cause them to spend their energies in throwing up flower-stems, instead of making nice juicy tubers.

Planted *Potatoes* in an earth-pit, covered with old patched sashes, as alluded to last week. There will be very little heat from a few leaves below the *Potatoes*. Until the *Radishes* are fairly up, and the *Potatoes* appearing, will take all the help from sun heat possible to warm the soil, and, therefore, give little or no aid, and throw a little clean litter over the glass at night to keep the heat accumulated from radiating away again. In the case of early *Potatoes* in frames, removed the pots and tiles off other things placed temporarily between the rows that the sun might act more freely on the soil. Such intruders do little harm until the *Potato*-tops are from 6 to 8 inches long. When ours grow as much as 12 inches, we often nip out the terminal bud, which does nothing to check growth, and yet keeps the plants more dwarf and bushy.

Double Cropping.—The making the most of every inch under glass, by temporary or intermediate crops, is not all gain, as much of what is obtained in room is wasted in extra labour in moving, and the head of the gardener is kept constantly at work in contriving that all this moving shall be done to the best advantage. In other cases double cropping is not all gain, there are disadvantages to counterbalance the profits. For instance, we generally have a nice supply of *Radishes* from an early *Carrot*-bed. These *Radishes* in alternate rows with the *Carrots* have been good for some time, and do not yet interfere with the *Carrots* farther than this, that to keep the tops of the *Radishes* short and stumpy, and near the root, we are obliged to give more air than we otherwise would give to the *Carrots*, and thus, for the sake of the *Radishes*, we cannot take the help we might from the sun to hurry on the *Carrots* for pulling, and few luxuries beat a sweet, nice crisp *Horn*, or early *Dutch Carrot* as thick as your thumb and not so long. It is hardly possible to have every advantage by any one system of operations.

We have a lot of *Peas* and *Beans* in tiles and boxes, which we shall keep under protection a little longer before turning them out in the open ground. There are sad complaints of autumn-sown *Peas* in some places being injured and destroyed. For *Sea-kale*, *Rhubarb*, *French Beans*, &c., see last and previous week.

Cucumbers—Pits versus Frames.—Though we like brick pits heated or not heated, we have still a lingering partiality for the old-fashioned frames. They are easily moved from place to place, and are never much out of employment. We also have a weakness in liking them for hotbeds; and one advantage they have over a fixed pit is, that by the level of your bed on which the frame stands you can place the glass frame at an angle so as to command the greatest amount of sunlight. Our partiality for them, not yet quite gone, may be owing to the fact that in our young days we were nearly as successful in obtaining early *Cucumbers* and *Melons* from such hotbed frames as ever we have been in pits heated by hot water, unless, indeed, in the midwinter months. Our earliest *Cucumbers* are in a small pit. We could not well take up more room in the pit, owing to a crop of *Kidney Beans* producing freely; and for the purpose of giving more room in the meantime, we planted out in a frame, as stated the other week, strong plants showing fruit. The bottom heat was about 80°, the top heat at night a little above 60°, and we allowed a good rise from sunshine, and the plants were going on capitally; but one morning on uncovering, our partiality for hotbeds and frames received a damper. Several large holes were seen in the bed, earth was thrown over the leaves, part of the leaves were eaten,

and every little fruit and stem of the plants was cut and gnawed, seemingly more for mischief than for food. We laid the blame to rats; but after borrowing a ferret we found none about that bed, but half a dozen huge barn and grass mice, finding, however, some rats elsewhere. We could not expect the plants to do any more good, and it is fortunate they were not the earliest; and even now we fear to turn out other strong plants, in case they should share the same fate, before we continue a course of trapping and poisoning, &c.

One drawback to the use of hotbeds and frames is, that the bed and the litter form such attractive nesting places for all such vermin. The other evening we looked over the fence into a little wood before roosting-time for the pheasants; and to our surprise and consternation, there were numbers of rats feeding close to the pheasants. If something is not done in some districts the rats will clear everything before them, as they are said to be doing in the Highlands. They will soon be dissatisfied with merely resting and burrowing in a hotbed, or purloining the best garden produce. Last autumn we could scarcely have saved a *Pea*-pod for seed, even if we had tried our utmost. Very considerably of them, the rats let the *Peas* alone when they were nice and soft for the parlour, and even, when harder for the hall; but no sooner did they approach ripeness than up the rat mounted the sticks, and cleared out the pods at his leisure, or cut them off and carried them to his burrow. It is sad to poison, with its attendant risks and cares, and too much care cannot be taken—sad to trap, with its attendant cruelty—sad to tar and feather, or rather frizzle and tar—and then sadder still to find that the enemy in its legions shows no sign of retreating. The new comers from exhausted fields to what are to them “pastures fresh and new” are the difficulty, and to be surmounted must be encountered at a distance from the garden.

Brick-pits are so far a security that the vermin cannot so easily find a burrow beneath the bed, cannot so easily gain access through the walls, but in all pits where the sashes are lifted to give air both mice and rats will gain access by that means. Whilst in a quiet brown study at this time of year, noticing some ripe *Strawberries* on a shelf in a pit mauled apparently by mice, and the seeds on the surface of the berry nipped out, we cast our eye along the wall, and, ere we could prevent them, two mice mounted the wall and whisked in at the opening tilted up for air. Trap and poison were our only alternatives, and the difficulty is to find a bait more tempting than the little seeds of the *Strawberry*. It is rare they eat much except the seeds, but that is more than enough. When a hole is made, or half a *Strawberry* devoured, the mouse is sometimes blamed for the doings of the slug, or snail. The above occurrence, and too many like it, showed that even pits are not secure against such predators, unless the ventilators are placed in the walls, and these again are secured by plates of fine wire or perforated zinc.

We give this prominence to such vermin in hotbeds, as from several letters we find we are not alone in our experience of the evil; and in answer to inquiries as to what else is to be done to secure against future loss, especially in frames, we may mention what we are doing, and what we intend to do. In the middle of the day, when warmest, we will remove the *Kidney Beans* in pots to another place where they will finish off their crop, and prepare the pit for *Cucumbers*, keeping *Melon* plants there too until they are a good size so as to find room for them. Then as respects frames, before we plant *Melons* or *Cucumbers* out into them, we will bank up a space of 6 inches on the slope all round the frame, where it touches the hotbed, with clay or stiff loam, kneaded and watered, and left with a smooth surface. This is to prevent any noxious smell penetrating there. Then we will smear the lower part of the frame outside, and part of the dung beneath it, with coal tar, the smell of which is disliked by mice and rats, and the touch of which on their fur coats they detest still more. This, with watchfulness, traps always in use, and the visit of a ferret now and then to leave at least his scent behind him, is about all we can think of at present to enable us to conquer these intruders. If any of our readers can suggest something better, we and many more will be thankful.

It is of little use recommending the best friend of the gardener—a good cat, or a company of them, as if kittens are obtained in most places they disappear as they emerge from their kittenhood, and begin to be really useful. The gamekeeper knows that no animal is so easily enticed from its usual haunt to its own destruction, and acts accordingly; and poor, faithful, affectionate pussy is hung up.

FRUIT GARDEN.

Much the same as last week, which see. Shut up the orchard-house at night in this cold weather. In a lean-to house the blooms against the back wall in the most forward house are beginning to open. Those in pots in the front of the house are not yet showing colour. As soon as the sun melted the hoar frost on the glass gave plenty of air, as we have no wish to forward them; but as soon as the bloom is fully open in the first house, and the weather becomes milder, we will shut up early, and give less air to bring on the crop a little earlier. This is a safer plan and more effectual than encouraging the blooms to open early in spring. We would not have grieved if the trees were not in full bloom until towards the end of March, but they will open in spite of us. A correspondent directs our attention to the expression in this department last week, page 204—"Placed a surface-dressing of hot dung all over," &c. This should have been, "Placed a surface-dressing of rotten dung from old hotbeds all over." We would also take the opportunity of drawing attention to what was there said of covering the surface of the soil with dry earth after watering. This dry surface all over was a good preservative if the frost had been more severe, and yet the watering prevented the buds suffering from dryness at the roots. With the surface of the soil dry, and the atmosphere still and rather close, the blooms of Peach trees will stand a good deal of frost uninjured, and Apricots will stand much more in a dry air. The fine bursts of sunshine just suit the setting, swelling, and ripening fruit of Strawberries, and yet the early crops have given no reasons for dissatisfaction.

Canvas Screens.—We agree in all that Mr. Keane says, page 203, about canvas coverings, moveable at pleasure, being the best protection for tender fruit trees out of doors, and, with the exception of glass, the cheapest in the end. In a great number of gardens, however, the motto of action would seem to be "Sufficient for the day is what must be done," and therefore no end of merely temporary modes of protection must be resorted to. We allude to this matter here, however, for drawing the attention of those fortunate enough to possess such moveable canvas, to a use of them, not so much employed as it ought to be, and that is, for retarding the opening of Peach blossom on the open wall. What we have stated above as respects trees in an orchard-house, as well as many other facts, prove that the temperature of the trees against the wall is much higher in sunshine than is the atmosphere or the soil only a few feet from the wall. In a March distinguished for sunshine the buds will therefore be too forward—much too forward in general in proportion to the heat of the soil in which the roots are imbedded. The screens, therefore, should be used early, kept on during sunshine to keep the buds back, and yet allow the ground to get mellow and warm, and kept off at night and in dull cold days until the buds are so far advanced that it would not be safe to do so. This retarding will help to bring the buds into full bloom when the weather will in general be milder, and the ground more genial and warm. Canvas, unbleached calico, frigi domo, and even fine Nottingham netting, will last many years if kept for such purposes alone, and put away thoroughly dry. The first expense is the only drawback; and or this account hundreds must do their best with makeshifts, though well aware that "What is worth doing at all is worth doing well," and that a penny thus saved is often not a penny gained, but a sixpence lost.

ORNAMENTAL DEPARTMENT.

We have not room to say much here; but much of our work was a repetition of that of previous weeks. In a dry day swept and rolled the walks, which had been left a little rough from sweeping snow off them. Rolled the lawn, pruned Laurels and other shrubs. Prepared for future turfing, dug and turned beds for bedding plants, washed glass when mild and wet. Gave plenty of air when mild to cold pits. When wet washed pots. Potted Geraniums, Fuchsias, &c. Prepared soil for Begonias, and made cuttings of Lobelias, Verbenas, Geraniums, Ageratums, &c., and in a week or so will take off great quantities more, when they will stand in a slight hotbed. Pricked-off seedlings of Lobelias. Sowed lots of the tenderer annual seeds, and will leave such half-hardy plants as Marigolds, Asters, Tropæolums, Stocks, for a fortnight or three weeks longer. Our ground is too cold and wet for sowing any but the hardiest annuals out of doors; but in warm, light, dry, soils, the North American annuals may be sown, but even they will do as well if sown later. For an early display an autumn sowing is more desirable. Looked after plenty of potting and

striking material under cover, that it might be sweet and warm when used.—R. F.

COVENT GARDEN MARKET.—MARCH 17.

A FEW new Grapes, chiefly from pot Vines, have made their appearance. The market in consequence of the recent frost is not so much glutted with Greens and other out-door vegetables, and the prices of some have therefore advanced. Large quantities of the usual kinds of salading, also Artichokes, Early Frame Potatoes, &c., continue to arrive from the Continent. Pines are more plentiful, but find a ready sale at last week's quotations. The arrivals of Potatoes are large.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.					
Apples.....	½	sieve	2	6	to	4	0	Melons.....	each	3	0	to	5	0
Apricots.....	doz.		0	0	0	0		Nectarines.....	doz.	0	0	0	0	
Cherries.....	lb.		0	0	0	0		Oranges.....	100	4	0	10	0	
Chestnuts.....	bush.		8	0	16	0		Peaches.....	doz.	0	0	0	0	
Currants, Red	½	sieve	0	0	0	0		Pears (kitchen) ..	doz.	4	0	8	0	
Black.....	do.		0	0	0	0		dessert.....	doz.	6	0	12	0	
Figs.....	doz.		0	0	0	0		Pine Apples.....	lb.	8	0	12	0	
Filberts.....	lb.		0	0	0	0		Plums.....	½	sieve	0	0	0	
Cobs.....	100	lbs.	0	0	16	0		Quinces.....	½	sieve	0	0	0	
Goschberries..	½	sieve	0	0	0	0		Raspberries.....	lb.	0	0	0	0	
Grapes, Hothouse..	lb.		15	0	25	0		Strawberries.....	oz.	5	0	7	0	
Lemons.....	100		6	0	10	0		Walnuts.....	bush.	14	0	20	0	

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.				
Artichokes.....	each	0	6	to	0	0	Leeks.....	bunch	0	3	to	0	0
Asparagus....	bundle	6	0	12	0	0	Lettuce.....	per doz.	2	0	0	0	
Beans, Broad..	bushel	0	0	0	0	0	Mushrooms.....	pottle	2	0	3	0	
Kidney.....	100		3	0	4	0	Must.& Cress, punnet	0	2	0	0		
Beet, Red.....	doz.		2	0	3	0	Onions.....	bushel	3	0	5	0	
Broccoli.....	hundle		1	6	2	6	Parsley.....	sieve	2	0	3	0	
Brus. Sprouts..	½	sieve	2	0	3	0	Parsnips.....	doz.	0	9	1	6	
Cabbage.....	doz.		2	0	3	0	Peas.....	quart	20	0	0	0	
Capsicums.....	100		0	0	0	0	Potatoes.....	bushel	2	6	4	0	
Carrots.....	bunch		0	4	0	8	Kidney.....	do.	3	0	4	0	
Cauliflower....	doz.		2	0	6	0	Radishes.....	doz. hands	0	6	1	0	
Celery.....	bundle		2	0	3	0	Rhubarb.....	buidle	0	9	1	0	
Cucumbers.....	each		1	6	4	0	Savoys.....	doz.	2	0	3	0	
pickling.....	doz.		0	0	0	0	Sea-kale.....	basket	2	0	2	6	
Endive.....	score		1	0	2	0	Shallots.....	lb.	0	8	0	0	
Fennel.....	bunch		0	3	0	0	Spinach.....	bushel	5	0	0	0	
Garlic.....	lb.		2	0	0	0	Tomatoes.....	½	sieve	0	0	0	0
Herbs.....	bunch		0	3	0	0	Turnips.....	bunch	0	4	0	6	
Horseradish ..	bundle		2	6	4	0	Vegetable Marrows	dz.	0	0	0	0	

TRADE CATALOGUES RECEIVED.

John Salter, Versailles Nursery, William Street, Hammer-smith, W.—*Descriptive Catalogue of Chrysanthemums, Dahlias, Pæonies, Phloxes, Pyrethrums, Hardy Variegated Plants, &c.*

John Morse, Dursley, Gloucestershire.—*Catalogue of Cuttings of Dahlias, Fuchsias, Chrysanthemums, Pelargoniums, Bedding Plants, Stove and Greenhouse Plants, &c.*

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c.*, 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

FANCY PELARGONIUMS, STOPPING AND POTTING (*S. G. Sadlebon*).—You may stop them now, but merely take out the point of the shoots and pot them into eight-inch pots. They will not bloom until the end of June. The cooler you keep them, and the more light and air given the finer they will be. Drain the pots well.

FERNS (*M. B.*).—Lycopodiums covering the soil's surface beneath Ferns is not injurious to them. We have ourselves the soil so covered. It is impossible for us to be clairvoyant as to what the cost of structures would be, of the size and degree of ornament about which we have no information.

CHRYSANTHEMUM TRAINING (*K. M. H.*).—In "Florists' Flowers for the Many" are some directions. If you enclose five postage stamps with your directions, you can have it free by post from our office.

MATERIAL FOR COVERING FRAMES (*G. C.*).—I have tried almost every kind of material for this purpose, and find nothing equal to mats. They are cheap, and, with care, will last for two or three years.—G. ABBEY.

BLACK ALICANTE AND LADY DOWNE'S GRAPES.—Will some of your correspondents state the result of their experience, as to which of these two late Grapes has proved the better? My own experience leads me to favour Lady Downe's both as regards keeping-qualities and flavour. I originally intended to discard Lady Downe's and plant Black Alicante in its place, but I am at present rather doubtful as to whether it would be wise.—G. D.

SAPONARIA CALABRICA SOWING IN ROSE CIRCLES (*A Subscriber*).—It will not injure the Roses beyond impoverishing and keeping the soil dry around them. Sand placed on the surface and pointed in would make it all the better for the Saponaria.

IVY BERRIES, SOWING (*Idem*).—If sown now they will come up about May, and be three years before they are fit to transplant. You would cover a border much more quickly by putting in cuttings in a shady border from April to July, and keeping them moist till rooted, and afterwards well supplied with water in dry weather. Cuttings so treated will be fit for planting out in the following spring.

NEWTOWN AND PARADISE PIPPIN APPLES (*Mary Jones*).—The Newtown Pippin is a large yellow American Apple, good alike for table and baking, but does not do well in our climate except in warm localities, and requires a wall to be first-rate. A south-west or west aspect is most suitable. The Paradise Pippin is better known as the White Paradise or Lady's Finger, its flesh is more yellow than that of the Newtown Pippin, and it is not ribbed, even obscurely, as is the Newtown.

ROSES, RAISING FROM SEED (*Idem*).—Take some pots or pans about 9 inches in depth, drain them well, and fill to within three-quarters of an inch of the rim with rich sandy loam two-thirds, adding one-third of sandy fibry peat. The lumps should be broken, and distributed over the surface from half an inch to an inch apart, and covered with half an inch of soil. The pots or pans may be placed in a warm open situation in the open ground, plunged to the rim in coal ashes. Over the pots place a cap of wire so close as to prevent mice getting through, and so high as to allow of the plants coming up; an inch space between the soil and wire will be ample. The wire assists in keeping the soil moist, and water should likewise be given in dry weather. Some of the plants will, in all probability, make their appearance in May, if the seeds are sown at once; but very often the seed does not germinate until the following spring. When the plants have made three or four rough leaves in addition to the seed leaves, take them up carefully with the haft of a budding knife, or some such implement, pot them singly in small pots, and place in a cold frame for a few days, or in a shady situation. In three weeks or a month they may be planted out in good rich soil, and by August they will have grown strong, some of them of sufficient strength for budding. Two stocks may be budded with each seedling. These will make strong shoots in the following year, if the budding prove successful, and these, if left unpruned, will produce flowers in the following or third year. On their own roots the seedlings will not flower until the fifth or sixth year.

SLUGS, DESTROYING (*Cestria*).—We do not find any plan answer so well as strewing a little dry soot around the pots or pans, and going at night with a lantern and catching them at their meals. They are then easily destroyed. A few fresh Cabbage leaves laid down at night will be found to have slugs under them in the morning. Perseverance in either of the above plans will soon clear the place.

EPHIPPYLEM TRUNCATUM LOSING THE POINTS OF ITS SHOOTS (*A. C. C. H.*).—This arises from keeping the plants in too low a temperature. You cannot keep them too dry if the wood or shoots do not turn soft and shrivel, but water should be given to prevent this. You have kept them too dry as well as too cool, and now that moisture is given the shoots drop off at the joints. Keep them in a temperature of from 45° to 50° in winter, and not so dry as to cause the stems to become soft and shrivelled.

PLANTING CYCLAMENS (*Idem*).—Plant the corms of Cyclamen neapolitanum in June in pots or in the open ground, and they bloom in autumn; of *C. coum* in pots in July, and they will bloom in January, and onwards; of *C. Atkinsii* at the same time, and they will bloom in winter and early spring; of *C. persicum* in August, and again in September, and they will flower from November to April according to the temperature. Pot the varieties of *C. europæum* in spring, and they bloom in summer, and they are the sweetest of all. *C. repandum*, which blooms late in spring, should be potted in autumn. If you write us, stating more explicitly your wants, we will endeavour to meet your wishes.

GELSENIUM SEMPERVIRENS (*J. P. G.*).—It succeeds best trained to the pillars of a conservatory. If grown out of doors it requires to be trained against a south wall, and to be matted over in winter. Miller so cultivated it in the Botanic Garden at Chelsea. It has been called *Bignonia sempervirens*, *Anonymus sempervirens*, and *Lisianthus bipervirens*, yet Catesby says that it sheds its leaves in winter in its native place, America, where it is popularly called "Carolina Jessamine." Parkinson cultivated it in 1640, and says that it was given to him by Tradescent under the name of *Gelsenium*, which is derived from *Gelsenino*, the Italian name for the Jasmine. We shall be obliged by any of our readers stating their successful mode of culture, and whether they have succeeded in blooming it out of doors.

TRAINING VINES HORIZONTALLY (*Inquirer*).—Your Vines receiving little or no artificial heat will not require to be brought to a horizontal position, nor depressed at the ends; but if they have a cane of last year more than six eyes in length, that part should have its end brought lower than the bottom of the rafter, otherwise the upper part or end will break some few eyes strongly, and those lower down on the cane will not break at all, or very weakly. If the Vines are furnished with spurs from bottom to top of the rod, and air be given at the back of the house, they will break well throughout the length of the rod, but more strongly at top, as they almost always do.

SECCENSIONAL CROPS OF PEAS (*A Constant Subscriber*).—Having sown Dillstone's Prolific and Kingender, you may sow Dickson's Favourite by the time this appears in print, and in ten days afterwards sow Priczetaker, in another ten days Champion of England, and successional crops of it every ten days up to the end of April, at which time sow Veitch's Perfection, another crop of the same ten days later, and after a like interval sow General Wyndham, once in May, and a last crop in the first week of June.

ROSE-BUDS (*S. N.*).—We never heard of any florist or nurseryman who would sell buds for budding.

VINERY AND PEACHERY COMBINED (*H. Vaughan*).—In your house, 50 feet long, 11 feet wide, 12 feet in height at back, and 6 feet in height in front, and to be appropriated to Vines and Peaches, Peaches against the back wall, and Vines up the roof, we do not consider that you want anything in the shape of a pit at all in the house. We would proceed as follows, according as you wish the roots of Vines and Peaches to be inside the house, or the roots of the Vines partly outside, and according to the materials at command, bearing in mind that though we advocate fresh loam, yet good garden soil would do very well, especially if well mixed with fresh soil and enriched. First, To have all the roots inside. It would be well to concrete the bottom of the soil from 30 to 36 inches below the intended surface, and to have a drain in front lower than the concrete, the concrete sloping from back to front to the drain. Then, if you can get it, fill the place with fresh loam from the topsoil of a pasture, after placing from 8 to 12 inches of rubble over the concrete. In doing this place the turf over the concrete, and let the rest consist of the soil from the pasture taken from under the grass for 2 or 3 inches in thickness. Let this be broken with the spade, but not finely, and for such a space add one ton of broken balled bones, three cartloads of rotten sweet bodded manure, and three or four loads of lime rubbish. If you cannot get pasture soil you may use good fresh loamy soil from the sides of roads in your neighbourhood. If there is no danger of stagnant water, no chance of the roots going down into bad cold subsoil, you may dispense with draining and concreting; but it is very possible you may wish you had done so afterwards. If the soil of the garden is good, you may use that with half, or less, new soil mixed with it, and the same amount of bones, and even more lime rubbish, and less of manure. Strength can always be given by surface-dressings, and that is the best way to use bone dust. In this case we would plant the Peaches at back, and the Vines in a row about 3 or 4 feet from the front wall and if you liked, you could arch the stems over towards the front, so that the bearing rods should extend from front to back of the glass. The position for planting the Vines will be the best for enabling them and the Peaches to root freely inside the house, and will also enable you to have a walk all round the house, with a border or bed in the middle, which you can appropriate to any purpose that will not cause the Peaches on the back wall to be shaded. By such a plan the roots will be confined entirely inside the house, and in the openings between the Vines you could grow low-fruited plants, as Figs, Cherries, &c., in pots on the bed or floor. By surface-dressings you could keep Peaches and Vines long fruitful by such a plan, and you would have them completely under control, as respects moisture and dryness. To do justice to the Peaches, the Vines should be planted about 6 feet apart, and pruned on the spur system, say seven in the length of the house, and for an unheated house we would have four Black Hamburgs, two Royal Muscadine, and one Buckland Sweetwater. By the second mode we would have the front wall built on arches, or have pillars to support the sill, extend the border on the same slope as inside, from 6 to 12 feet beyond the wall, and in that case we would plant the Vines inside, from 18 to 24 inches from the front wall. This would give more room to the roots of the Peaches, and offer less risk of the roots of Peach trees and Vines interfering with each other, but would require more labour and material. In such a case the great thing to secure is, to have the inside ground higher than the outside. In either case you could see the centre of the house for temporary purposes, and might have fruit trees of any sort in pots before the Peach trees and Vines were established. A good Peach-house alone could be made of such a house, by planting the back wall as you propose, and then planting similar trees within 2 feet of the front wall, and training them to a circular trellis 4 feet in height at back, and 4 feet from back wall. We have seen such a house with Vines also up the roof, but if not very thin they were sure to injure the Peach trees with their shade. As to terra cotta or other material as boxes for windows, there used to be plenty of kinds in the New Road, London, such as at Austin & Seeley's, and there are so many inquiries that it would be worth while for makers to advertise, giving prices and sizes. Mr. Franklin, at the Stevenge Depot, keeps a good assortment of elegant vases, and we have no doubt there are plenty of makers. A rich brown tint generally looks best for houses that are painted a stone colour; but where there is a difficulty in obtaining elegant figured terra cotta boxes, such may be done by making neat wooden boxes, which may be painted of any colour and sanded to resemble stone, and may be tessellated, striped, or engraved, by tacking suitable pieces on, so that when sanded they would resemble different kinds of stone, and have the advantage of being much easier to move. Terra cotta boxes, however, may be had in great variety in London. We do not know how you are in your neighbourhood. The last time we were at Messrs. Veitch's nursery, there were plenty to choose from.

PRUNING MORELLO CHERRIES (*An Early Subscriber*).—In general it is better not to shorten in the shoots of Morello Cherry trees at all, if they are in good bearing condition, but to thin them out pretty well. Where, however, it is necessary to shorten such shoots, the wood-bud may be distinguished from the bloom-bud by its being smaller and more pointed. It is better, however, to leave the pruning of such trees till late in the winter, when the advanced state of the buds will tell their character much better, and the tree does not suffer thereby. Of course, do not let the buds be too far advanced to fall off in the operation, which they easily do.

WELLINGTONIA GIGANTEA (*H. Porter, M.D.*).—Thank you for the male and female catkins of *Wellingtonia gigantea*. The one you sent is not unimpregnated as you suppose, but an impregnated one. Impregnation takes place at the stage in which the catkins at present are, and although insects and the winds will doubtless aid in the process, there can be no harm in shaking the branches against each other as you suggest.

VINE LEAVES SPOTTED (*J. C.*).—The leaf sent exhibits the spotted appearance resulting from the admission of cold air in front whilst the leaves are wet, and the sun shining powerfully upon them. We have also known the same result arise from pouring water upon the pipes whilst these were hot, and the sun shining on the condensed steam.

MUSHROOM-BED FAILING (*C. J.*).—As one bed of Mushrooms bears well, and the other shows well but the Mushrooms rot off when the size of small marbles, we suspect that the bed is either too dry or too wet, not at the surface, but some inches below the surface. You will judge best by making some holes with your fingers and trying. If the manure is dry, make little holes over the bed with a pointed stick and water several times, so as to wet the manure a little without soaking the bed. If the bed is too wet, sweep off the most of the Mushrooms and cover with 3 inches of rough hay; that may tend to heat and dry the bed.

KALMIA LATIFOLIA CULTURE IN A POT (*A Subscriber from the Beginning*).—Your plan will be to give it a somewhat large pot, drain it well, and use a compost of turfy peat chopped with a spade but not sifted. If you will do this, and plentifully supply the plant with water when making new growths, and keep it at all times moist, with the pot plunged to the rim in coal ashes in a warm open situation, you will find it a free-blooming shrub. This is all the pains we take with ours for forcing. We take up good strong bushy plants, pot them in pots sufficiently large to hold them comfortably, draining the pots efficiently, and using a compost of turfy brown peat or bog soil, plunge the pots to the rim in coal ashes in a sheltered open situation, and keep the plants well supplied with water throughout the summer, and at all times moist, and we find them set plenty of bloom, which we bring out by placing them in a house with a temperature of 50° by night and not exceeding 55°. They are placed in a house having a temperature of from 40° to 45° for three weeks, and are then introduced into the above temperature. They are taken outside after blooming, and placed in the same situation as before, where they remain over winter. Being potted in spring they make a good growth, and are eligible for forcing again in the following winter. They require a rather large pot for their size, and plenty of water in summer.

SOOT WATER FOR EVAPORATING-PANS (*C. P.*).—Take a peck of soot placed in the bottom of a butt or barrel, work it into a stiffish paste with an old scrub-broom, with two or three quarts of water so as to wet the powdery dry soot, then add from forty to sixty quarts, stirring all well together. If you wish the water to be clear, add a pound of fresh lime, and in a day or two you may fill the pans with strong clear soot liquid. Take flowers of sulphur, say one pound, mix it up in a paste with a small quantity of water, then add a dozen quarts, or more if you like, and put by itself in the evaporating-pans, or mixed with the soot or other water. In this case the sulphur will fall to the bottom, and may want brushing up at times. When the water in the pans gets hot, weak sulphur effluvia will be given off. This is a safer plan than putting sulphur paint at once on pipes or flues.

HEATING A MUSHROOM-HOUSE (*Fungus*).—Two three-inch pipes will be ample for such a small Mushroom-house (10 feet by 6 feet), if the walls are secure. The house seems low (5½ feet at back), to do work in comfortably. The pipes should not go below the beds, there would be danger of over-heat as well as over-dryness. It is of little consequence whether the shelf or platform-bed have the bottom open or close; when open, Mushrooms frequently come through; when solid, as slate, woodlice are less troublesome. Open-spar slating is the worst roof for such a Mushroom-house, packing with hay or straw will be advisable. A thatched roof would be better. Have a stop-cock as proposed. If the bed out of doors has been wet, and has been made four months, most likely the spawn has perished. Try a bit of the bed and see. If the spawn is sound, it will no doubt produce yet.

REMOVING LEAVES FROM CUTTINGS (*W. D. T.*).—The propriety of allowing leaves to remain on cuttings, or removing a good portion of them, depends entirely on the treatment you are able to give them. Remove not a leaf, say some—and right enough too, if you can so arrange that by a close atmosphere, shading from sun, &c., you can keep these leaves from flagging, in other words, force them to absorb rather more than they perspire; then the more leaves on the cutting the sooner will roots be formed, and the plant established. Remove most of the leaves, say others—and if enough are left to keep on growth, the cutting will be longer in striking, but it will require less trouble in preventing flagging from extra evaporation. Generally the medium mode is resorted to, a few leaves are removed from the base of the cutting, and some of the other larger leaves are shortened, the smaller allowed to remain to keep on the growth. In the case of Calceolarias, to which you refer, we generally remove the two leaves at the bottom, or the joint at which we cut across, and leave the others mostly as they are; but then making the cuttings in the end of October, they suffer little from the evaporation of their juices. Were we making cuttings of similar plants in April, we would reduce the foliage or shade them.

FORMING A VINERY OUT OF A PIT (*An Eight-years Subscriber*).—If you cement the bottom of the pit as you propose, place 6 or 8 inches of open rubble over it, and then a layer or two of fresh turf, grass side downwards. You may use from 9 inches to a foot of such fresh turf with a portion of broken bones; you may use the rest of the turf, mixed with other soil, for another layer, and a portion of the bones and lime rubbish, but have nothing to do with the stuff dug out of the foundations for the greenhouse. Surely you might get a couple of loads or two of good loam from the sides of a highway to mix with lime rubbish, &c.; if not, take some of the best aired sweetened soil from the kitchen garden. Any Vines may be grown in such a pit, heated as it is by flues. We have given lists to-day and last week to suit cold houses. Four Vines will be enough, or three if you confine them to the rafters. If entirely for Vines you might try five—say one Sweetwater for earliness, one Muscat of Alexandria, two Black Hamburgs, and one Lady Downe's for late cutting. Use spur pruning.

RADISHES IN POTATO FRAME (*Caatub*).—You did quite right to keep on the lights, the Radishes will not become drawn, air being given in mild weather, especially as the bed is cold. After the seed leaves appear it is necessary to give air plentifully, but when there are rough leaves it is not possible to keep the lights otherwise than closed in frosty weather, air being given in mild periods. They will not draw up so much as to sustain injury, only they do not stand too close or rank a heat.

RHUBARB FORCING (*Idem*).—The roots should be laid on a few inches of soil, and pretty closely together, and soil should then be packed or placed between them so as to fill up the intervals; soil should likewise be placed against the sides so as to cover the roots. They will assuredly root into the soil if it is kept moderately moist. The rotting of the stalks is due to the roots being so closely packed, certainly not from the absence of soil. Good strong roots only are eligible for forcing, those planted three or four years answer well.

BROWN VARNISH FOR WOODWORK (*W. J.*).—Sorted gum anime 8 lbs.; clarified oil 3 gallons; litharge and powdered dried sugar of lead, of each ½ lb.; boil till it strings well, then cool a little, thin with oil of turpentine 5½ gallons, and strain.

PINE-APPLE PLANTS (*M. W.*).—We do not know where you can obtain any. You had better insert a short advertisement stating precisely what you require.

HYACINTH (*N. C. Nengah*).—The spike you mention is fine; but at the Royal Horticultural Society's Show last week there were many still finer.

CAMELLIA FLOWERS POOR (*A Lady Gardener*).—We fear that it is now too late to thin the blooms of your Camellia plants, which you say are five or six on the tip of each shoot on trees only 2 feet high. The bloom-buds ought to have been removed in September or before, leaving only one at the point of each shoot. It is, however, good practice to thin such buds by degrees, taking off a few at a time, and, when they are about the size of a Pea. You may remove some of the smaller ones now, but it is too late to expect large blooms this year; after blousing, if the plants want potting, let that be done, and keep them rather close and warm until June, when they may be gradually inured to the open air, and buds will then be forming. Thin them in August, or at latest in September, and you will have more success another year.

FLOWER BORDER PLANTING (*A Regular Subscriber*).—If your border abuts at once on gravel, with a box edging, or tile or stone bordering intervening, then we would like the "master's" choice as well as your own; but if there is a grass verge between the border and walk, then we prefer your proposed mode of planting—namely, beginning at the front with Bijou Geranium; second row, Calceolaria Aurea floribunda; third, Perilla nankinensis; fourth, Punch Geranium.

VENTILATING TWO ADJOINING GREENHOUSES (*D. D.*).—By opening the door of your first house, or having larger openings above the door, and in the opposite end, you would have a lower temperature and a rather close moist atmosphere to suit your Ferns, and there we would chiefly place them. In your new house, 10 feet by 6, and with glass merely on the roof, if you did not open the door we would either have three openings, say 12 inches by 18 each, in the front or back wall, or two large openings a yard square in each end. Then on the shelves you propose, you could grow Fuchsias, Geraniums, &c.; and if you wish, Ferns, &c., as you intimate, then we would keep them chiefly on the shelf inside of the front wall, as that would keep them from a fierce sun.

SIX ROSES FOR NORTH WALL (*J. W. B.*).—For quick growth and flowering early in the season, we would have Felicite perpetue, one of the best-foliated Roses known; then you might either have Jane Hardy, Yellow Noisette, and Fellenberg, a crimson of the same class; Bouquet de Flore, one of the best Bourbons; and Aimée Vibert, a good old Rose of the Noisette section. We fear the Banksian Roses would not succeed against a north wall, but you might try Gloire de Rossmore, a showy Rose less rampant than some others. We would not recommend you to try Teas, as they are too tender, and so, too, is the Macartney Rose.

PEACH TREES SHEDDING THEIR FRUIT (*Norfolk*).—We think that your trees cast their fruit in the process of stoning, and this is mostly due to over-cropping, and in some cases to the roots being deep and wet. In the former case thinning the fruit so as to leave three to every two square feet of wall covered will prevent it to a great extent; but if it proceeds from the roots being deep and wet, thorough draining is the best remedy, the trees being removed next autumn and the roots brought nearer the surface. If the fruit drops when the second swelling takes place, then it may result from want of moisture. A good watering a fortnight previous to the swelling for ripening, would cause the fruit to swell well, but it is of no use giving surface waterings, one good soaking is worth ten of them. The fruit drops very often prematurely from the leaves being destroyed by red spider. Frequent syringings will prevent this evil.

GLADIOLUS SEED SOWING (*Idem*).—The seed should be sown in pans of good, rather light, turfy loam two thirds, and sandy peat one third. Place the pans in a steady heat of from 50° to 55°. The seeds if sown in October will produce by this time nice little plants from 1 to 3 inches high, and these, rested and hardened for a month, may be planted out in a warm border. In autumn they will have plump little bulbs calculated to bloom in the following year.

PLANTS FOR WALLS OR PIERES IN CONSERVATORY (*Sussex*).—Cissus ant* arctica, Cobea scandens variegata, Clematis indivisa lobata, Delichos ligmosa, Hibbertia grossularifolia, H. volubilis, Kennedyia inophyllis floribunda, Habrothamnus elegans, Sollya linearis, Mimosa prostrata, Tropaeolum speciosum, Solanum jasminiflorum variegatum, Jasminum heterophyllum, Bignonia jasminoides splendida, and Abutilon striatum.

ROSES FOR CONSERVATORY (*Idem*).—Noisette; Celine Forestier, Miss Gray, Jane Hardy, Aimée Vibert, Ophire, Tea-scented: Adam, Gloire de Dijon, Favoniensis, Alba rosea, Josephine Malton, La Boule d'Or, Madame de Faleot, Marechal Neil, Niphetos, Triomphe de Luxembourg, and Smith's Yellow.

ACACIAS FOR POT CULTURE (*Idem*).—Acacia Drummondii, A. juniperina, oleifolia elegans, grandis, hybrida, longiflora magnifica, and cricocarpa. None is more beautiful than A. arnata, which you have.

FLOWER-BEDS (*J. P. M.*).—We think either plan would look very well, but viewed from the window, we ourselves would prefer more variety—thus, 1, 1, centre Golden Chain, band of blue Lohelia, edging of Cerastium; 2, 2, Scarlet Geranium and Manglesü for edging; 3, 3, yellow Calceolaria and Purple King; 4, 4, Scarlet Geranium, edged with Flower of the Day, thick, and the flowers removed; 5, 5, the same as 1, 1. In order that all the edgings may be light, you might skirt round 3, 3, with a narrow belt of variegated Arabis or variegated Alyssum. Notices of Shrubland Park by Mr. Beaton will be found in Number 281, 282, 417, 418, 421, Old Series; and by Mr. Fish in Numbers 472, 473, 476, and 477, all of which may be had from our office.

RASPBERRY CANES HAVING LATERAL SHOOTS (*A Lady Gardener*).—It is seldom that much good is done with them, and they may as well be cut off or shortened; if, however, these shoots have produced fruit last year, we fear your chance of a crop this season is not good. Some kinds, as the Fastoli, are with us very liable to bear on the current year's shoots, and as a consequence these shoots are useless for the next year, and ought to be cut out at pruning-time; but, as you says yours are vigorous, it is likely they have not borne fruit, and may do well. We should be disposed to leave some of these shoots on the canes newly planted, for their foliage will help the plant to make fresh canes, and much fruit can not be expected.

NAMES OF FRUITS (*Or. D.*).—Old Colmar Pear.

NAMES OF PLANTS (*Lex*).—Your correspondent's handwriting must be difficult to decipher. The plants intended by him are Bursaria spinosa, a native of New South Wales. Melaleuca decussata is also from New South Wales. Sida mollis, a native of Peru, requires stove culture. Isopogon aemoniifolius, a native of New South Wales. Arthropodium paniculatum, a bulbous-rooted plant, also from New South Wales. The

New South Wales plants require greenhouse culture. There are coloured drawings of them all in the "Botanical Magazine." (J. B. P.)—1, *Nephridium exaltatum*; 2, *Pteris cretica* (?); 3, *Lastrea glabella*; 4, *Lastrea atrovirens*; 5, *Woodwardia radicans* (?); 6, *Selaginella esia*. (H. F. U.) 1, *Onycheium japonicum*; 2, *Pteris linearis*; 3, *Adiantum formosum*; 4, *Adiantum pubescens*; 5, *Aspidium molle*; 6, *Asplenium floccidum*; 7, *Platyloia rotundifolium*; 8, *Selaginella denibata* (?). (A Constant

Reader).—Most of the scraps sent are not sufficient for determination. 1, *Asplenium marinum*; 2, *Asplenium flabelliforme*; 4, *Polypodium vulgare*; 5, *Lomaria alpina* (?); 6, *Adiantum cuneatum*; 7, *Aspidium macrophyllum*. (An Engineer).—*Eschynanthus zeylanicus*. (A Subscriber, *Bullinastor*).—1, insufficient for identification; 2, probably a scrap of *Pteris cretica*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 17th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 11	30.299	30.154	45	36	41	40½	S.W.	.00	Overcast; cloudy; fine at night.
Mon. . . 12	29.978	29.530	49	28	41	40½	W.	.00	Fine; uniformly overcast; densely clouded; slight frost.
Tues. . 13	29.528	29.514	46	15	42	41	N.	.00	Fine; cloudy; sharp frost at night.
Wed. . 14	29.516	29.425	45	18	42	41	N.	.00	Frosty; very fine, with bright sun; frosty.
Thurs. 15	29.232	29.211	52	31	41	41	S.	.01	Windy and cold, although south wind; rsin.
Fri. . . 16	29.465	29.137	54	38	43	41	S.E.	.20	Lightly overcast; cloudy; clear; rain at night.
Sat. . . 17	29.229	29.111	53	30	44	41½	S.	.04	Rain; heavy clouds; clear; rain.
Mean. .	29.615	29.440	49.14	28.43	42.00	40.93	....	0.25	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

GAME BANTAMS.

I HAVE carefully read the various letters which have appeared in the Journal on this subject, and although late in the field should like to have my say also, which shall not occupy much of your space.

I was a breeder of Black Red Game Bantams thirty years ago, long before poultry shows were thought of, having a stock derived from birds of the late Duchess of Rutland's, of happy memory; and although these were not equal to the best birds exhibited at our shows, they possessed, however, all the characteristics of the noble Game fowl. I am still a breeder of the despised "pigmys," and do most earnestly aver that so far from being easy to breed, they are the most difficult of all the varieties which I have tried (and their name is legion). A letter from a friend, who has bred these birds for fifteen years, now lies before me, in which he states that his opinion fully coincides with my own, and that the new axiom which Mr. Crosland has put forth—viz., "To breed good birds you must breed in-and-in for generation after generation, until *avium avorum nunciantur*, without infusing fresh blood, is a most absurd doctrine for any experienced breeder to promulgate. I have letters from numerous other breeders to the same effect, that from pursuing such a course the birds "throw back," "degenerate in every way," "become weak in constitution," and "in due course worthless."

My stock, derived from two of the most renowned breeders and successful exhibitors of these birds, at the beginning of last season consisted of six hens and one cock. The latter had been exhibited many times, and never without winning, at all the principal shows. The former were extremely good, and free from silver earlobes. From these I raised upwards of one hundred chickens, about half of each sex. The pullets, with two exceptions, had silver earlobes, and of the cockerels there were not more than three which would, by really skilful judges, be termed "first-class." Indeed, the largest exhibitor of Game and other breeds has given it as his opinion, that "only three first-class Game cockerels are 'out' this season," and this, too, from all the myriads, I had almost said, of the "miniatures" produced by the "pigmy" loving and enthusiastic maniacs who sent ninety and nine pens to Bingley Hall, to the disgust of our old friend the "WILTSHIRE RECTOR."—ALIGUIS.

P.S.—I have just seen Mr. Newsome's letter, and am surprised to find that he has not won a single prize for Game Bantams at any of our three largest shows during the season which has just closed, with the exception of the third prize at Rochdale, for a pen of Black Game Bantams. He did not exhibit at Birmingham. At Manchester he showed four pens and did not obtain a single notice! and at Rochdale he abstained from exhibiting in the Black Red Game Bantam class. Do not these facts speak volumes! Mr. Noble's name does not appear in the catalogues of any of the above-named shows. After reading carefully Mr. Newsome's letter, I am still more

confirmed in my own opinion, that it is by no means an easy matter to breed these "easy-to-breed first-class Game Bantams."

HAVING perused the letter from "CHESHIRE PILE," I shall be glad if you will allow me to make a few remarks on that portion of it referring to my financial account of Game Bantam breeding. In the first place, I have sold £180 worth, and all my own strain, which I have had for years. I have also bought largely for applicants, or, I should say, I have been commissioned to buy birds such as I could recommend, though at a lower price than my own were sold at. I have bought upwards of £50 worth in this manner, and no doubt from as good yards as my own. I know breeders that I can depend upon, from whom I would take all they had at a guinea each, and when needful these are the yards from which I can be supplied; and if "CHESHIRE PILE" does not know where the birds are to be found, and will hand me his address, I will supply him with a pen up to the "Standard of Excellence," though the price might be rather too high according to his ideas. There are, however, parties who give large prices, who, perhaps, have as good fowls as myself, and who do not scruple to give £10 or £15 for a single cock. I have sold eight Game Bantams for £50 15s., and all to first-class men who do not mind giving a first-class price when they can depend on good blood, to make an equal cross with their own.

Can "CHESHIRE PILE" account for the fact that certain breeders of Game Bantams invariably succeed in prize-taking? Can it be that only a portion out of a great many fanciers are well acquainted with breeding, and who are also able to judge a good bird on seeing one? If so, judging from his remarks, I fear he forms one of the majority of unsuccessful breeders.

I should like to give "CHESHIRE PILE" a few particulars of my private view of Bingley Hall in 1865. I first went to look over the Game and Game Bantam classes, and on finding my success in Game was satisfactory, I passed on to the Game Bantams, catalogue in hand, and again had the satisfaction of finding that in these classes I had also been successful; and on looking through the single Game Bantam cock classes, I noticed three first-class birds marked as follows:—£2 5s., £3 3s., and £5 5s. I was rather astonished on fully inspecting them, that according to my own judgment the best bird was marked at the lowest figure; and as the whole three belonged to one owner, I certainly thought he had made a mistake in penning his birds. However, I took care to claim the lowest-priced bird at the proper time, and in the course of the day I had £5 offered for him from several first-class fanciers. All their propositions I, however, declined; and although I had a first-class bird at home, I showed this bird in the single cock class at Manchester, and took the second prize, and there I sold him for £10. I may also remark that the same bird has taken a first prize at Rochdale. Now, I am of the firm opinion that the above were all the property of "P.," who, I must acknowledge, made a decided hit in his communication inserted in your Journal of the 13th ult. He appears to have good judgment in breeding quantity; as to his judgment of quality I will leave it for your readers to decide upon, after perusing the foregoing statements respecting his lowest-priced cock at Bingley Hall.

After a great many years experience in Game Bantam breeding, I must endorse the "WILTSHIRE RECTOR'S" statement that they are easy to breed good; and as "GALLUS," "P.," "W. F. E.," and "CHESHIRE PILE," appear to be of the opposite opinion, I would advise them without delay to purchase the "Standard of Excellence" and digest the contents thereof, and it is possible that their present opinions may be altered.—JOHN CROSLAND, JUN.

THE FINALE.

The time having now arrived when, in the judgment of the Editors, this passage of pens should cease (verily a large amount of type has been used on a very small subject; it has been the reverse of the mountain bringing forth the mouse; and the little birds, could they know it, would be more fussy than ever), it becomes me to say a few concluding words, as a remark of mine originated this rush to pens, to my own great surprise and infinite amusement.

I stated that Game Bantams were "easy to breed." The discussion has been conducted by two parties: one which knows how to breed them good, the other which does not yet know how. It is simply a case of knowing how to do it, and of not knowing how to do it. It has been clearly proved that Game Bantams are easy to breed good by those who thoroughly understand the breeding of them. My opponents have been "GALLUS," "P.," and "A CHESHIRE PILE," also "W. F. E.," who wrote civilly, though differing from me in opinion. On my side was the greatest breeder of these fowls, Mr. J. Crossland, who stated that "he quite agreed with me," and that "he breeds every year a large number of first-class birds." It was not wise for any one to speak in opposition to Mr. Crossland, for he breeds the best birds in the kingdom, for the simple reason that he best knows how to do it. Then came my friend "WEST YORKSHIREMAN," who showed that he had gradually learnt how to do it; his letter is very valuable; then, lastly, Mr. Newsome's long and able communication (I hope some time or other to have the pleasure of meeting him), and he, too, has learnt how to do it. I am extremely obliged to those who have written on my side and proved the truth of what I stated. I have not the least personal knowledge of any of them, and not only do I thank them, but, as a gentleman, I feel particularly glad that they all wrote in such a gentlemanly manner. I think the results of this discussion will be, that possibly fewer Game Bantams will be shown, but most probably they will be better birds. Also the needless multiplication of crosses will cease, and good strains will be kept to, while bad ones will be destroyed. It is wonderful how true the little creatures come if they be of a thoroughly good strain. In conclusion, I would remark that I shall in the future, as in the past, state just what I think, quite independently of any class interest, but keep the interest of poultry on the whole always before me. Thanking my friends, I also hope my opponents will cease to stumble on the road to success, and will learn how to breed their pets to their own content and the approval of the judges.—WILTSHIRE RECTOR.

[We think this controversy may now cease, for a quire of letters would not convince any one of the combatants that his opponents are right; and the same amount of letters will elicit no other information for our readers, than that some poultry fanciers find it difficult to breed very superior Game Bantams, whilst others have experienced no such difficulty. We know the exhibited birds of all the controversialists, and we can testify that we never saw among them one inferior specimen.—EDS.]

VULTURE HOCKS—WHITE RUMPS— ERRONEOUS NAMES.

I PERCEIVE there has been some discussion in the Journal as to the vulture hocks in Shanghaes or Cochins, and I quite agree with those of your correspondents who advocate vulture hocks in Cochins. In my opinion they are quite in keeping with the general form of the birds, and really belong to them as much as feathered legs, of which, indeed, I consider them a part; and, consequently, I admire them.

As to Blue Dragons having white rumps, I consider it quite natural and as consistent for blue Pigeons to have white rumps as for them to have black bars across the wings. It is part and parcel of the true blue colour. Some fanciers, I am aware, object to any colour like that of the wild bird or natural colour; such, of course, will discard blue altogether on that account,

and will prefer any variation from the true blue, or original colour, which, I think, is rather inconsistent; if blue, let us have the true blue.

I am glad to notice that one of your correspondents objects to the incorrect names applied to fowls. I have written much on the subject, but generally met with more opposition than encouragement. He is quite right in what he says, it is a folly to call poultry by false names. The fowl that came from Ham-burgh was a crested bird, still much bred on the continent, particularly in Belgium, and now known there as "Brabanter." Polands and Polish should be called Crested Fowls. Cochins and Brahmas are properly Shanghaes, or Chinese. The Bebe, or Black East Indian Ducks, have nothing to do with Buenos Ayres or Labrador; and the Musk Ducks come from Brazil, not from Muscovy.—B. P. BRENT.

RAILWAY CHARGES.

SINCE the first list of those willing to sign the requisition to the railway authorities, I have received communications from others, as the subjoined list will show. There are many who have not taken any notice of my circular, but I have only received one direct refusal, a name we shall miss here, though very rarely missing in the prize list. As the refusal gave no reasons, I could not, as in one or two instances I have done, show the necessity of helping, but I regret the omission, and can only hope that before the requisitions are presented, exhibitors may yet be persuaded to sign.

From the many communications I have received, I am disposed to think that a uniform rate, considerably lower than for other parcels, both ways, would meet the general wishes of exhibitors more than returning specimens FREE. I should be very glad to receive the names of any exhibitors who would form part of the deputation.

The following are the additional names that I have received:

Hon. H. W. Fitzwilliam.
J. Holme.
E. Jones, 10s. 6d.
J. H. Pickles, 10s. 6d. paid.
National Poultry Co., 10s. 6d.
J. Wood, 10s. 6d.
H. Lingwood, 10s. 6d. paid.
E. Tudman, 10s. 6d. paid.
John Nelson, 10s. 6d. paid.
J. Cattell, 10s. paid.
H. Bates.
John Poole.
Elijah Smith.
J. Fletcher, 10s. 6d.

Mrs. D. Haig, 10s. 6d.
A. Heath, 5s. paid.
John Pares, 10s. 6d. paid.
A. Worthington, 10s. 6d. paid.
G. S. Sainsbury.
Rev. G. Hustler, 10s. 6d.
Rev. J. de L. Simmonds.
H. Mapplebeck, 10s. 6d. paid.
E. Cambridge, 10s. 6d.
C. Sidgwick, 10s. 6d. paid.
G. K. Geyelin, 10s. 6d. paid.
J. White, 10s. 6d. paid.
F. B. Walker, 10s. paid.

—JOSEPH HINTON (Y. B. A. Z.), *Hinton, near Bath.*

SOUTHERN POULTRY SHOWS.

I AM truly glad that my words on this subject have called forth "BRAHMA POOTRA'S" letter. I have also received a note announcing that there will be a poultry show at New Shoreham, Sussex, next autumn, to be called "The South of England Poultry Show." This is well. "May I be there to see?" Another letter has reached me, naming Bristol as a most suitable place for a show. Some widely-known first-class poultry fanciers reside in and near that city, and Pigeon-lovers, especially of the flying varieties, abound; some pens of these latter, stating the distances they have flown, would be an acquisition.

I certainly think there ought to be several efforts made to establish shows in the south. Some of our greatest and most successful fanciers, whose names will at once occur to the minds of all readers of this Journal, live in the south of England, or, at any rate, not in the north. An outlay of many pounds is expended by them in sending to northern shows; surely, then, it would only be fair to them that there should be shows nearer home, and doubtless northern fanciers would send their birds south. I would say, There should be no show unless there is a fairly-good population, and a railway station near. Why not engraft a show upon a horticultural exhibition, or a ploughing match, or a meeting of a county friendly society or club, or a fair. Wherever numbers are drawn together for any purpose, there might be a poultry show, and, I will venture to predict, the tent will be full.

"EGOMET" speaks an encouraging word when he says, "Our Show (not in the north), was a surprise, for we had not only a balance sheet, but actually a balance in hand—a nice little nest-egg for this year." By the way, I like "EGOMET," he has

a pleasant sense of humour, and writes like a gentleman. In all controversies it would be well for all to remember, as apparently he does, George Herbert's words—

"Fierceness makes '
Error a fault, and Truth discourtesy."

In passing, I must assure "EGOMET" my not continuing my "Notes on Pigeons" has not willingly been delayed by me. My good friends at 171, Fleet Street, wished me to go to Birmingham, and writing my "First Impressions of Bingley Hall" took up my time. Then they wished me to write for the Christmas Number, and writing three papers for it took up my time. Then came "GALLUS" and "P.," with their hackles up and spurs on, and dispatching them took up a little of my time. Then came my visit to Linton Park, and describing it took up my time. However, I hope to continue the Pigeon subject shortly, and have been smelling the old books with gusto this very day. Mine is, from many causes, no life of leisure, so let "EGOMET" rest assured I have been a "Ramblor" only per force, and am never an "Idler."—WILTSHIRE RECTOR.

P.S.—A letter of inquiry about fowls has just come to hand from a fair lady, and another from "AN AMATEUR." Like Banquo's ghosts they multiply, I think I must send some on to "EGOMET," to take a gentle revenge.—W. R.

VULTURE HOCKS, &c.

I HAVE been waiting, "like Patience on a monument," for an answer from the "able judge" who considers vulture hocks a recent introduction—waiting, in fact, for a painting in words of what a Cochin or Brahma leg (for in this they are identical), ought to be. I asked for it, and after so sweeping a denunciation of the vulture hock and all approach to it, I feel that we breeders, who are not converts to the "recent" idea, have some right to an answer to my query.

I believe I am the oldest exhibitor of Brahmas, I will not be certain on this point, but I believe I am correct, the first prize I ever gained for the first pen I ever exhibited having been taken at the old Gloucester Agricultural Society—the poultry portion, alas! now defunct—in November, 1854, nearly twelve years ago; and as I look up the date in the old "Poultry Chronicle," I am filled with regret; for the same Number of that periodical contained notices of Brighton, Taunton, Salisbury, and Gloucester. Of these four southern shows, Brighton only remains to us! Well may "WILTSHIRE RECTOR" have a grievance; but what of us exhibitors who have to send so much farther in these days of light (?) expenses for railway carriage!

My pen is on the wing, whereas I was intending to speak of the leg; so let me return to it. In all seriousness I again ask for the "able judge's" definition of a Brahma leg. Before he give it, let me refer him to No. 3 of the new edition of the "Poultry Book." There he will see drawings of Light and Dark Brahmas of 1852 and 1853, copies from the *Illustrated London News* of that time. The hock feathers project quite the sixteenth of an inch, equivalent to an inch in the actual bird, but in the Dark birds it is considerably more. Can he then say that the projecting hock is a recent introduction? I hazard the opinion that the feathering down the outer part of the middle toe is more recent, and that this feathering, which is a great improvement, and, I believe, is now sought after, has come from the stiff-feathered-hocked birds; if I am correct, we owe this improvement to the vulture hock. I fear we shall lose that and the projecting feathering below the hock if we are forced to breed naked-hocked birds to suit the fancies of judges. I believe this outcry against a moderate amount of hock-feathers in the Cochin and Brahma is certain to injure the breeds. I have too sincere an admiration for my favourite breed to see them docked of any beauties and remain silent. For myself, whether successful or not, I shall endeavour to retain a moderate amount of hock-feathers, believing that this is the natural condition of the breed, and convinced that in any case it is a very great addition to their beauty.—Y. B. A. Z.

MINGLING OF STRAINS—DRAGON PIGEONS.

THE "WILTSHIRE RECTOR," in the last Number of "our Journal," says, "As to crossing strains, I know three of the first breeders, if not the three very first breeders, respectively of Spanish, Dorkings, and Light Brahmas. I put this question to each of them, 'How often do you cross your strains?' The same answer came from each—'I dare not do it; when I have

done so I have obtained worse birds, or only my own back again.'" Will "WILTSHIRE RECTOR" kindly explain this? Do these eminent breeders breed in and in? or do they keep a number of yards and cross one with the other? or how do they prevent their breeds from deteriorating? As a Dorking and Brahma fancier I shall be very glad to have "WILTSHIRE RECTOR's" advice as to crossing.

As a Pigeon fancier I wish to say a few words on the Dragon controversy. I have lately purchased a splendid pair of Dragons (Blue), but they have white rumps. So had the first-prize Birmingham birds. Now, are white rumps really a defect or are they not? Mr. Percivall says they are, and ought to disqualify for prize-taking. On the other hand, "A DRAGON BREEDER" says the best birds as a rule have white rumps. Must we take Mr. Percivall's word for law? If Mr. Hewitt or Mr. Esquilant would give their opinion on the subject in your columns I think they would confer a great benefit on all Dragon fanciers, as their opinion would carry great weight. Mr. Brent ignores Dragons in his "Pigeon Book."

May I suggest that the Poultry Club would be doing good service to Pigeon fanciers by issuing a "Standard of Excellence in Pigeons" on the same plan as their valuable "Standard" in poultry?—AN AMATEUR.

["AN AMATEUR" is quite correct in his surmise that the three yards I alluded to are very extensive, and their owners, I believe, avoid as much as possible breeding from very near relations. When a fancier has arrived at the top of the tree it is manifestly impossible to get higher, and hard work to maintain his pre-eminence; but when one is on a lower branch it should be his object to rise each year higher and higher; and it is encouraging to beginners to know, as I know, that some of our very first fanciers exhibited for a long time without getting a single prize. More, I would say the gradual rising in prize-taking is owing partly, in breeds dependant upon weight for success, to the crossing a strain with a better—i. e., larger breed. So doing with judgment, putting few hens to a walk, hatching early, and feeding very liberally, will enable "AN AMATEUR" to improve his Dorkings and Brahmas. This gradual advance forms one of the excitements and chief pleasures of poultry-keeping. By the way, let "AN AMATEUR" be careful and choose his best birds each year for stock.

In regard to the Dragon controversy my view is this. As white-rumped birds have recently taken first prize at Birmingham, that kind of feathering cannot amount to a disqualification. But supposing there were two pens of equal beauty in all points, but one pen white-rumped and the other not, I own I should incline to the opinion that the latter, as being the rarer, should have the prize. I have seen Mr. Percivall's birds, and think them extremely beautiful in colour.—WILTSHIRE RECTOR.]

DRAGON PIGEONS.

IN the Number for the 27th ult. I find an answer to my letter of the 6th of that month from Mr. Jones Percivall, of Peckham Rye, in which that gentleman says he is at a loss to understand how I should come to the conclusion that his first correspondence upon the subject came from Birmingham. I need only say, I found no difficulty in ascertaining the address of the supposed writer, when the foot of the letter furnished me with his name. Like their birds, the names of these gentlemen resemble each other so closely, that, to the fancy, I believe they are looked upon as synonymous.

Mr. Percivall next presumes that I thanked him for telling us what a good Dragon should be. If he refers to my letter again, he will find I gave him credit for trying to teach us what they should *not* be. I was in hopes, when he came calmly to reflect upon the mistake he had made, and the mischief he might do, he would have seen the folly of pronouncing, upon his own authority, white-rumped Dragons as worthless; as also those of other varieties, which would necessarily follow the same fate, and which I calculate would number about three-fourths of the Blue Pigeons in existence; and yet Mr. Percivall flatters himself he is thanked by me for committing such an error! He has made himself notorious amongst the fanciers of the midland counties for the peculiar opinions he entertains of Dragons—opinions at variance with the ideas of competent judges whose decisions I have sought and obtained.

Of the numbers of white-rumped Pigeons, which Mr. Percivall says may be bought for 1s. 6d. or 2s. each, I have no doubt, but not Dragons. If he had merely pronounced the blue-rumped birds as in his opinion better than the others, giving at

the same time some reasons for so doing, instead of declaring all others worthless, a notion so preposterous that it cannot be allowed to go unnoticed, his letter might have passed without comment, and he would not have thus laid himself open to censure. I have closely scrutinised many birds of each sort, and have given my reasons for upholding the white-rumped ones. I have found that the blue-rumped ones are generally ticked with small black spots upon the top portion of the wing-coverts, and as often have amongst those ticks one or two half-black feathers, which look as though a third bar were making its appearance. The latter sort resemble the Blue Fantail in colour, which is always of a more sombre, subdued tone, and lacks that brilliancy which a good Dragon should possess.

Mr. Percivall makes bad worse by pronouncing the same judgment upon Owls. He has avoided answering the question with regard to Powters. Rants and Antweeps, he tells us, rank so low in the estimation of the fancier, that it is a matter of indifference whether they be white-rumped or not. I beg to state that it is no more a matter of indifference in these classes than in Dragons or Owls, as they have each much to recommend them, and are worthy of more notice than Mr. Percivall is willing to allow.

Mr. Percivall says he is pleased that the Dragons he exhibited at Birmingham claimed my special admiration. This they certainly did; but it is not consistent in him to value that expression of opinion, when, in the former part of his letter, he says he cannot help thinking I am one of those who do not know what a good Dragon should be.

The last sentence of his letter needs but little comment from me, as he has admitted the error in matching the Archangels, and tells of his misfortune in losing one just before the Show, leaving him a stock of two odd birds to select his pair from, with no alternative but either to compromise his judgment or leave a vacant pen. He, therefore, chose the least loss of the two, and sent the birds for competition.

I hope my remarks may have the effect of convincing those interested that Mr. Percivall is wrong, and that he did not properly deliberate upon the wisdom of allowing to be set in type for public criticism views not rightly matured.—A DRAGON BREEDER.

COMPARATIVE LONGEVITY OF THE LIGURIAN AND BLACK BEE.

I HAVE been much interested by the description given by Mr. W. G. Malin, in page 212, of his experience of bee-keeping in the city of Philadelphia, and hope that the communications of that gentleman and Mr. Langstroth may prove the harbingers of a continuous free interchange of ideas through the pages of "our Journal," which cannot but tend to the advantage of apiarians on both sides of the Atlantic.

It is, therefore, in no captious spirit that I venture to point out an error into which Mr. Malin has fallen: with regard to the comparative longevity of the Italian and the common bee, the fact being that there is no appreciable difference in this respect between the two races; and however solicitous I may be for the good name of the elegant and prolific variety which I have taken so active a part in introducing and disseminating in this country, I should be very sorry to permit it for one moment to be supposed that any superiority was claimed for the Ligurians to which they were not fairly entitled.

Judging from my own experience, I should say that Mr. Malin's mistake has arisen in this way:—After the first Italian queen had been introduced and favourably received, and had commenced egg-laying, she was probably deposed and murdered by her new subjects, who then raised a young queen from her brood, which, being impregnated by a common drone, bred a mixed race of black and Ligurian bees, the latter gradually diminishing in numbers as the progeny of the purer Italian queen died off. From their ultimately remaining in so small a minority as about one in thirty, I should be inclined to suspect the purity of the original Italian queen, whose hybridised daughter, being fertilised by a common drone, would in that case breed but few Ligurian workers.

I offer the above as the most probable explanation of the circumstances related by Mr. Malin, because I have known Italian queens, which were apparently at first well received, deposed and slain after they had commenced egg-laying, royal cells being at once constructed and young queens reared from the brood left behind by the murdered sovereign; but whether this be or be not the true explanation, I have ample experience

to justify me in declaring that there is in reality no distinguishable difference in the longevity of the Ligurian and the black bee.—A DEVONSHIRE BEE-KEEPER.

WOODBURY HIVES.

IN your Journal of May 31, 1864, we are told, "the top, bottom, and sides of each frame should be three-eighths of an inch from the crown and floor-boards, as well as from the sides of the box." But if the space above the bars be three-eighths of an inch, the bar itself three-eighths of an inch, inside measure of frame $7\frac{1}{2}$ inches, the thickness of the bottom of the frame five-sixteenths of an inch, and the space between the frame and the floor-board be three-eighths of an inch—total, $8\frac{1}{16}$ inches—I want to know how and where the remaining five-sixteenths are to be disposed of, "so that these dimensions may be rigidly adhered to."—EDWD. FAIRBROTHER.

[The reason of my frames being about a quarter of an inch shallower than nine-inch boxes would admit of is, that the latter are usually made out of nine-inch planks, which will in the first place seldom finish the full width, and generally shrink an eighth of an inch more under a summer's sun, whilst it matters little in practice whether the clear space under the frames be three-eighths or five-eighths of an inch. If you refer to my article you will find that it is the dimensions of the bars only which are required to be "rigidly adhered to," slight variations in other respects being of minor importance.—A DEVONSHIRE BEE-KEEPER.]

THE SEASONABLE TURKEY.

BIRD of two meats—the brown and white—

Which like the dual Niles unite

And in a single body run,

Of tints diverse, in substance one—

Hail to thy bosom broad and puffed!

Plump as a maiden's cotton-stuffed,

Hail to thy drumsticks, dainties fine,

That, served as "devils," seem divine,

(And mind us of had Franksish men

Browned to good purpose in Cayenne.)

Hail to thy side bones!—rich morceaux—

And thy ecclesiastic nose,

Which to the laws of order blind,

Nature has queerly placed behind.

Yet scoffers vow thy fitness see

In nose of bishop following thee,

And hint that ever on a priest

The organ points towards savory feast,

And as the shark astern, at sea

Trackst he doomed ship, still follows thee!

Metinks I see a dish borne in

O'reanopied with shining tin:

From 'neath that dome a vapour rare

Curls through the hospitable air.

Presto! up goes the burnished lid,

And lo, the bird its concave hid!

I see thee, browed from crest to tail,

Bird of two meats, all hail! all hail!

Through thy round breast the keen steel glides,

Rich juices irrigate thy sides—

"Dressing," to give the slices zest,

Rolls from thy deep protuberant chest;

Then tunneling in search of "eates,"

The spoon thy "innards" excavates,

And forth, as from a darksome mine,

Bring treasures for which gods might pine.

Bird of the Banquet! what to thee

Are all the birds of melody?

Thy "merry-thought" far more I love

Than merriest music of the grove.

And in thy "gobble," deep and clear,

The *gourmand's* shibboleth I hear!

Of all earth's dainties there is none

Like thee, to thank the Lord upon.—(U. S.)

PARTRIDGES AND PHEASANTS.—A hen Partridge is sitting (March 9) at Lulworth, Dorsetshire, on a nest of eggs. She has been sitting more than a week. Silver Pheasants are showing for laying, and there is every indication of their doing so shortly.

HOW WE INTRODUCED ITALIAN BEES WITHOUT LOSING THEM.

1. We opened our hives to remove the black queens at times when there were few bees flying—say early in the morning. The consequence was, robbers did not "pitch in generally," and we were not troubled with them. If honey forage was abundant this precaution was unnecessary.

2. If robbers did attempt to trouble us at all, we removed the open hive into the house or somewhere beyond the reach of the pests, and took out the black queen at our leisure.

3. We always caged the Italian queen and placed the cage between two ranges of comb, which contained an abundance of honey, and left her caged there two or three days, then liberated her cautiously.

4. If we made an artificial swarm for the new queen, we did it while the bees were flying freely. We did not set the hive, containing a scant body guard and honey, where it would be a temptation to robbers; but set it on the stand of one of the most populous colonies in the apiary, removing the hive of the populous colony to a new stand considerably distant. The consequence was that the workers returning from the fields by hundreds, filled with honey, finding their home removed, and in its place a new hive, new combs, and new queen, would soon accept the whole. But, as a precaution, the queen was caged, and the entrance contracted that it might be easily guarded.—**W. C. CONDIT.**—(Prairie Farmer.)

OUR LETTER BOX.

MANDARIN DUCKS (K. D. T.).—The Ducks with raised feathers on their wings are Mandarin Ducks. We do not know whether they are eaten in China, but as they are generally worth £7 or £8 per pair, we think it will be some time before any one is qualified to give an opinion of their table qualities in this country.

JUDGES AND JUDGING IN SCOTLAND.—We have received several letters animadverting upon the communication entitled as above and signed "JUSTICIA." Every one of those letters denies the correctness of "JUSTICIA's" complaints. It is probable that they were written under the excitement of disappointment; but they have called attention to the subject, and, as the letters before us state that the judging at Paisley, Jedburgh, Kelso, and other places gave general satisfaction, there is no need for fearing that "JUSTICIA's" comments will be detrimental to the Scottish poultry show.

POULTRY-KEEPING (Annie).—I will do my best to reply to my fair inquirer. First, I would advise her to send seven stamps to the office of "our Journal," and beg that a copy of "Poultry for the Many" may be sent to her; then let her master its contents. I would recommend her to obtain a sitting of Black Bantam eggs from Rev. G. W. St. John, of Woodstock; if he has none, I dare say Mr. Cambridge, of Bristol, would sell her some. "ANNIE" should look out for a broody hen, taking care that she has nothing of the Spanish or Hamburg breed in her. A common half-bred Bantam would be the best. The hen would sit in any quiet corner of an out-house, and may be shut in the whole twenty-one days. For particulars of attention to sitting hen, management of chickens, &c., see "Poultry for the Many." The reason I recommend a sitting of eggs is that there is a great charm in rearing chickens, and in watching their habits and dispositions. Then, too, fowls seem so thoroughly one's own, having had them from the first. Black Bantams lay very early. I have had them lay when twenty weeks old. They, if pullets, are good winter layers, and their eggs, especially in the spring, are larger than those of any Bantams I ever kept. But for the trouble "ANNIE" might have with her neighbours I should, as she has a paddock, have recommended Hamburgs, any of the four varieties, though I incline to the Silver for the country. At the end of the season let "ANNIE" save her best cockerel and all the pullets. I am sure she will never regret becoming a poultry fancier, and I heartily wish her all success.—**WILTSHIRE RECTOR.**

FOOD FOR FOWLS (M. W. C.).—The sweepings of the corn market are usually too fattening. Wheat, peas, &c., are too much so. You will see what we say to-day to another correspondent. Not having a single fact on which to found an opinion, we cannot say why your hens do not lay. If more than a year old, that may be the reason; pullets are more prolific layers than old hens.

BUFF COCHIN-CHINAS (C. D.).—Buff Cochins have qualities that will always make them popular. Many cocks of this breed are bay; but the proper colour is a golden. This, like most correct things, is difficult to attain, and other colours have become so common as almost to form a rule.

GROATS FOR CHICKENS (A. B. C.).—Groats are merely oats, kiln-dried, and the outer coat of the seed removed.

BRAMA PODTRAS (Inquirer).—Brahmas are better table fowls than Cochins. They, in common with other fowls, should be killed at between four and six months, according to season of the year. They are eatable after that age; but they are apt to be strong in flavour. The Dorking is not crossed with any breed. As soon as it is crossed it ceases to be a Dorking.

CHICKEN HATCHING (E. F. G.).—Chickens usually come out of the shell at the end of twenty-one days; but we have known their appearance delayed until the twenty-third day, but the chickens were weak and grew very slowly. From fresh eggs the chicks are usually all out by the morning of the twenty-second day; the strongest get out first. Remove the empty shells and added eggs, but leave the chickens in the nest for one whole day, feeding the hen and supplying her with water, but give nothing to the chickens; they only require warmth during the first twenty-four hours after hatching.

HATCHING ONE EGG PER DAY (E. B.).—We suppose by this phrase was meant that the incubator will hold twenty-one eggs, and that is the number of days required for incubation.

WINGS OF FOWLS (Ignoramus).—The wing-coverts are the feathers that overlap and almost hide them, especially at the shoulder and at the extremities, so that little of the wing is exposed, and that only the middle.

FLOOR OF POULTRY-HOUSE (A New Subscriber).—Either asphalt, bricks, or any other hard flooring, is very injurious to poultry. It bruises their feet and retains wet. Cover the floor 3 inches deep with sand, and rake off the dung daily. Or, a good plan is to have dry earth, and to dig in the dung every third day, for the earth deodorises it, and then the earth may be removed at the end of three months, and used as a manure. Fresh dry earth to be put into the hen-house. The above answer will apply to the query of "A SCRIBER." Sand to be raked only, or loose earth to be frequently dug and changed, are the best flooring.

MATERIALS FOR EGG-SHELLS (Old Cock).—The best supply for laying hens is a heap of bricklayers' limy rubbish. Oyster-shells burned in the fire until they can be easily pounded, are also efficient in supplying calcareous matter for the formation of the egg-shells.

BUCKWHEAT (Brahma).—It is a common field crop in some counties. It is also known as Brank. Whoever told you that it is Indian corn did not know what he was talking about. A little is not a bad food for fowls, but there is nothing better than two daily feeds of barley meal, mixed with mashed potatoes, for soft food, and crushed oats or crushed barley once daily. We never use mixtures the composition of which we do not know.

FOWLS IN SMALL ENCLOSURE (Amateur).—The number of fowls you can keep in the space you name, 20 feet by 10, must depend much on the breed you select. Of Spanish, Brahmas, or Cochins, you may keep two cocks and ten hens. They will require but a small house, say 5 feet of the 20 feet in length, and the whole height of 7 feet. The door, 24 inches wide, to be in one corner; the perches at the other end 2 feet from the ground; three laying-boxes in front of the door; a good large window in the house.

TURKEYS' EGGS BY RAILWAY (P.).—The eggs will travel very well if packed in moss, and there is little doubt of their hatching if they are well managed.

MARKING CHICKENS (Château Vallon).—Adult birds are marked with a ring of brass or iron wire round the leg. That, however, is a disqualification at a show, and must be removed before they are sent to one. A very efficient mark, but one that is not perceptible without handling the bird, is to mark the web of the wing with a hot iron, boring holes through it. This mark never wears out or fills up. Another plan is, to tie strong coloured thread in the web of the wing. This lasts a long time. None of these are perceptible, and, consequently, do not disqualify.

SILVER DORKINGS (Inquirer).—Silver-Greys belong to coloured Dorkings. The hen has robin breast, black and white-striped hackle, grey feathers with white shaft, light grey head. The cock has black breast and tail, light almost white hackle and saddle, metallic bar on the wing on white ground. Silver-Greys have long existed, but it is only of late years they have had separate classes. They are more bred in Scotland than anywhere else.

FRENCH FOWLS (F. Z.).—The Crève Coeurs were known and kept in England thirty years ago. The La Fleche and Houdan are a modern introduction. We believe the La Fleche and Crève Coeurs to be better fowls than the Houdan, and more likely to meet your requirements. None of the white-shelled eggs are as thick or as hard as the brown.

BEE-KEEPING (G. P.).—If you send five postage stamps with your address, ordering "Bee-keeping for the Many," you will have it sent free by post. It contains full directions.

FEEDING BEES (G. J., Birmingham).—Now is about the time for commencing spring feeding, and the latter end of April for putting on supers. We place no reliance whatever on the story of honey bees feeding on oil-cake.

HIVES FOR PROFITABLE BEE-KEEPING (A. B. C.).—We consider frame hives to be the best, if you can manage them. Should a swarm issue from a frame hive it is easy, after temporarily living it in a common straw hive, to look over the combs in the parent stock, cutting out every royal cell and destroying the young queen or queens if there be any. Having done this, the swarm may be returned by being knocked out on the top of the exposed frames, and will then probably either remain at home altogether, or be so long delayed as to complete the super. We prefer bars seven-eighths of an inch in width for all purposes. In order to Ligurianise your apiary you require a pure Ligurian stock to commence with, and should then proceed as advised by Mr. Woodbury in reply to "W. L." in page 61 of our eighth volume.

ALTERING A NUTT'S HIVE TO A WOODBURY HIVE (A New Beginner).—If you lower your set of Nutt's boxes to 9 inches, and enlarge the pavilion to 14 inches from front to back (all inside measure), it will accommodate eight Woodbury frames, and will form a useful hive without further alteration of the side boxes. In making a new hive we should prefer a pavilion 14 inches from front to back, by 13 inches wide, to accommodate nine frames, and side boxes 13 inches square, fixed with eight bars in each. Whilst altering the Nutt's hive the bees and their combs should be transferred to a Woodbury hive, whence they can be shifted into their former domicile when the alteration is completed. The middle of a fine day in April is the best time for performing the first of these operations. Stewarton hives are made of inch wood dovetailed together, and although painted on the outside, some additional protection is usually afforded them. "Bee-keeping for the Many" will be republished in a few days.

POULTRY MARKET.—MARCH 19.

Ora supply is getting less, and the demand increases. Prices have a tendency to rise.

	s. d.	s. d.		s. d.	s. d.				
Large Fowls	3	6	to 4	0	Guinea Fowls	2	6	to 3	0
Smaller do.	3	0	to 3	6	Partridges	0	0	to 0	0
Chickens	2	0	to 2	6	Hares	0	0	to 0	0
Goslings	7	6	to 8	0	Rabbits	1	4	to 1	5
Ducklings	4	0	to 4	6	Wild do.	0	8	to 0	9
Pheasants	0	0	to 0	0	Pigeons	0	8	to 0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	MARCH 27—APRIL 2, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. s.	
27	TU	<i>Cytisus racemosa</i> ,	54.0	34.6	44.3	13	49 af 5	22 af 6	46 2	3 4	11	5 30	86
28	W	<i>Dentzia gracilis</i> .	53.5	34.2	43.8	16	47 5	24 6	51 3	30 4	12	5 11	87
29	TH	<i>Cytisus filipee</i> .	53.8	33.6	43.7	12	45 5	25 6	56 4	55 4	13	4 53	88
30	F	GOOD FRIDAY.	53.7	34.7	44.2	17	42 5	27 6	0 6	19 5	14	4 34	89
31	S	<i>Acacia conferta</i> .	54.9	34.1	44.5	17	40 5	29 6	5 7	42 5	○	4 16	90
1	SUN	EASTER SUNDAY.	54.9	34.6	44.7	21	38 5	31 6	7 8	6 6	16	3 58	91
2	M	EASTER MONDAY.	55.8	35.8	45.8	21	36 5	32 6	9 9	31 6	17	3 39	92

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 54.3°; and its night temperature 34.5°. The greatest heat was 75°, on the 27th, 1830; and the lowest cold 16°, on the 1st, 1833. The greatest fall of rain was 1.19 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

TRANSPANTING LARGE SHRUBS AND TREES.



FEW years ago, when the removal of large trees was more fashionable than it is now, there was some contention amongst the machine makers as to whose apparatus was

best adapted for the work, and a very costly contrivance was exhibited before the late Prince Consort at Chiswick. This was stated to be perfect in its way, but we have heard very little of it since; its merits would seem to be purely mechanical, and its worth as a horticultural implement is questionable. Previous to that the machine of Mr. Barron, with some modification by other makers, was that mostly employed. The work that Mr. Barron had done with it was found to be satisfactory, and trees transplanted by its agency are met with in various parts of England. Previous to Mr. Barron's invention a machine invented by Sir Henry Stenart, of Allanton, was reported by that gentleman and others to have done good service, and contrivances of a like character were now and then met with about forty years ago.

The rage for transplanting large trees having in a great measure subsided, the use of transplanting-machines is, I believe, less common now than it was twenty years ago, although the number of valuable shrubs and trees planted has multiplied exceedingly since then. It is now only in special cases that large trees are transplanted, such as when changes taking place render their removal necessary, and often the success of the operation is not satisfactory; for it is not infrequently found that after the lapse of half a dozen years a better result would have been accomplished by planting small trees carefully, and encouraging their growth. Occasionally, it is true, the removal of a large shrub or tree will be attended with success, but the contrary is more frequently the case, and the plant operated on dies back for a year or two, and then commences to grow again, slowly if it is an old specimen and removed to a site not so good as its former one, but if to a better the improvement is rarely visible before the expiration of four or five years, perhaps more. Besides, it is only certain kinds of trees that will safely endure the ordeal of transplantation when old; and though it may be all very well to talk of making a place or feature perfect at once by planting large trees, it is better to wait and look at the condition of these large plants twelve months after planting before giving any decision as to their looking well; and, perhaps, a couple of years after that will elicit the admission, or rather confession, that it would have been better to have planted young trees. This is no solitary case, but one of frequent occurrence, and one more likely to happen in some parts of the kingdom than in others, for the very good reason that

certain districts being less favoured than others with rain at a time when newly-planted trees require it, the result is less satisfactory. There is so much difference in the capabilities of trees in respect to transplanting, as well as in climatic influences, that no definite rule can be laid down, unless it be that small plants are more likely to succeed than those which are large; and where the ground is suitable, there is every likelihood of the small subjects out-growing the larger ones in a few years, besides being from the first more healthy and vigorous—a matter often of as much importance as size in respect to appearance. The best results are often obtained when both plans are partially carried out at the same place, a large old specimen being transplanted along with others that are young and healthy, and it would in most cases be advisable, especially where shrubs are concerned, to plant some small specimens near the large: for if the latter do not succeed, the others may, and the object, therefore, will still be attained.

Inconvenient as the removal of large trees is, there are some which are more likely to die than succeed, however carefully the operation may be performed, while others are much more certain to grow. As a general rule deciduous trees or shrubs transplant better than evergreens, and amongst those that do well are such as have their roots nearest the surface. Deep-striking tap-rooted trees are not easy to transplant safely, and one of the worst that I know is the Evergreen Oak; this, even when in a small state, bears the operation badly, and to remove it when it had formed a large tree would, I expect, be very difficult indeed. Hollies that have stood a long time in one place are also not at all easy of transplantation, though they are not worse than Portugal Laurels and some other things; and it is somewhat strange that certain plants having a strong resemblance to each other, and belonging to the same genera, should differ very much in their adapting themselves to the change that transplanting gives them. The common and Irish Yew transplant very well, while *Taxodium sempervirens* is about one of the worst to deal with; *Cupressus Lawsoniana* transplants well, while *C. Lambertiana* is very uncertain. These cases I only allude to as the result of trials with small or moderate-sized plants, but I expect the difficulty will be increased when the specimens are larger. In general the family of *Thuja* transplant well, better than any Conifers with which I am acquainted, but others, of course, may equal them.

It need hardly be said that greater success attends the planting of large trees or shrubs when they have been transplanted two or three years before, or that some benefit is derived from preparing the plant to be removed by cutting its roots all round the year before; but this cannot always be done, as the determination to remove them may not, perhaps, have been formed until the moment it is to be carried into execution. In the latter case, the only consideration is to do the work as well as it can be done, and trust to the weather and other fortuitous circumstances for a good result. Plenty of labour and mechanical contrivance can erect a building of large size in a short time, but the same means, however well directed, cannot ensure

the successful planting of large trees, in spite of all the energy and abilities of the master mind. The removal of a large tree is after all only a mechanical operation, its growth afterwards is a natural one, and no amount of ingenuity can always ensure success. We are occasionally told that trees may be safely moved with a particular machine at all times of the year, and that they will prosper afterwards. I confess that I am myself very doubtful on this point. Some years ago I went to see some trees that had been so treated, and which were pointed out as an example of success, and I did not see a healthy one amongst them, although they had been established some six or seven years in their new abode. The operation, I have no doubt, was well performed, but something must be sacrificed, and there is, consequently, a loss for which compensation cannot easily be made. Some plants that will lift with a good ball, and whose roots are numerous and closely woven together, will remove with tolerable success, but even they suffer a little when the plant is large; while all naked long-rooted ones suffer sadly, and their success is often a doubtful affair. Nevertheless, as it may be deemed worth while to transplant a favourite specimen of large size, and as a costly machine for the purpose may not be at hand, a sort of useful carriage may be made with very little trouble, and the operation performed tolerably well. The mode is this:—

Having fixed on the tree or shrub to be removed, commence on two opposite sides at a proper distance from the collar so as to secure the extremities of the roots; separate these carefully from the soil, turn them upwards, and then tie them out of the way as the work proceeds. Continue this work until you approach so near the collar that the rest may be left intact as a ball; then dig downwards about 15 inches deeper than the bottom of the ball will be. Do this on both sides, and for a space of about 4 feet wide. This done, commence undermining the ball on both sides, throwing the material out of the way.

The carriage, which should be in readiness, is of very simple construction, in fact, merely a flat-boarded platform resting on wooden rollers, the ends of the rollers being shaped into a sort of axle fitting into holes prepared in the framework supporting the platform, but so low as to take up as little room as possible, in order to save unnecessary excavation to allow of the carriage being brought underneath the ball. It would, however, not be advisable to have the rollers less than 8 or 10 inches in diameter; and allowing an inch or so from the roller to the boards above for dirt, from 12 to 14 inches may be sufficient from the bottom of the roller to the top of the carriage. This carriage is intended to slip in underneath the ball of the tree as soon as the excavation, or rather undermining, is so far advanced as to allow it room.

The two sides of the ball at right angles to those excavated I take for granted have not been touched, and in general these are sufficient to bear the tree when the earth is hollowed out from beneath; and in undermining the ball take care to let the bottom be as flat and smooth as possible, in order that it may rest on the carriage over the whole of its surface. Should there be any roots or unevenness which will prevent this, make up the deficiencies after the carriage is put in by stuffing in some cushions of moss or litter, or it may be soil, only the latter is more difficult to insert.

The carriage being fixed properly underneath, and with its top just touching the bottom of the ball, you may then commence to cut away the two remaining sides of the ball, beginning at a proper distance to save the roots as before, doing both sides together, so that by the time you reach the sides that are cut the tree will settle itself on the carriage. A mat or two tied round the ball will complete the work so far, and some guide ropes should be attached to the top of the tree, to be held till the tree has been fairly drawn out of the hole, which will be more or less easy according to the weight and other circumstances. The tree being on the carriage, the next duty is to cut the ground to the latter, so as to form an easy incline, and to lay a couple of planks on the soft soil for the rollers to run on; then apply hand power in the shape of levers, pulleys and blocks, or some other power, and when it is seen that the whole will move, horses may be put to work; but if the distance to which the tree has to be removed is great, it is best to mount this carriage upon another having wheels, as a waggon without sides, or if with sides the bottom ought to be wide enough to take in the plant-carriage. The top of the tree being securely fixed by tying to the waggon, and the ball made as secure as possible by stuffing and tying, the plant may travel as many miles as you like.

In setting the plant in its future position the mode of pro-

ceeding is nearly the reverse of that already detailed, only this second part of the operation is sometimes more difficult than the first, for it is not always prudent to deepen the hole so much as to allow the full depth of the carriage below the ball, as the latter may accidentally drop into it and be too deep. Where, however, there is a triangle with ropes and blocks, they may be erected over the tree, and the rope fastened to the collar, that being previously well padded. By these means two or three men will bear a great part of the weight, while others are pulling out the carriage, some at the same time holding the ball to prevent its breaking, and, of course, as soon as the carriage is clear of it, let it drop, or rather settle into its place.

Sometimes it is advisable to have two or three loose boards on the top of the carriage before the ball is placed upon it, and these are of great service in sliding the tree off it, the boards themselves being sacrificed. Many better contrivances, however, will suggest themselves to the operator. I have seen a mat inserted underneath the ball, and the whole tied up like a huge pudding; but, in general, this can be dispensed with, and tolerably heavy plants may be lifted in the way indicated. Of course in filling up carefully laying out of the roots must be duly attended to, taking care not to allow them to be together, the whole being spread out as far as possible. Good soil of a suitable kind should then be supplied them. The result will, of course, be good or indifferent according to the character of the season, the adaptability of the tree for transplanting, and some other circumstances, for, be it remembered, I never yet saw a large plant moved without a check, and very seldom a small one. Although I have often enough heard such an assertion made, generally its true interpretation was, that the object operated upon did not suffer much; for, however carefully the work may be performed, and however perfect the tackle, injury must be done to the best roots the tree has, if it be a large one, and has been in its position long. If it be removed to better soil, and a more favourable situation, the tree may after a few years show more vigour and improvement than it would have done if left at its first abode; but this only proves that the situation is a better one, not that the operation of removal effected the improvement.

This paper having extended to a much greater length than I anticipated, I find I must leave the subject of removing shrubs and trees of smaller size to another opportunity, and as much greater success invariably follows the transplanting of small than of large trees, I would in most cases advise planters to be satisfied with such. To be able to point out a large tree that was transplanted without losing a leaf is certainly something to boast of; but it is well to wait and see what the condition of that tree is two years hence. I once heard a pushing builder assert the possibility of transplanting a deciduous tree of large size without losing a leaf, and in the middle of summer, and sure enough he did it, for the leaves were still on at Christmas, but it bore no more, and instances of this kind are not by any means uncommon.—J. ROBINSON.

STOPPING VINES IN POTS.

MR. D. THOMSON in his reply to "INQUIRER," in the Number of February 20th, and referring to the cutting down of the canes of pot Vines of the same year's growth as a good plan, adds that it is one which he for the future intends to adopt. Now, I have not grown pot Vines extensively, but I always laboured that my few should be good, so far as I could make them so. I tried different plans to secure my object, the best of which was somewhat similar to the system noticed by Mr. Thomson. When my Vines had fully expanded and matured a few fine leaves, I cut them down to the lowest good leaf, and after making a growth of 2 feet, I again stopped them, continuing the stopping at two-foot intervals until I had secured my length of cane. The shoots after each stopping pushed with increased strength, and the eyes below it became much more prominent. The result was, that the Vines so treated carried a better and more regular crop than by any other means which I practised.

My object in stopping was to obtain increased root-action, or in other words to bring a more abundant supply of food to a given point, a system which I had observed to increase the vigour of other plants. After three years' practice the Vines so treated were in every instance the best, and gave the most satisfactory returns.

Some time has elapsed since I practised the above plan. I was not then, nor am I now aware, that there is anything new

in the course; but this I know, that were I again required to grow pot Vines, I should follow the plan here stated.—
J. WRIGHT, *Gardener to the Hon. A. L. Melville.*

SOMETHING MORE ABOUT FRUIT TREE STOCKS.

Mr. Robson, I am quite sure, will allow one who has seen more than most people in fruit-tree culture to notice and correct some of his notions.

The "knifeman," I trust, belongs to a past age. In former days he was a man who employed a sharp knife and a blunt intellect. With the former he "cut back" trees year after year till they were pollarded stumps, and "whip-grafted" trees quickly and dexterously—an operation not requiring much nous. I well remember the old foreman of my grandfather, who was an active man in my youth. He could neither read nor write, yet he was reckoned a good "knifeman," and always boasted of his having grafted a thousand Apple trees per diem for many consecutive days, when a "quarter"—i. e., large piece of crab stocks, was operated upon. He had, he said, a tyer and two puggers—lads who clayed the grafts. This must be "sixty years since." The quarter contained 20,000 stocks, and such stocks as are rarely seen. They threw up shoots from the graft the first season from 5 to 7 feet in height.

The budding of the purple Cytisus on the common Laburnum has never to my knowledge been followed by any stain in the stock in England. The Purple Laburnum, as is well known, was originated in France by the live shield or plate of a bud of the purple Cytisus—the bud having died—staining apparently the common Laburnum in which it was inserted, and thus producing that odd variable tree, the so-called Purple Laburnum. What an imposing name! and what a number of guineas it drew out of the pockets of Englishmen! In the many, many thousands of Purple Beech annually grafted, I have never seen a shoot below the graft, either alive or dead, stained; the same with variegated Hollies and other variegated trees. The way to bring about this staining, if at all possible, is to prevent the graft putting forth leaves. This is easily done by rubbing off the young tender shoots as soon as they appear, so that the graft has a dormant life. The variegated Jasmine has a great tendency to stain the stock it is grafted on; and I think I have seen staining in some other shrub or shrubs, but it is very rare.

Roses budded on the Manetti Rose stock are not now planted deeply. Rose-growers who are at all worthy of the name had them so that the junction of the bud with the stock is within 2 inches of its roots: consequently deep planting is not required; 3 inches deep will do. The growth of Roses thus planted here is remarkable. I have now in sight from my window Rose pyramids, the last year's shoots of which are 9 feet in height. If Mr. Robson ever reads "our Journal," he would know "to whom was due the merit of first trying the Manetti stock for the Rose."

There is nothing new in employing Peach and Almond stocks for the Peach and Nectarine. It was common in France two hundred years ago; but even there they were used only in the dry hot provinces. They have never been common or popular in England, our climate being too cool and moist. The Peach stock is very unfit even for warmer climates than ours; for after a few years the disease called "chlorosis," or as the Americans call it, the "yellows," nearly always attacks the trees. Even trees in pots in orchard-houses in England do not escape this fatal malady. I have never seen it attack trees on Almond stocks, and I have recently told some American friends they should leave off budding their trees on Peach seedlings, and use Almond stocks. The yellows destroys annually thousands upon thousands of trees in the United States, yet I have not heard of the Almond stock being employed to counteract it. I fully believe that in the south of England, in dry, gravelly, or chalky soils, Peaches on Almond stocks would succeed, when those on Plum stocks invariably fail. The knowledge of such things as fruit-tree stocks seems to be but little thought of by men otherwise well up in horticulture. One day they will think differently when their inner knowledge comes—i. e., when they practise with their hands and their heads.

With regard to Mr. Robson's remarks on the Pear on Quince stocks, I can most promptly support what he says as to the comparatively small quantity of fruit borne by a Pear on the Quince stock, and that "there is no instance in which a Pear

so worked has produced anything like the quantity of fruit it has done when grown on a stock of its own kind; and in no case when I have seen it has it approached the majestic growth of the Pear tree when on a stock better suited to its requirements. I have in no instance seen a Quince tree [I suppose Mr. Robson means a Pear tree grafted on the Quince], yield more than one-fourth of what the Pear will do, and this is a wide difference." This is all most true. I have seen in Worcestershire some most majestic Pear trees. I remember one most particularly in the vale of Evesham, which one fine day in September seemed a golden tree, so thickly was it studded with fruit, computed at 100 bushels. The Pears were of a brilliant clear yellow, and most beautiful. Now this was really a "majestic tree." On inquiry I found it was called the Cheat-boy Pear, on account of its often enticing strange boys passing along the roads to pluck the fruit growing on trees, as is usual there, in the hedgerows, and then finding their jaws glued together by its powerful astringency. I have seen other majestic Pear trees; but with the exception of the Aston Town and Autumn Bergamot, of which there is a tree here still alive three hundred years old, I have never tasted a fine Pear from a majestic tree. I think your readers will agree with me, that one or two pecks of Louise Bonne Pears from a well-trained pyramidal tree on the Quince stock, would be of more value for the dessert than a hundred bushels of "Cheat-boys" from a majestic tree, or even twenty or thirty bushels of Swan's Eggs, or "Grey Beurrés," a sort which used to be grown here, large trees often bearing thirty or forty bushels.

Mr. Robson, under his peculiarly happy circumstances of not being in the mercantile world of gardening, and of course not knowing much of what is taking place in it, will excuse me for giving him a few words of enlightenment. Such great advantages have been found in France from using the Quince as a stock for the Pear in gardens—a custom, I may add, two hundred years old—that in the French nurseries for a hundred Pear trees sold grafted on the Pear, there are five thousand trees grafted on the Quince, the demand annually increasing. In this country the custom of grafting Pears on the Quince for garden culture has existed not quite so long, and for many years was confined to those skilled in gardening—not professed gardeners, but amateurs. Well, it has gradually spread, till the demand for such trees is very large. Taking my calculations from what passes here, I should say that for fifty thousand trees on the Quince stock sold annually, there are only five thousand on the Pear stock, and as the culture of the former by double-grafting becomes better known, this proportion will soon be exceeded. There is, indeed, nothing more charming than a plantation of Pear trees on the Quince stock, either as bushes, pyramids, or cordons. They never fail to bear if their blossoms are protected. They are always full of blossoms, filling the heart in spring time with that which ought always to come in spring—hope. When I look at my plantation of Louise Bonne Pear trees, some of them twenty-five years old, all standing not quite 5 feet apart, I am annually struck with the pleasant facility of their culture. They are all on Quince stocks, all pyramids some 8 feet high, and are all pinched in during the summer, so as to keep the trees nicely within bounds. There are about two thousand of these trees, and they stand on a slip of ground less than an acre in extent. Now, the question is, How many "majestic trees" I could grow in this space? Possibly about forty of some such Pears as I have named, worth but little to eat, and less to sell. The forty majestics would, probably, at the end of fifty years bear twenty bushels per tree. The two thousand pyramids on the Quince, after twelve years' growth, bore half a bushel per tree of fine thinned-out fruit, of more than a quadruple the value of the others. No comment is required.

With regard to the culture of Apples—by which I mean their careful cultivation in fruit gardens, not rudely growing large quantities on "majestic trees," we have to thank Mr. Robson for his candour. He says, "I have had little experience with the Paradise stock, and have yet to learn any advantages it possesses over the more common crab." He has all to learn; but, then, placed as he is in a climate and soil the best in England, with a well-appointed large garden, with wall trees, espaliers, and standards, all doing well, and producing more fruit than can be consumed, he has no stimulus to make him gain experience, to try experiments, or to learn whether one stock is better than another. The Paradise stock has been known upwards of a century, and has been largely used by our continental neighbours, who are infinitely our superiors in fruit-tree culture in the open air. It is only within these last twenty

years that it has made much progress in England, owing to that peculiar national dullness in all matters relating to the culture of the soil. We take a new mechanical invention readily enough from our neighbours, but a new idea in gardening is hummed at and haw'd at, till many years have passed and much valuable time has been lost. As with Pear trees on Quince stocks, I must be allowed to go into statistics. Twenty years ago 1000 Apple trees on Paradise stocks supplied the usual demand here; this has gradually increased till 30,000 scarce suffice to do it. The produce of Apple trees per acre on good Paradise stocks would bear about the same proportion to orchard trees on the crab, as pyramidal Pear trees on the Quince do to the "majestic trees," and owing to the trees being cultivated—the ground kept clean, the trees pruned, and the fruit thinned—it is far more valuable. I was offered this week a guinea a-bushel for my Newtown Pippins, grown on dwarf trees on the Paradise stock, by a Covent Garden fruiterer; besides this, the crop seldom fails, owing to the fruit being thinned and the trees not distressed by bearing too many—in short, they may have careful culture, such as it is impossible to give to orchard trees, which, in plentiful seasons, bear too many, and in seasons the converse none. There is nothing "questionable" about the early fertility given to Apple trees on the Paradise stock. They commence to bear the second year from the graft. It is true that such sorts as Hawthornden, Keswick Codlin, and some others do the same on the crab; but such sorts will not supply our desserts or all our wants. No good cultivator would plant a Pear tree on the Quince, unless it was budded or grafted near the surface. It is true that the Quince makes roots near the surface, consequently its stem may be on an emergency buried more deeply than the stems of other trees without injury. With respect to the bearing of Apple trees on a good kind of Paradise stock, if life were not so uncertain, I would wager that twenty trees on it would bear double the quantity of fruit than the same number on crab stocks. Mr. Robson acknowledges to having had no experience in this matter, and yet he makes most confident assertions; this is not prudent in a writer.

No one can admire more than I do a fine orchard of Apple trees, such as one sometimes sees in Kent and in Nottinghamshire, more particularly with Mr. Pearson, whose grandfather and father planted the trees—they really are "majestic," and owing to the heavy demands in a large manufacturing town, where all sorts of fruit are wanted, doubtless pay well; but I confess I fly at higher game, and wish to grow only the finest fruit, such as will command a high price—something in the way of my Newtown Pippins.

At the end of his fourth paragraph Mr. Robson tells us that "We see no instance in which she (Nature) buries the collar below the surface." Nature sometimes tries her hand at grafting in a Hawthorn hedge by uniting two branches, but I never remember her taking budding in hand, consequently she does not, and never has known anything about burying the "collar"—i.e., the junction of the bud with the stock.—T. R.

MR. WILLIAM PAUL'S SHOW OF SPRING FLOWERS.

On Wednesday last there was opened to the public one of the most charming floral displays which have been seen for some years, a display worthy of one who enjoys a high reputation, not merely as an enterprising nurseryman, but as a scientific horticulturist as well. The exhibitor is Mr. W. Paul, of the Waltham Cross Nurseries, the place of exhibition the eastern conservatory arcade of the Royal Horticultural Society's gardens at Kensington, and the subjects those which are embraced in the comprehensive term, spring flowers.

This exhibition may be regarded in two points of view—first, as an example of tasteful and effective arrangement as a whole; and, secondly, as showing the results of successful cultivation in the merits of the individual flowers. Into the latter it is not our intention here to enter, for a large proportion of the subjects exhibited are the same as those with which Mr. W. Paul has taken no less than twenty-nine first prizes at the recent shows, a fact which is sufficient evidence of their excellence. Those majestic spikes of Hyacinths which carried all before them, reinforced by others equally fine, those Tulips so showy and rich in colour, those gentle Crocuses, and those glorious Rhododendrons, are here in all their beauty; and to these are added numerous miscellaneous greenhouse plants, such as Azaleas, Camellias, Eriostemons, Epacrisces, Cinerarias,

Geraniums, double-flowering Peaches, &c. But the Rose, that flower of all ages, and for which Mr. W. Paul is so famed, must not be forgotten; two beautiful groups of it, placed one at each end, serve as the points on which rest the right and left wings of the whole arrangement. Among the varieties are several new ones, such as Dr. Lindley, Elizabeth Vigeron, Glory of Waltham, and Black Prince, several others of the best of the Hybrid Perpetuals, and the delightfully fragrant Teas. The next group, on passing from the conservatory eastwards, consists of miscellaneous greenhouse plants interspersed with flowering-bulbs, and flanked with double-flowering Peaches. Then we have another group composed of Tulips, Hyacinths, and Crocuses; a fourth has masses of rich-coloured Rhododendrons on each side, with three lines of Tulips, and six of Hyacinths, stretching along the centre; the fifth is a mixed group of greenhouse plants, supported on each side by Lilacs, Richardia æthiopia, and tall Scarlet Geraniums; and the sixth, the terminal group of Roses. Opposite the pillars of the front of the arcade a series of semicircular tables are variously filled with *Dielytra spectabilis*, *Cinerarias*, *Narcissi*, *Cyclamena*, *Lily of the Valley*, and *Hyacinths* of various colours, edged with either white or red Chinese *Primulas*.

The arrangement of the groups above briefly described may appear simple, and it has that merit, but it is very effective as a whole; and on inspection it will be found that the details in each group have been carefully studied as regards the contrast and harmony of the colours. The exhibition will continue till the 3rd of April, and besides affording an example which may be consulted with advantage in conservatory arrangement, will afford, it is to be hoped, gratification to thousands during the Easter holidays. To the lovers of fine flowers it cannot fail to do so.

PROPOSED HORTICULTURAL DINNER.

A MEETING was held at Anderton's Hotel, Fleet Street, on the afternoon of Thursday last, to consider the propriety of holding a dinner at some date during the continuance of the International Horticultural Exhibition. Upwards of twenty gentlemen were present; and Mr. William Paul, of Waltham Cross, being called to the chair, the following resolutions were unanimously adopted.

1st. That a public dinner be held during the week of the International Horticultural Exhibition, and that a Committee of Management be appointed to carry out the same.

2nd. That the dinner take place on Thursday, the 24th of May next.

3rd. That an advertisement be inserted in the gardening publications announcing the dinner, and requesting that those intending to dine send in their names at once to the Secretary; and that the price of the tickets for the dinner be fixed at 10s. 6d. each.

4th. That the following persons be a Sub-Committee to carry out the arrangements with respect to the dinner:—Messrs. C. Lee (Chairman), C. Edmonds, B. S. Williams, T. F. Wilding, J. F. Meston, Mr. R. Dean (Secretary).

Several letters were received from leading horticulturists regretting their inability to attend, but cordially approving of the proposal.

DESTROYING THE BROWN WEEVIL.

FROM your description given to "WATSONIAN" in the *Journal* of February 20th, I am inclined to think that it is the same weevil with which we are troubled. It first begins its depredations in the autumn and spring months by eating away the bark of our young Hollies, Yews, &c., a little below the surface of the ground. It formerly committed sad havoc among our two and three-year-old seedling Rhododendrons; but by annual and biennial transplanting we have almost banished it from our "bog ground." Our mode of proceeding is about the month of May to take up the plants, and give each a slight shake or two, when out rolls from the neck of the plant a white crescent-shaped red-headed grub, about half an inch in length. In June it changes into the beetle or weevil state, which at first is of a white, soft, pulpy matter, gradually becoming brown and hard, when it commences its ravages above ground, in the summer and autumn eating the foliage, and in the spring the buds and bark of our fruit trees, Pears and Plums especially.

If "J. B." will try the following, he may at least save the buds

of his Vines:—Take half a pound of mutton suet, melt it, and while hot mix with it half a pound of chloride of lime, keeping it stirred till it cools, to prevent the chloride of lime settling. Put a ring of this about an inch wide round the stems of the Vines, a little above the surface of the soil. I have used this mixture for the last three years on some thousands of young trees, Pears, Plums, Apples, &c., and in not one instance have I found the weevil cross it.

I find that the best traps for catching the weevils are pieces of rather stiff grafting clay, fitted loosely round the stems, leaving sufficient room for the weevil to creep down between the stem and the clay. Divide the clay on each side of the stem. If these rings are examined every morning numbers of the insects will be found to have crawled underneath after their night's raid.—A NURSERY FOREMAN.

A FEW HINTS ON THE CULTURE OF THE BALSAM.

AFTER having obtained the seed of some variety which has been very highly recommended, and seeing in perspective its beauties developed in summer, nothing is more annoying to the grower of this beautiful plant than to find, after having grown the plants for a month or two, that they must be put out of sight to hide their lanky stems; and as now is the proper time to commence growing them, perhaps a few hints as to their culture would not be unacceptable to some of your readers.

Having procured seed of the Camellia-flowered varieties, if a year or two old so much the better, sow towards the end of March, in light sandy soil, about ten or twelve seeds to a 48-sized pot. Place the pot in a Cucumber or Melon-bed at work, or wherever there is a brisk heat to start them, taking care when the seedlings are up to keep them close to the glass to induce stabby growth. When the plants are 3 or 4 inches high pot them off singly into small pots, using light loam and leaf mould, with a sprinkling of sand. Place them on a hotbed, and keep them close to the glass as before, using a little shade in very bright weather. When the plants have rooted sufficiently they should be kept rather dry and cool for a week or two, which will induce them to show a few flowers, when they can be sorted over, the worthless thrown away, and those with double blossoms and the brightest colours retained. After this the flowers should be rubbed off, and the plants shifted into 32-sized pots, using richer soil than before, and plunging them to the rim in an old Potato hotbed, or something of the sort, where there is a little bottom heat. Keep the lights on, and supply the plants with abundance of water; give plenty of air, syringe them overhead every afternoon, and shut up for an hour or two, tilting the lights a little at night.

As soon as the roots have reached the sides of the pot, and before the plants become pot-bound, shift into the blooming-pots; ten-inch pots are the most suitable for that purpose. Use a compost of two parts friable turfy loam, one of two-year-old dried cowdung, and one of leaf mould and sand. After potting plunge the plants as before, and shade them till established, when the lights should be taken off altogether, except in rough stormy weather. They should be liberally supplied with manure water till they are placed in the house which they are intended to decorate. The flowers should be picked off the main stems should they appear before the side shoots are furnished with buds.

A few plants treated as above will give more satisfaction than a larger number grown indiscriminately, and they will be good plants, and of select sorts; and coming in as they do, when the usual inmates of the greenhouse and conservatory are out of doors, they will be as highly appreciated as they are easily grown.—W. C.

MESSRS. CUTBUSH'S SHOW OF SPRING FLOWERS.

To the admirable display which Messrs. Cutbush, of the Highgate Nurseries, have this year made at the Crystal Palace, as well as to the very superior excellence of the flowers composing it, we have already directed attention. It therefore now only remains to say a few words as to the arrangement.

Along the centre of one of the naves is a double line of tabling, divided down the centre, and 300 feet in length, and on one side of this are arranged about 300 pots of Hyacinths and a like number of Tulips, comprising the best varieties of

those favourite spring flowers—flowers, be it remembered, which can be cultivated by all, which display their full beauty almost before the icy hand of winter has relaxed its grasp, and which, by a little encouragement, may be brought forward to adorn the conservatory, the drawing-room, or the window, even amidst the frost and snow. Of the Hyacinths, it is not too much to say that all the spikes are good, and a very large proportion of them are of a size, and of a perfection as regards form and colour, that no ordinary grower could hope to attain. The Tulips, too, are extremely gay, and had the most showy varieties not been noted as being shown at the recent exhibitions, it was our intention to have named a few of the most effective. They are well worthy of more extended cultivation than they at present receive, more especially as it is not difficult to flower them well either for conservatory or out-door decoration.

On the opposite side of the stage to that on which the Hyacinths and Tulips are ranged is a miscellaneous collection of spring-flowering plants, including some of those already named, Snowdrops, Crocuses, and other bulbs; Dracænas, Azaleas, Kalmias, Rhododendrons, Andromedas, Camellias, Heathes, Epacrises, Acacias, Deutzias, Cytisus, Guelders Rose, Cinerarias, double-flowering Peaches, and the pretty little double white *Prunus sinensis*.

The whole of this excellent display is covered with a new canvas awning prepared for the occasion, and this, whilst it serves to prevent that dwarfing effect which all large structures like the Crystal Palace have upon plants, by the subdued light which it affords, is most favourable to the brilliant colours of the flowers being seen to the greatest advantage.

This exhibition will continue open up to, and including, the 31st instant, and we can commend it to our readers as one that will well repay an inspection.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE.—New Hyacinths and Roses were on this occasion exhibited by Mr. William Paul. The former consisted of *Vinxbaak*, Sir Henry Havelock, and Bird of Paradise, to each of which a first-class certificate was awarded; and of Princess Mary of Cambridge, Sir E. Landseer, and Adelina Patti, all of which have been already noticed in recent reports. The Roses from the same exhibitor consisted of Dr. Lindley, large, full, and rich in colour; Elizabeth Vigneron, very large, rosy pink; Glory of Waltham, said to be a fine climbing Rose; and Black Prince, a dark crimson, shaded with black. To this was awarded a first-class certificate. Of Orchids there was a very good display. W. W. Buller, Esq., Strete Raleigh, was awarded a special certificate for a collection in which were *Dendrobium speciosum* with two very fine spikes, *D. aggregatum*, *Vandas*, &c.; and a similar award was made to Mr. Anderson, of Meadow Bank, Glasgow, for cut spikes of *Lycaste Skinneri*, *Odontoglossums*, *Epidendrum rhizophorum*, &c. Mr. Robson, gardener to G. Cooper, Esq., Old Kent Road, had a first-class certificate for *Dendrobium densiflorum thyriflorum*, with an orange lip and white sepals and petals; and from the same came also *Odontoglossum Alexandra*; *O. Cervantesii*, white with some crimson bars; *O. hystrix*; and *O. gloriosum*. Mr. Wilson, gardener to W. Marshall, Esq., Enfield, also exhibited the *Dendrobium* above referred to; and Mr. Willcock, gardener to Dr. Pattison, St. John's Wood, had a special certificate for a collection of Orchids, in which were included *Dendrobium chrysotoxum*, *Oncidium sarcoles*, *Epidendrum atropurpureum*, an unnamed *Odontoglossum*, *Lycaste Skinneri*, and *Cattleya pallida*. From Messrs. Backhouse, York, came *Odontoglossum luteo-purpureum*, referred to in the report of the Scientific Meeting. Mr. Bull furnished a large collection of new plants, &c. Special certificates were awarded him for a group of *Imantophyllum* miniature in fine bloom, and for the handsome *Bignonia argyrea violascens*. *Dammara Moorei* received a first-class certificate, and *Camellia Emilia Lechi*, rose-coloured, one of the second-class. Of Chinese *Primulas*, a fine collection of twenty came from Messrs. Windebank and Kingsbury, of Southampton, who received a special certificate for the collection, and first-class certificates for the following varieties—viz., *P. sinensis magnifica*, rosy pink, very double; *alba gigantea*, large, single white; *filicifolia rubra*, single, very large, glowing rosy purple, beautiful in colour; and *filicifolia alba*, a fine single white. Mr. Toombs, gardener to W. S. Roots, Esq., Kingston-on-Thames, received a first-class certificate for *P. sinensis filicifolia rubra plena*, the first of a new strain of double-flowering Fern-leaved varieties, and as such an important acquisition. The flowers were perfectly double, of a purplish rose, but pale at the edges of the petals; Mr. Shepperd, Bedford, likewise exhibited a variety called *Distinction*, but no award was made for it. From Messrs. Osborn, Fulham, came a yellow *Sinningia*; from Mr. Brown, Eldon Hall, a dozen cut blooms of *Camellias*; and lastly, from Mr. Green, gardener to W. Wilson Saunders, Esq., *Sonchus platylepis*, interesting on account of *Orobanchæ minor* succeeding so well upon it; *Nicotiana wigandoides*, loaded with white blossoms; *Maxillaria picta*, *Pleurothallis dichroa*, *Compartmentia rosea*, and other plants of botanical in-

terest. A small standard Wistaria in excellent bloom came, in addition, from the Society's Chiswick Garden.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. The only subjects exhibited were Black Alicante, Muscat of Alexandria, and Lady Downe's Grapes, of which excellent bunches came from Mr. Tillyard, gardener to J. Kelk, Esq., M.P., Stanmore Priory. They were in very fine condition, and excellent in flavour. A special certificate was awarded them.

SCIENTIFIC MEETING.—Lord H. Gordon Lennox, M.P., in the chair. The awards of the Committees having been announced, the Rev. M. J. Berkeley made some remarks on the subjects exhibited. The distinguishing features on this occasion were, he said, the *Amherstia nobilis* and the collections of Orchids, but of these Mr. Bateman would speak. Attention was then directed to *Odontoglossum lateo-purpureum*, exhibited by Messrs. Backhouse; and *O. hystrix*, notwithstanding the difference in the spikes and leaves, was stated to be merely a variety of it. Mr. Berkeley then read a letter from a gentleman, whose name was withheld lest the locality being disclosed collectors might divest it of the plants, stating that in his neighbourhood the Lizard Orchis (*Orehis hircina*) attained great perfection, and in proof instancing one near his house which had a spike 31½ inches in height, bearing fifty perfect lizards. Chinese *Primulas* next came under notice, particularly a double Fern-leaved variety; and the structure of double-flowering *Primulas* being a matter of considerable interest, a paper on the subject would probably appear in the "Proceedings." As an instance of the abnormal production of flowers, a case was cited in which *Clarkia elegans* was found to have produced a perfect flower from the side of a petal. Of *Sonchus platylophus*, from Mr. Wilson Saunders, it was remarked that it appeared peculiarly favourable to the growth of the parasitical *Orobanche minor*, which, when once established on the *Sonchus*, was very difficult to eradicate. Cultivators experienced great difficulty in endeavouring to grow parasitical plants, but if it were once known which were the plants most favourable to the growth of particular parasites, the cultivation of these would be much facilitated. *Chloranthus inconspicuus* was mentioned as being very curious in respect to the structure of the flowers, and *Dammara Moorei*, from New Caledonia, as an elegant plant for table decoration. A section of a branch of *Pinus Lambertiana*, from a tree recently cut down in the course of the improvements at the Society's Chiswick Garden, was next exhibited. The branch from which it was cut was pendulous, and then grew erect, and it was remarkable that the distance from the pith to the outside was only 1½ inch on the upper side, but as much as 8½ inches on the lower one, being a difference in the thickness of the woody deposit of 7 inches. This result was partly to be accounted for by the gravitation of the sap, but there were other circumstances as well that might exert an influence in causing the great inequality in the thickness of the woody layers on the two sides. A little mollusc, which had attacked Mr. Wilson's Cucumber plants at Weybridge, then occupied attention. This was found to be identical with *Bulinus Goodallii*, a native of the West Indies, although of larger size than the specimens which had for some years existed at a Bristol nursery. It was there mostly found at the bottoms of the Pine-pots, but did not attack the roots; in the case of the Cucumber-plants, on the contrary, it had proved troublesome, and notwithstanding that the house had been thoroughly cleaned and white-washed, and the old soil removed and replaced with fresh, this little snail was as plentiful as ever. Mr. Gwyn Jeffreys, to whom specimens were shown, was surprised to hear of its attacking Cucumber-plants, as the species is considered to be carnivorous, but several instances were known of carnivorous molluscs becoming herbivorous, and *vice versa*. Mr. Berkeley then read a letter from M. Naudin, of Paris, stating that he had found *Cucurbita melanosperma*, an annual at Paris, perennial at Hyères. There was a plant there, five years old, which had a hard stem upwards of 40 yards in length, and even then its growth was not complete. The difficulty experienced in growing some kinds of Gourd in this country was an interesting point in the theory of horticulture, for although the summer temperature at London was nearly as high as that of Paris, yet Gourds were found to thrive better at Paris than near London, whilst at Bordeaux, though warmer than Paris, they were not grown so successfully as at the latter place. The explanation of this was probably to be found in the sky being clearer at the one place than the other, hence that light was as important to their ripening as heat.

The Chairman in calling upon Mr. Bateman to address the meeting on that plant which had been called the pride of Burmah—the *Amherstia*, said that Mr. Bateman required no introduction from him, as that gentleman had contributed so much to the success of the fortnightly meetings.

Mr. Bateman said that before dealing with the most attractive object in the room—the *Amherstia*, and the Orchids, which were his usual province, he would direct attention to an outsider—viz., *Andromeda floribunda*, a plant which in the last few years had risen rapidly into favour. It should be known, however, that it was most poisonous to cattle. His first suspicion of its being so was awakened two years ago, when a goat at Biddulph Grange was seized with what appeared to be an epileptic fit, and in the foamings from the mouth he saw some leaves suspended; but a short time ago, however, two cows belonging to a neighbouring farmer were taken ill with what was supposed to be the cattle plague, and one of them died. On examination

it was found that she had eaten some withered leaves of the *Andromeda*, which had formed part of some school decorations that had been incautiously thrown away within the reach of the animals. Whether dead or alive, no portion of the plant should ever be within the reach of cattle. He did not wish to discourage the cultivation of the plant, but only to inculcate caution as to where it was planted, for it had proved harder even than the Oak, and the flowers, though formed before winter, refuse to expand till spring. Next with reference to Orchids Mr. Bateman remarked that *Odontoglossum radiatum* of Reichenbach, and *O. hystrix*, named by himself, most, he thought, be merged in *O. lateo-purpureum* of Lindley. The disadvantages under which those who first describe new Orchids, often from wretched specimens, labour were then referred to, and as an illustration of the development of such Orchids under cultivation, he held up a small plant of *Dendrobium luteolum*, newly imported, and a fine spike grown by Mr. Anderson, gardener to T. Dawson, Esq., of Meadow Bank, near Glasgow, where there existed a remarkably fine collection of Orchids. Among others there was there a perfectly white variety of *Lycaste Skinneri* *Odontoglossum Alexandræ*, exhibited by Mr. Robson, gardener to G. Cooper, Esq., was small, but there was one at Mr. Patterson's, near Glasgow, with seven flowers on it. *O. Bluntii*, was apparently only a variety, for it had been impossible to discover any specific difference between it and *O. Alexandræ*. Attention was next directed to the fine example of *Dendrobium speciosum*, from W. W. Buller, Esq., and though the species had been long known in this country, it was, said Mr. Bateman, evidently still one of the finest, and he called upon Mr. Buller to state the mode of cultivation which he had adopted.

Mr. Buller said he had grown it in a warm greenhouse where Geraniums were kept, and the only secret in its cultivation, he believed, was not to shade it at all. Mr. Buller added that *D. Hillii*, which he had recently seen at Kew, appeared identical with *speciosum*, but the latter grew on rocks, the former on trees.

Mr. Bateman, in continuing his observations on the Orchids, said in reference to one exhibited as *Dendrobium macrophyllum*, that a large variety of this had, till the last few years, gone under the name of *D. anosmum*, but that which had been called *D. Daysonum*, introduced by Messrs. Low, was the true *anosmum*. Attention was then drawn to a cut spike of *Angræcum eburneum*, which had been in bloom since Christmas, and of which the beauty had only begun to wane.

The next subject was the special one of the day, *Amherstia nobilis*. Of this Mr. Bateman remarked, that his acquaintance with it began at a very early age, for he remembered reading, when a boy, a newspaper paragraph to the effect that a wonderful flower had been discovered. Little did he then think that forty years afterwards he should have been called upon to speak of that very plant. The paragraph to which he referred appeared about the year 1825. Two or three years later, when at Oxford, he was surprised on opening Wallich's "*Plante Asiaticæ Ruriores*," to find that the first plate was a representation of that very plant. [The plates of it in this work, also one by Mr. Fitch, of the plant flowered at Mrs. Lawrence's, in 1849, were exhibited.] The history of its discovery and introduction was this. Some rumour had reached Dr. Wallich's ears from a Mr. Crawford, respecting a tree which had been seen in the garden of a monastery on the River Salween, in the province of Martaban, and some of the flowers of it were sent to Dr. Wallich. The latter took the earliest opportunity to visit the locality, and when he came to the garden of the monastery, he was surprised to see a tree 40 feet high, bearing long pendant clusters of vermilion-coloured blossoms, such as those exhibited before the meeting by Mr. Taplin. He also observed that the flower was greatly prized by the natives, being found by handsful before the gloomy images of Buddha. Ten years elapsed before any other notice was taken of the plant, and up to 1835 no living plant had been seen in Europe. That time was a memorable one in the annals of horticulture, for then the Horticultural Society's collectors were ransacking the world; then Dr. Lindley and Sir William Hooker were in their prime; and then, too, was in his prime the late Duke of Devonshire, who determined *coûte que coûte*, he would have the *Amherstia*, and he sent Mr. Gibson, now of Battersea Park, to bring it and certain Orchids over. Mr. Gibson succeeded in bringing home, in 1837, a living plant, and a house was specially prepared for its reception; but unfortunately at that time the process of kyanising had just been discovered, and though known to preserve wood, it had not then been also discovered that it had just the contrary effect as regards growing plants. It was, then, placed in a kyanised tub, and year by year grew worse and worse, and seemed so likely to perish that Sir Joseph Paxton had determined to send some one to India to introduce another plant, and was just on the point of carrying that determination into execution when the evil effects of kyanised timber on plants were found out, and the plant was removed from its tub, and thenceforth it began to flourish. Although, however, the Duke of Devonshire was the first to introduce the *Amherstia*, he was not the first to flower it, for Mrs. Lawrence, of Ealing Park, in 1849 had the honour of presenting to Her Majesty a bouquet from a plant sent home to her by Lord Hardinge. Since that time the flowers of the *Amherstia* had not been seen, till happening to be at a *soirée* of the Manchester Field Naturalists, he found a spike there, and he was informed by Mr. Taplin, the Duke of Devonshire's gardener at Chatsworth, that it was the last of fifty or sixty racemes that the tree had produced this year. Mr. Bateman added, that the present Duke is so charmed with his *protégé*, that he is going to enlarge the house, and

he (Mr. Bateman) would also suggest that the Duke should stretch out his arm to the Andes, and introduce that plant which bears the name of his family, and is said to be the glory of the new world, as the Amherstia is of the old. And here he would remark, in connection with botanical nomenclature, that the honour of having a genus named after one would be more appreciated twenty or twenty-five years hence, for by that time the world would be so thoroughly ransacked that there would be few new genera to be named. Returning to the Amherstia, Dr. Wallich had described it as the most beautiful object in the Indian flora; and just as the celebrated Bonpland, the companion of the still more celebrated Humboldt, wrote after a long imprisonment in Paraguay, that the remembrance of their first botanical excursion was still vivid in his memory, so, too, it was likely that the eye of Wallich to the day of his death still rested on—*Amherstia nobilis*.

[We have seen the Amherstia in the Botanic Garden at Calcutta, and well do we remember the sparkling eye and hilarity of Dr. Wallich as he brought us into the presence of his pet tree. He had had a wooden palisading formed round it to prevent visitors gathering its flowers, and well did the tree merit such care. It was in full bloom, and as the breeze from across the Ganges waved the light pendulous branches, the gentle motions and blings of the crimson racemes and the long pinnate leaves, rendered it the most brilliant and graceful tree we have ever looked upon.—Ens.]

After a few remarks from Mr. Wilson Saunders on the *Sonchus* and *Orobanche*, it was, on the suggestion of the Chairman, resolved to send the Amherstia blossoms to Lady Sarah Williams, the daughter of the Earl of Amherst.

At this meeting twenty-one new Fellows were elected, and seven Societies admitted into union, among which was the Royal Horticultural Society of Ireland. The attendance at the lecture was extremely numerous, the visitors nearly filling the large Council-room, and altogether the meeting must be considered the most successful of those held this season.

WEEKLY SHOW.—The interest of last Saturday's meeting was greatly enhanced by Mr. William Paul's splendid show of bulbs and spring flowers, which everybody should make an effort to see.

The prizes offered on this occasion were for a collection of six miscellaneous plants, the first of which was taken by Mr. William Young, gardener to R. Barclay, Esq., of Highgate. His collection consisted of forced *Rhododendrons*, *Acacias Drummondii* and *eriocarpa*, *Dentzia gracilis*, *Epacris grandiflora*, and *Azalea ardens*. Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, was second; but if must have been a stretch of imagination on the part of the Judges to have regarded four *Azaleas* and two *Pelargoniums* as a "miscellaneous collection," in the sense in which the schedule requires it. Mr. Bartlett, of Hammersmith, exhibited a collection also, which received an extra prize.

In the competition for a collection of twelve bulbs, Mr. Young was again first, and Mr. Bartlett second. Mr. Young received first-class certificates for a collection of Tulips, a collection of Hyacinths, and a tray of very good *Camellia* blooms; and a second-class certificate for mixed bulbs. Mr. Bartlett received a first-class certificate for a collection of mixed bulbs, and an extra prize for a collection of Hyacinths. Mrs. L. Young, of 6, Blenheim Terrace, Kentish Town, exhibited a dozen well-bloomed Hyacinths in glasses, which had been grown in the window of a sitting-room, and received a first-class certificate.

INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

The following Hon. Local Secretaries have been appointed in addition to the list already published:—For Leicester, Mr. Wm. Penn Cox; for Huntingdon, Mr. John Ingram, The Nurseries, Huntingdon; for Chepstow, Mr. John Pillinger, The Nurseries, Chepstow; and for Redditch, Mr. John Gould, Rose Cottage Nursery. The Right Hon. Lord Lurgan has kindly consented to act as Chairman of the Belfast Committee.

As evidence of the success of organisation of this kind we may mention that the following sums have already been announced by the Secretaries of the places named:—Glasgow and West of Scotland, £127 3s.; Doncaster, £50 8s.; Bristol, £18 18s.; Ascot, £14 14s.; Warrington, £24 3s.; Chelmsford, £63; Coventry, £26 5s.; Manchester, £31 10s.; Oxford, £5 5s.; Derby, £21 1s.; Belfast, £36 15s.; Hertford, £10 10s.; Elgin and North of Scotland, £24 4s.

To show the strong interest the proposed banquet is exciting in the City, we may say that the Right Hon. the Lord Mayor has nominated a Committee of six gentlemen from the Corporation to assist and advise the Banquet Committee, nominated by the Executive Committee of the International Horticultural Exhibition. It is composed of the following gentlemen:—Mr. Deputy Obbard, Mr. Deputy Charles Reed, F.S.A., Messrs. J. E. Saunders, Chairman of the City Lands Committee, John Kelday, Wm. Lawley, and F. Wyatt Truscott.

THE LATE MR. FRANCIS DICKSON, OF CHESTER.

MR. FRANCIS DICKSON, who died at the Upton Nurseries on the 3rd inst., was born at the Nurseries, Leith Walk, Edinburgh, on December 25th, 1793, and was the youngest son of the eminent nurseryman of this name who was the founder of the well-known nurseries of the Dicksons of Edinburgh. The late Mr. Francis Dickson was the last direct representative of that family in the profession. After making himself thoroughly master of the nursery business as practised in Scotland, he went to the then celebrated nurseries of Malcolm, at Kensington, where he distinguished himself by his enthusiasm and love of his profession, and made the acquaintance and lasting friendship of many of the foremost men in the botanical world. After remaining there for a considerable period he returned to his brother, Mr. George Dickson, in Edinburgh, and in the year 1819 came to Chester, where he established the well-known nurseries with which his name was so long and so honourably associated. The collection of hardy plants, and especially of rare herbaceous and alpine plants, which he brought together, was considered at one period to be unequalled. He was the intimate friend of the late Mr. Loudon, and was frequently consulted by him in the publication of his botanical works, as well as by the late Thos. Andrew Knight, Esq., by whom he was nominated, in the year 1825, a corresponding member of the Royal Horticultural Society.

From his earliest years he was an enthusiast in his profession, and his chief delight was in cultivating those plants which were considered the most difficult of management, and in which he was so successful. He was well known for his integrity and uprightness of character. His genial heart warmed with kindly fellowship towards those of his immediate profession who came into contact with him, and his generous hospitality was ever proffered to them. His erect and manly frame gave indication of the vigorous mind it enshrined—a mind stored with great and varied information relative to all branches of his profession. He was borne to his grave in Chester Cemetery on the 8th inst., followed by a numerous throng, who paid in this manner their last respect to a worthy fellow townsman and a valued neighbour. He is succeeded in the management of the business by his two sons, Mr. F. Arthur Dickson and Mr. Thomas Dickson.

NEW BOOK.

A Practical Treatise on the Culture of the Pine Apple. By DAVID THOMSON. W. Blackwood & Sons.

THE name of the author, one of the very best gardeners of the British islands, guarantees that this volume contains no directions that are not sound and tested by experience. He says that his object was to be as "strictly practical as possible;" he has attained his object, and we commend the work to any of our readers who need truthful information on Pine-Apple culture. One or two extracts will give an idea of the contents.

"HOW TO KEEP UP A CONSTANT SUCCESSION OF RIPE FRUIT ALL THE YEAR.

"Where a regular supply of fruit has to be kept up with the least possible intermission all the year round, it is more certainly accomplished by potting a quantity of suckers at frequent intervals. Supposing that a number of Queens ripen in May, June, and July of 1866, these stools will give the suckers that supply the earliest fruiters for 1868. And those that ripen in August, September, and October, give the suckers that will succeed the earliest lot, so that these two sets of early fruiting sorts cover six months of the twelve. The other six months of winter and spring—particularly spring—are those in which Pines are most valued, as other fruits are then scarce. March and April are the most difficult months of the whole year in which to have ripe Pines.

"In June and July I always endeavour to start a quantity of the true Smooth-leaved Cayenne. This is a noble Pine when well grown, being unsurpassed for appearance and long keeping after it is ripe, and swells better after October than any other Pine I know. The Black Jamaica is also a most useful Pine for winter swelling, and probably is unsurpassed for flavour at the duller season of the year. The Queen is comparatively worthless as a winter Pine compared to these two; it does not swell kindly, and is always dry and juiceless compared to them.

"There should be two sets of Cayennes and Jamaicas, as recommended in the case of Queens and other early sorts, for summer and autumn fruit. The Smooth-leaved Cayenne is so very shy in making suckers that I always endeavour to save as many crowns as I can, and take all the suckers that can be got in October from the fruiting plants, whether the fruit be ripe or not. These suckers and crowns are potted generally into six-inch pots, and shifted in spring as soon as sufficiently rooted, as described in the former part of this treatise. These are

shifted into 11 and 12-inch pots, and grown on in the usual way, only that they are not kept so dry in autumn and winter as is desirable for early-starting plants. The temperature, too, is kept 5° higher than for *Queens* at rest; the object being not to ripen, as it were, the growth of these so as to predispose them to start in spring. The heat is quickened, both top and bottom, in February, and they make a spring growth; are rested in May and June by being kept drier and cooler; and then, with increased heat and moisture, I rarely ever fail in starting them all in June and July. Care must be taken that they never get too dry at the root, particularly in spring, as that would be likely to start them before this is required. This applies with the same force to *Jamaicas*. These will keep up the supply of fruit till the end of the year.

"It is necessary to have a later lot of these two varieties to come in for spring, and this I find rather difficult in the case of the *Smooth Cayenne*. It makes suckers still more tardily from late plants. The method I generally adopt is to save the old stems of those that ripen their fruit through the winter, and place them in strong bottom heat to spring the latent buds. These grow into nice plants, ready to shift into eight-inch pots in September, and I shift these into their fruiting-pots in March, and by pushing them on they start in September and October, and succeed those started in June and July. For this purpose I most decidedly give the preference to the *Cayenne*; and from plants of it so managed, I have had very fine fruit in the spring months. They are kept on at a temperature of from 60° to 65° all winter, with a steady bottom heat of 80°.

"There is nothing peculiar in the management of these winter fruiting sorts, except it be that I never keep them so dry and so completely at rest in winter as those intended to start early. This is with the view of their not resting and maturing themselves so thoroughly in autumn and winter as would cause them to start when excited in spring. The *Smooth Cayenne* requires more moisture at the root when growing than is good for most other sorts. It is also more impatient of bright sun early in the season than any I know, more especially if kept gently on the move all winter. And rather than allow the foliage to become bronzed, shade should be applied for a time, as already directed. When swelling off in winter, water at the root will of course not require to be so frequently given as in summer, and there should be no syringing. The evaporating-trays will keep the air sufficiently moist. Air must be put on for a short time in the middle of every fine day."

With respect to the treatment of plants that fail to start into fruit, Mr. Thomson says:—

"When I have room to conveniently operate on these I cut the plants over at the surface of the soil, and strip a few of the leaves off them, and pot them deeply and very firmly in fruiting-pots. They are slightly shaded for ten days, by which time, with a brisk bottom heat, they begin to send out wonderfully strong roots, and then the shading is discontinued, and they are watered. In this way they are transformed into dwarf strong plants, and I always find they start into fruit very soon after, and swell off fine fruit."

LOBELIAS, VERBENAS, AND ZONALE GERANIUMS FOR BEDDING.

In reply to a query from "NEMO" in your Number of the 6th inst., I write to say that I sowed a packet of *Lobelia Snowflake* about six weeks ago, and though the seeds were a long time in coming up, yet I have now about fifty or sixty plants above ground.

I sowed four kinds of *Lobelia* the same day—*Blue King*, *Paxtoniana*, *Speciosa*, and *Snowflake*—with very different results, though they were all treated alike, *Paxtoniana* coming up very freely and quickly, and *Blue King* next. *Snowflake* was a long time before it made its appearance. I am inclined to think that at this time of the year persons are apt to give many seeds too great heat and moisture, which they cannot stand till the days are longer, and there is more light. Small seeds, too, like those of the *Lobelia*, will not germinate if they are covered with too much soil. I always mix my seed with Calais sand previously to sowing, prepare a pan, smooth the top soil, and water it, then scatter the sand with the seed mixed in it over the top; the white sand helps very much to show where the seed falls, and to sow it evenly. I never cover it any more, but put a sheet of glass over it, and place it near the light in a temperature not exceeding from 50° to 55°. *Lobelia* seeds with this treatment scarcely ever require any more water till they are up.

A few words with respect to *Verbenas*, which seem according to some accounts to have kept badly this winter. The only kind I have seen really showing signs of disease is *Mrs. Holford*, and I have seen traces of disease on that for two or three years in several different gardens. Last September was too dry and hot for *Verbenas*, and, unless cuttings had been secured previously, it required a great deal of care and management to secure a healthy stock of plants afterwards. No plants are more easily injured by over-dryness at the roots,

I have known many a healthy pot of fine established cuttings permanently injured by one day's exposure to a drying sun after the pots were dry. Many gardeners are too much afraid of the watering-pot for *Verbenas* in the winter. My own experience is, keep them always slightly growing, as near the light as possible, give plenty of air underneath the stage, and water and syringe regularly, but always allow a little fire heat to dry off superabundant moisture from the leaves. With this treatment, and by nipping back the shoots whenever they are more than 3 inches long, *Verbenas* may be kept healthy and strong, without green fly, mildew, or thrips, and will supply any amount of cuttings in the spring.

I agree with Mr. Kent that it is a great pity that *Verbenas*, with the exception of *Purple King*, are so much neglected; it is often, I think, from want of attention, and because they are difficult to winter without proper care, and will not stand the treatment that the *Zonale Geraniums* have to live through. The following sorts all bedded well with me last year:—*Cruor*, *Firefly*, *Foxhunter*, *Mrs. Harrison*, *Madame H. Stenger*, *Nemesis*, *Ariosto*, *Mrs. Elphinstone*, *Sultana*, *Ocean Pearl*, *Miss Field*, *Brillant de Vaise*, *Purple King*, *Géant des Batailles*, *Garland*, and *Shades of Evening*. Of these, *Foxhunter*, *Miss Field*, and *Madame Hermann Stenger* have rather too straggling a habit, but the flowers are very perfect of their kind. *Nemesis* is so like *General Simpson* that I consider them the same, and the *General* was first in the field.

The following *Verbenas* are also, I consider, well worth growing for mixed beds, and I hardly know any bed that is more effective or more interesting than a mixed bed of *Verbenas*:—*Apollo*, *Mulberry Superb* (*Lady V. Scott* or *Miss Trotter* synonyms), *Mrs. Mackay*, *Black Prince*, *Lord Leigh*, *Lord Craven*, *The Moor*, *Reine des Violettes* (useful in colour, but bad-shaped truss), *Evening Star*, *Miss Hammer*, *Rubens*, *Mrs. Pennington*, *Silver Star*, *Tyrian Prince*, *Cicero*, *Lady Cotton Sheppard*, and *Victor Emmanuel*. This number might be increased by many of the new striped sorts, but I have not tried them, and therefore cannot form an opinion of them as bedding plants. I only had a few of them in large pots in a cold frame last year, but I intend to give them a trial this summer.

While on the subject of bedding plants I wish to add that I am going to make an experiment this year with all the new sorts of *Zonale* bedding *Geraniums*, both *Nesegay* and others, which I can obtain. I have Mr. W. Paul's new seedlings and several others of *Bull's*, *Carter's*, &c. Those of which I have only a few, I shall plant in large mixed beds, and, including old sorts, I have more than a hundred to try. If any person wishes any seedling or other *Geraniums* to be tried alongside of the older-established sorts, and also with some of the new sections from *Donald Beaton's*, I shall be very happy to try them and report on them. With your permission I will send you a report in the autumn of the results of my experiments. I wish to see which of the new sorts will stand the test of being planted side by side in *Yorkshire* with the older-established sorts, as *Tom Thumb*, *Trentham Rose*, *Stella*, *Crystal Palace Scarlet*, &c.—C. P. CLEAVEY.

TEMPERATURE-RECORDING APPARATUS.

In the spring of last year I purchased one of *Negretti* and *Zambra's* maximum thermometers (a cheap one on boxwood is the kind necessary for the purpose)—a thermometer where the mercury remains in the graduated portion of the stem on the slightest fall in temperature, and thereby shows the maximum heat attained during any given period. Now, any one who has such a thermometer in his possession will perceive that on tilting the instrument, bulb uppermost, the mercury detaches itself from what remains in the bulb and the portion of the stem near thereto, owing to the obstruction in the tube, which prevents the mercury retreating into the bulb on a decrease of temperature. It occurred to me at once that the portion of mercury detached could be made use of if means were devised for its measurement. Such a thermometer as I have described, where the obstruction is caused by compression of the glass tube and not by a piece of glass or enamel, when placed in a vertical position, acts as an ordinary thermometer; the mercury from its weight always passes the obstruction in the bent portion of the tube, and the reading of actual present temperature is obtained. If, however, the thermometer be tilted from the vertical position, the mercury will detach itself at the bent portion and run down to the farthest end of the

tube. Assuming that at a given time the thermometer can be so tilted by clockwork (as I will hereafter show to be the case), how is this quantity of detached mercury to be measured? in other words, when a person comes to his thermometer some hours after the portion has been detached, how is the temperature which was existing at the moment of separation to be ascertained? The portion of mercury detached must be measured, and the measurement is made in this way: Suppose the mercury when the thermometer is placed in a vertical position, bulb downwards, stands at 50°, it will be found on tilting the thermometer and detaching the mercury for experiment to the other end of the tube, that the upper surface of the detached portion will read off at or near some of the degrees on the ordinary scale of the thermometer. On the opposite side of the graduated part of the instrument a small slip of paper must be fixed by glue or some similar adhesive substance along the whole length of the tube. Should a thermometer, when placed vertically, read at 50°, care must be taken to note the height on the paper where the detached portion of the mercury appears on tilting, and note that spot 50° likewise. This plan is to be adopted at different temperatures throughout the scale, and by such means the temperature when the thermometer is tilted and reversed can be ascertained, or such a scale can be engraved by the maker. The instrument is reversed at the time that is desired by means of the weight of an alarm clock. As the weight descends, the thermometer which is in connection with it, is made to fall to a position considerably below the horizontal. I purpose now to give drawings of a

thermometer both before and after it has been set in motion by the alarm clock, with the machinery also which reverses the thermometer, and by such drawings I hope to convey to your readers a much better idea of the thermometer apparatus than I have done by the past description.

I have only cursorily glanced at this invention; but sufficiently, I think, to give your readers an opportunity of judging how far such a thermometer apparatus may be useful to them. I have no doubt but that many already possess a maximum thermometer, such as I have described, and most, if not all, a small alarm clock with weights. That is really all the machinery required for the apparatus in its simplest form. The working of thermometers which register the maximum and minimum is well known to all. In the morning the observer knows how low or how high the temperature has been during the night. My plan will not tell him when the lowest or highest temperatures occurred, as is the case when a photographic apparatus is used, but it will give him the temperature of that moment when the alarm descended, and the alarm must be set for the time when he wishes to know existing temperatures. I think in many instances that such knowledge will be of use to a gardener and others, and will give them respectively information how fires have been working up to that fixed time, whether proper temperatures were then existing in a room, or the degrees of cold or heat in the external air, and that not by getting up in the middle of the night, or by being on the spot by day, but by reading off by the new scale the height at which the mercury stood when the weight of the alarm ran down.

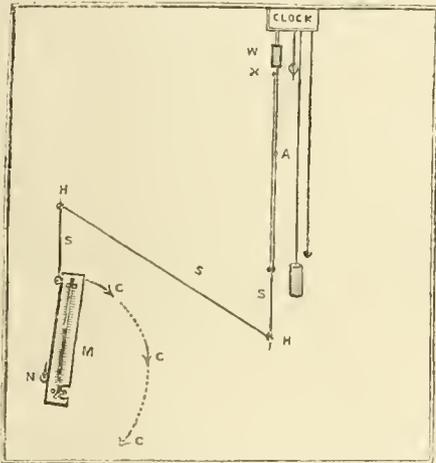


Fig. 1.

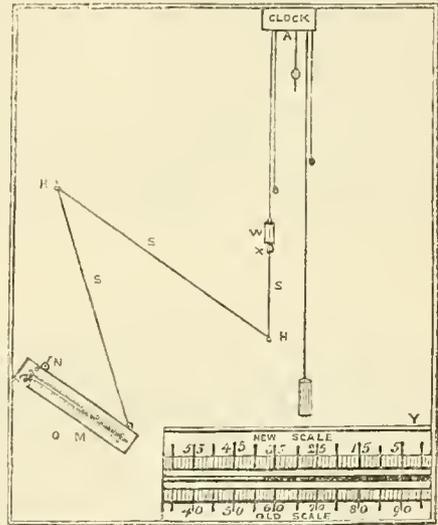


Fig. 2.

A. Piece of wood. C C C. Course of thermometer. H H. Hooks. M. Height of mercury in tube. N. A nail. O. Obstruction in tube. S S. String. W. Alarm weight. X. Hook to alarm. D M. Detached mercury. Y. Part of thermometer inverted, with new and old scale.

In choosing a thermometer for the purpose great care must be taken to see that the mercury does by its own weight easily pass the obstruction in the tube when the instrument is placed in a vertical position, and also that, when the thermometer is tilted, the mercury detaches itself without difficulty at the point of obstruction and proceeds to the farthest end of the tube. This previous caution is necessary, for unless the mercury acts in the way above mentioned (although such an instrument is perfect as a maximum thermometer), it will be of no use for recording temperature at any one given time. I now proceed to describe the temperature-recording apparatus.

Figs. 1 and 2 represent the invention in its two different stages; the one (fig. 1) a moment before the alarm has gone off, the other (fig. 2) when the weight of the alarm has descended and the thermometer is no longer in the same vertical position as before.

I will now glance more particularly at the general machinery necessary to carry out such a change, and, first, I will describe the mode of setting up a thermometer as it appears in fig. 1.

Against the wall of a greenhouse fix (secure from dripping of water), and set going a clock which is furnished with an alarm weight, w, at the bottom of which is a small hook, x. I will suppose the time at the moment of starting the pendulum and winding up the alarm to be 6 P.M., and that the temperature

of the place at 12, midnight, is required to be known. Set the alarm for 12, midnight. In the wall drive in or screw hooks at H, H, and at X fix a maximum thermometer which plays freely on a nail, N. Connect the thermometer with the alarm weight, w, by means of a string, s, s, s, fastened to the hook, x, and passing round the hooks, H, H. The instrument now acts as an ordinary thermometer, the mercury stands up to M, and passes the obstruction at the bulb, O. As the temperature varies, so will the mercury rise or fall in the tube; but at 12, midnight, the scene will be changed. The weight, w, will descend; the thermometer turning on X, as on a pivot, will pass through C, C, C, and will present an appearance similar to that observed in the second drawing, fig. 2. Now, what has really taken place? A quantity of mercury has been detached at O, and has run down to the end of the tube, marked D M (detached mercury). The instrument cannot run down to a lower position than that indicated in fig. 2, owing to a small piece of wood, A, which prevents the weight, w, descending farther. This will be better understood if the reader look at the position of A as represented in fig. 1. Care must be taken also to see that the mercury has run down to the end of the tube before reading off the degrees of temperature by the new scale, X, which represents part of a thermometer inverted with the mercury run down. Should an increase of temperature have taken

place after midnight a portion of mercury will be found deposited at the bulb end of the tube; but this quantity is not to be taken into account. At the moment of tilting, the thermometer is supposed to have stood at 38°, as is shown by the new scale. All that is required to reset the instrument is to pull up the alarm weight, w, in the usual manner, and the apparatus will appear once more as in *fig. 1*, and be ready for future observations, according to the fancy of the observer.—X., Surrey.

HEATING A SMALL PROPAGATING-HOUSE.

Will you inform me as to the best manner of making a small tank for propagating purposes, as cheaply as possible? I have a small greenhouse, 15 feet by 10 feet, with a door leading into a potting-shed. The front shelf is 2 feet wide. I have enclosed a portion, 5 feet in length, with glass, and have had made a small tin boiler, placed in the shed, with pipes 1 inch in diameter, placed horizontally, running into that enclosed portion of 5 feet. These I have covered with cinder ashes, and I find I obtain a nice bottom heat of 80°, but only just where the small pipes run. Now, would it do to make a small wooden or brick tank half filled with water, covered with slate, on which the pots could rest, and through which the tin flow and return pipes could pass round inside?—ARDENT LOVER OF FLOWERS.

[Your cheapest plan would be to add two more of your one-inch pipes in the enclosed space. Make the bottom waterproof with Portland cement, place house slates or galvanised iron over your pipes, and then ashes for plunging in. Leave a few holes with tubes in the covering, to let up heat when you want it, and through them you can let air or moisture down at pleasure. Your two one-inch pipes, unless very hot, and that always wastes fuel, will not give you enough of continuous heat, either for your present arrangement or if you preferred a tank. The piping recommended would also be necessary for a tank; a wooden one would be cheapest. It should be made of 1½ to 2-inch wood; 3 inches would be deep enough; slate would be the best covering. At that depth you would want a frame with glass to set over it. Your first plan is the simplest.]

CULTURE OF VINES IN POTS.

(Continued from page 224.)

THE nine-inch pots being full of roots, pot the canes without loss of time into 15-inch pots, which will be large enough for the majority, but any that are very strong may have 18-inch pots, and those of small growth 12-inch pots, for though all may have been put in at the same time, and treated alike, the canes will have different degrees of strength. The pots should have one large hole at the bottom, and three, each an inch in diameter, in the sides, the bottom of these holes being slightly above that of the pot. A large crock being laid over the hole at the bottom, place 2 inches of rather large crocks over it, and above these an inch of smaller ones, but not very small, and on these again an inch of the sods broken into pieces with the hand, and the soil knocked out of them. The pots are now ready for the Vines. The soil being chopped with a spade, and made somewhat fine, mix with every peck one quart each of half-inch bones (boiled), and pieces of charcoal, from the size of a hazel nut to that of a walnut. Mix them well, and in this compost pot the Vines, pressing it firmly between the ball and the sides of the pot. The soil should not be wet, nor yet dry, but between the two extremes, and it should have been kept under cover for some time to air. After potting, if there is the convenience, a bed of leaves and dung, or tan, will be of advantage in inducing the roots to reach the sides of the pot quickly, and its temperature should be from 70° to 75°. Upon no consideration must the Vines, for the sake of bottom heat, be placed in a situation shaded by other climbers. As climbers Vines require the first place beneath the glass, and they should be from 9 inches to a foot from it, and a foot apart, or better 18 inches. The pots may remain plunged to the rim until the roots reach the sides, when the pots should be raised, and remain plunged no deeper than a couple of inches above the side holes. Through these roots will come, and passing into the fermenting material give, without applying liquid manure, to the canes a strength more than equal to that obtained when the pots are on a hard bottom and liquid manure freely given. If the pots are slightly plunged in a border, weak liquid manure may be afforded twice a-week, but if on a hard floor or bottom it should be sup-

plied at every alternate watering after the roots show at the sides of the pot, as they will do in three weeks after potting. When the pots are on a hard bottom there is an advantage, inasmuch as all the roots are made within the pots, whilst when plunged many of the best roots are in the bed, and these on the removal of the pots are lost, and unless the pots are plunged in a mild hotbed on forcing, the Vines show the loss by breaking weakly. If there is the convenience to form a hotbed in which to plunge the pots before forcing, allow the Vines to root through, as they then require less feeding to become strong, and I do not like to be under the necessity of giving strong doses of liquid manure in order to have strong canes, for it makes the soil heavy. On the other hand, if there is no alternative but to set the pots on a hard bottom, be content with giving weak applications of liquid manure at every alternate watering, and what is lost in the thickness of the canes will be gained in their certainty of fruiting.

From the canes being trained to the roof they will throw out laterals near the bottom, but trained to a stake erect few if any will appear at the bottom. If not trained to the roof, incline the canes after the last potting as nearly to a horizontal position as convenient, remembering that the more erect the canes are, the more their vigour will be spent in the upper part, and that is the part to be cut away, and along with it the best eye. Laterals, however, will show, and I wish to have them as low upon the canes as possible, and for that reason train them to the roof or inclined from the perpendicular as much as circumstances will permit, for I have a great aversion to a cane double the strength at 8 feet that it is at 2 feet from the pot. Encourage the laterals near the bottom, and do not stop them until they have made three leaves, then take out their points; but stop those above 5 feet from the pot at the first leaf, removing the tendrils when first seen, to avoid the strength of the cane being wasted. After the laterals have been stopped once, allow them to make six leaves, taking out the point of the cane when it has grown 9 feet, and every time the lateral from the side of the upper eye makes a leaf take out the point of the shoot above that. If the uppermost eye break, as it most likely will, and the next two or three below it, stop all at the first leaf, and this will cause the vigour of the Vine to be thrown into the laterals below, and these being allowed to grow, and hang loosely so as not to shade the first leaves along the cane, this will be of nearly equal strength from top to bottom.

When the vigour of the Vine seems to have spent itself, which will be known by the laterals giving up growth, and the wood of the cane assuming a russet appearance, reduce the laterals to six leaves, and if they do not break within ten days reduce them still further to one joint from the point whence they take their rise; but if they push strongly stop them at the first fresh leaf, and instead of reducing them all at once, do so by degrees until they be all brought in to one joint, and at this keep them until the wood is brown and hard; then with a sharp knife remove them close to the cane. This must not be done until the wood is ripe, and the roots in the border cut off close to the pots, and the soil in these sparingly supplied with water; for if it be moist, and the root-action powerful, to take away the laterals is only to cause some of the principal eyes to break, and fruit may be showing at a time when the Vines are required to go to rest.

From the time of potting the eyes to that of the wood becoming brown, the soil should never be allowed to become so dry as to cause the leaves to flag, but be kept well supplied with water; but this should not be given until the soil shows signs of dryness, which, after the pots become full of roots, will be every day, and very often twice a-day water will be required to keep the leaves from flagging. After the canes have become as thick as the little finger, and the wood is turning brown, leave off the applications of liquid manure, and only water when the soil is dry. Up to this time weak liquid manure may be given at every alternate watering after the pots have become full of roots. Discontinue watering after the leaves turn yellow, but do not leave off all at once, but from once a-day gradually reduce the frequency of watering to once or twice a-week, which will be sufficient after the leaves change colour, and then the Vines may be taken out of the house and placed close to a south wall with the pots on boards, there they will soon go to rest.

The house, until the wood become brown, should be sprinkled morning and evening with water, and the paths, walls, &c., must be kept moist, and if there are evaporating-troughs these are to be kept full of liquid manure. The foliage should be syringed every evening to prevent red spider attacking the

principal leaves, for unless these are kept free of this pest the eyes at their axils will not be properly matured. The moisture and the syringing should be continued until the wood is becoming brown and hard, when both are to be gradually discontinued.

Air is to be given freely, fully, and early, as from a deficiency of air and light the canes will be long-jointed. Give air then early, and particularly whilst growth is being made, for if ever the wood become long-jointed, no amount of air and light afterwards will remedy the evil. It must, however, be given without lowering the temperature, and the amount should be reduced before this fall much, so as to afford a rise of a few degrees after the air is taken off for the day. A little may be left on all night, but currents of cold air should at all times be avoided; and when the thermometer shows less heat a short time after air is given than before, it is an indication that too much has been admitted. Either it was given too late, or it was not needed. Air day and night should be given after the ripening of the wood begins, and it should be more freely admitted than when the canes are growing.

The temperature up to the time of the wood turning brown, and the completion of the growth, should be 65° at night, or rather in the morning, from 70° to 75° at mid-day without sun, from 75° to 80° on cloudy days with clear intervals, and from 85° to 90° on clear days. After the wood has turned brown, and the growth is on the decline, the temperature should be 5° lower at night, and this should be rather from leaving more air on than from keeping the heating surface cooler. By day the same temperature should be maintained, for hot days and comparatively cold nights favour the thorough ripening of the wood.

The eyes being inserted during the first week in January, and treated as above described, the Vines will be ready for their final shift in April, and by the end of August the wood will be of the thickness of the little finger, brown, and hard. They may then be placed close to a south wall, where the leaves will soon fall, when the canes are to be cut-in to 6 feet. If the eyes are not inserted until the first week in February, and grown on as already mentioned, the canes will not be strong enough for their final shift until May, and will not have the wood brown and hard until September. In this case they should not be taken out of the house, but kept in it, trained near the glass, and when the leaf falls they should be pruned. The first description of canes will be eligible for forcing in the November and December following, in order to yield fruit in April and May, whilst those of the latter description should not be started before the days begin to lengthen.—G. ABBEY.

(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

THE operation of surface-stirring amongst advancing crops must be persevered in. *Beans*, earth-up growing crops. *Broccoli*, sow the Purple Sprouting and Lee's New Early White Sprouting. *Cabbage*, sow for the main autumn crop the Enfield Market and the Battersea. *Capsicums*, pot-off as soon as they are fit. *Cauliflowers*, stir the soil round those under hand-lights, and earth them up. Sow the Frogmore for an autumn crop. *Celery*, prick-out the early crop. *Cucumbers*, earth-up during dry weather, and give air freely, preserving the heat by fresh linings if necessary. *Kidney Beans*, put in a small breadth of the Dun-coloured or Fulmer's on a warm, dry, sheltered border, and plant a quantity in small pots, to be raised in a cold frame, and planted out as soon as all danger of frost is over. *Potatoes*, the main crop may now be planted. *Spinach*, sow small crops of the Round in drills, but little at a time, as it soon runs to seed. *Tomatoes*, these should now be potted off. *Sea-kale*, see that the ground for this, *Rhubarb*, and *Asparagus*, is in readiness to be planted soon. These require a deep rich soil, which should be trenched 2 feet deep, plenty of rotten manure being well incorporated with the bottom spit; indeed, the ground can hardly be made too rich, particularly for *Asparagus*. This, when planted in well-prepared soil, is very productive, yielding a large number of fine strong shoots every season; whereas if planted on poor shallow soils no after-attention in the way of surface-manuring or watering with liquid manure will serve to secure first-rate heads, and it is so much esteemed in most families that the trouble and expense necessary to properly prepare the ground should not be complained of, particularly as beds rightly made

last for many years. Sow seeds of *herbs* and other vegetables that may have been omitted during former weeks. Remove all litter and weeds. Earth-up early crops, strewing a little soot about them to prevent the attacks of slugs.

FRUIT GARDEN.

The season for disbudding fruit trees is fast approaching. The importance of this operation is generally acknowledged, and upon the proper performance mainly depends the production of a suitable quantity of healthy clean wood of a fitting quality. Take, for instance, a single branch of a Peach tree when it first starts in the spring. If in a healthy fruit-bearing condition it will throw out probably fifty wood shoots, and perhaps a greater number of blossoms; if the whole of these were left on it is probable that two or three of the leading shoots would, by drawing all the nourishment to themselves, become rank and overluxuriant, whilst the remainder would be weak and worthless; the fruit, too, would be small, ill-flavoured, and a great portion of it abortive: hence the necessity of a systematic course of disbudding, by which we mean the entire removal of every fruit and every shoot that is not required to be brought to perfection, and if this system of disbudding be rightly carried out through the whole of the tree, it will induce that proper equilibrium of the sap by which the trees are prevented from growing into overluxuriant wood. Every tree in a good soil is capable of producing and bringing to perfection that quantity of wood and numbers of fruit which are proportionate to its age and the healthy condition of its roots: consequently, if by carefully thinning the fruit and removing superfluous wood, the sap is directed to all parts of the tree at nearly equal distances, the result will be that each individual shoot will have the power of drawing to itself that amount of sap which is necessary to its healthy support. In order to have fine trees it is necessary to begin with them from the time of planting, and the selection should always be made with care. Those only are worth planting which are well filled with clean healthy wood from the centre to the circumference; if they are not so, they should be closely headed back until they have formed good heads. Supposing the tree to be operated upon to possess from eight to twelve branches of young wood springing from the centre, the object proposed to be attained is that the branches may not elongate themselves to a greater circumference, but produce healthy branches from the centre; and this is attained by removing, at four different thinnings, every shoot but the terminal one and the one nearest the base on the upper side of the shoot. If this were done all at once the trees would be injured, but from being done at intervals, the shoots to be left acquire sufficient strength to absorb all the nourishment the tree can give, and the sap being thus equally distributed, no shoot will be able to take to itself an undue preponderance. We have entered into this subject more at length on account of the great show of blossom on fruit trees this season.

FLOWER GARDEN.

Prosecute vigorously, till finished, improvements of every description. Bring speedily to a close the digging and raking of borders, sowing grass seeds, laying down turf, and the planting of evergreen and deciduous shrubs. Make new plantations of Russian double blue and white Violets. For this purpose select the young runners, but give the preference to seedlings of the Russian Violet; they make stronger plants, and flower more abundantly than offsets.

GREENHOUSE AND CONSERVATORY.

Now that the new growth has commenced, abundance of air and light should accompany it, if short-jointed wood and healthy foliage are to be obtained. To allow sufficient air to greenhouse plants, with the keen piercing winds we are now experiencing, requires some management, for with a bright sun air must be supplied freely. Hardwooded plants, whose pots are full of roots, and which it is not convenient to repot just at present, should be carefully attended to with water, for if allowed to flag, many plants, particularly such as have fine hair-like roots, scarcely ever recover. The growth of plants intended to bloom next autumn and winter will require attention; if numbers are grown they will be easier managed if placed by themselves. The early-started Chinese Azaleas will be making growth, which should be encouraged by frequent syringing and a genial temperature of about 50° by night. Straggling shoots should be at once removed; and to obtain perfect flowering specimens, the growth should be uniform to enable the wood to ripen at the same time. Some of the earliest-bloomed Camellias may be added, and occupy the shady parts of the house.

Epacris is another useful family for winter-flowering, and will stand a moderate forcing. To the above may be added various plants, which, if required to bloom at Christmas, should be encouraged to make an early growth preparatory to an early ripening and rest. The potting such of the above as require shifting is best done after the growth has become somewhat matured. Prime-in Erica hyemalis and other winter-blooming Heaths as they go out of flower, to be in order for potting. Fuchsias will be benefited by the application of clear liquid manure. Very liberal shifts will be necessary at this period, more especially with those intended for very large specimens. Cinerarias for late blooming should be shifted. See that the twiners which are starting into growth are kept free from insects, as these, if allowed to get a footing upon the young tender shoots, will soon do a vast amount of mischief. Mandevilla suavcolens is one of the most beautiful and useful of twiners; but it is subject to the attacks of green fly and thrips when commencing its growth in a cool house, and unless these be eradicated, they will greatly retard its growth and prevent its blooming early. It almost rivals the lovely Stephanotis itself in beauty, and is not much inferior to it in fragrance, and it grows and blooms as freely in the conservatory as the Stephanotis does in the stove. It requires, however, to be kept dry at the root during winter, and should not be encouraged to start into growth early in spring. In a close-roofed conservatory it will be one mass of bloom from the middle of July till November.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Our ground is still too wet for much seed-sowing, except it be Peas and Beans. If it do not dry soon, we will sow lots of vegetables under a little protection, and prick off afterwards. The Peas covered with ashes, &c., were soon found out by an army of pheasants, and we had to cover them thickly with branches, and then will net if that will not do. On Tuesday we planted out a lot of Peas and Broad Beans several inches in height, working in the nice friable soil about the roots, sticking as we went along, and placing some laurel twigs on each side of the row as a protection. If we had known there would be so much snow on Wednesday, and such a frost on Thursday morning, we would have delayed the operation a little longer; but the young plants have sustained no harm, and we expect will succeed well. The pheasants have not meddled with them as yet, and they seldom do when well-established. Without any protection they will of a morning before one is out clear whole rows of those only lately sown. They like the Peas best just when swelled enough to enable the radicle to protrude, as then, no doubt, they are very sweet. Except the regular looking-after of other vegetables to keep all right, and providing for successions of Kidney Beans, Rhubarb, Sea-kale, Mushrooms, &c., there has been little doing in the kitchen garden.

Contrary to our wish, we have taken up some more Sea-kale, as the cold weather has given a check to that out of doors, protected merely by pots and a little litter. It is, however, showing freely, and, therefore, we will not take up much. In addition to what is under pots, we will shut up a piece with banks of litter a foot in depth on each side, and on these place hurdles thatched with evergreens, and then covered with litter, to keep out the light. The hurdles will be easily moved so as to permit of the heads being readily seen and examined, and out when 6 or 7 inches long. It would be of little use placing hot litter about the roots out of doors now, even if we had it. Boxes would be better than the hurdles, as they would be cleaner. The litter placed over the hurdles must be clean, or the heads of Sea-kale may be disfigured.

Gave plenty of air to Radishes, Lettuces, Cauliflowers, Potatoes, &c., in suitable weather, and in a dry day in the beginning of last week ran the hoe or fork through winter Onions, Spinach, and Cabbages, and raked the ground over Asparagus that had been dressed with rotten dung, burnt earth, ashes, &c. If we had a little saif we would have slightly whitened the ground, which serves to give the Asparagus a little encouragement when starting, and also keeps down weeds. Prepared some ground for Asparagus, Sea-kale, Rhubarb, Artichokes (Globe and Jerusalem), and got forward as much as our stiff moist soil would permit.

Dressed the outside of the frames intended for Cucumbers with coal tar, as described last week. Run the tar on the

bottom of the frame outside, and let it go down a little in the bed and lining. Made the soil firm against the sides of the box all round inside, to prevent the slightest fumes from the tar entering, for nothing will stand that with impunity. We hope this will keep rats and mice at a distance. Planted again with strong plants. This affords one of the instances of the disappointments that gardeners often experience from hosts of enemies, notwithstanding all suitable precautions.

FRUIT DEPARTMENT.

Pruned and nailed in favourable weather. Forgot to notice last week that Beech with the leaves on makes a good protection for wall trees if put on thinly. As then stated, canvas is the best where it can be obtained. The orchard-house trees are standing very well; those in the first house are in full bloom at the back, and it is shut up earlier to guard against cold nights. In this we have an old iron stove, which we can light on an emergency. This is placed more for convenience of position than suitability as to draught, and yet a little fire in it does wonders. Contrary to all our experience and knowledge in such matters, the outlet-pipe goes horizontally 7 or 8 feet before rising upright outside the house, and this gives a little trouble when the wind is from the north. In any other direction the draught is good enough, and a great heat is thrown out in the large place from little fuel. Were such houses our own, we would have a good brick stove in each, a horizontal pipe a foot or 18 inches long, and then an upright pipe free of the glass. That it might not be in the way against the back wall, we would place it in the middle of the house, partly sunk, with an open space all round it, and take the upright funnel through the roof, substituting a stout square of galvanised iron with a hole in it, for the usual square of glass. As stated last week, for merely keeping frost out from rather small places, but roomy, there is no other plan so economical in first cost, or that will use less fuel afterwards to produce the desired result, provided the draught is duly regulated by a close-fitting ashpit door. Most people run away with the idea that for any purpose, be the house never so small, heating by hot water is the most economical, as well as the best. We own at once that for all places it is the best mode for diffusing something like an equality of heat; but we contend that to heat a small single house by hot water involves the loss of a good deal of heat up the chimney, however carefully the damper and the ashpit door may be attended to.

Heating by Gas.—Besides what appears in answers to correspondents, many inquiries reach us as to the practicability, utility, and economy of the plan. In every case we reply, we have had little or no practical experience, but we have paid considerable attention to the subject, and seen what we could of the plan when in operation. The result is the conviction that such a mode of heating is chiefly applicable to small places, such as the neat little conservatories that in suburban districts often abut against the folding-door window of a sitting or drawing-room. These may easily be heated by gas-burners passing through tubes, or first heating a small boiler to which pipes are attached. We recollect of a neat little house thus heated that abutted against the folding-door window of the sitting-room. The kitchen, &c., was beneath this room. In a corner in the kitchen, not far from the ceiling, a block-tin boiler was fixed, about the size of a teakettle, but hollowed-up or concave at the bottom. A strong gas-burner was placed beneath it, and a tin cover when the gas was lighted went over all, with means of regulating draught when the pipes became hot. The pipes were also of block-tin $1\frac{1}{2}$ inch in diameter. Two of these were sufficient to keep out frost, except in severe nights, and then a late fire was put on in the parlour and one of the doors left open. The place altogether was about 7 feet wide, 11 feet long, and 10 feet in height. This simple apparatus would have done very well with soldered joints, if it had been kept constantly at work, but though painted the metal rusted inside when not in use, whether the water was left in or taken out. The proprietor told us that ultimately when the pipes wore out he should use two or three one-inch stout iron pipes, and most likely do away with the boiler, and allow the heat from the burner to go at once through the pipes, and then out of the house by means of a small gas-pipe. The place could have been comfortably heated from a close kitchen boiler, but the head of the kitchen would not hear of it, and the master considered he had better not try to conquer her prejudices. Success by all such modes will be very uncertain, unless the manager of the kitchen fire be made a firm ally, and then all will be plain sailing.

Again, there are many who have a greenhouse close to or

near their house, heated sufficiently to keep the plants all right, but who want a little place warmer, shut in by glass, for propagating, seed-sowing, &c. Now, in such a case, a jet of gas, either with or without a boiler, will often do all that is wanted. One of our correspondents to-day has set off a place 2 feet wide and 5 feet long for such a purpose, and has had a small boiler made and two-inch pipes connected with it, to heat that little place, shut in with glass for this purpose. If gas could have been obtained it might have saved a good deal of labour, and the waste of fuel that is complained about in heating such a little place separately. For such a purpose, were we near enough to a kitchen boiler whence once a-day, if necessary, a pailful or two of water not far from the boiling point could be taken, we would have a stout wooden vessel made of the necessary length and width, and about 3 inches deep, covered with slate or sheet iron, and that with sand or ashes for the pots. We would have a funnel placed at the top of this vessel, and a tap or plug at the bottom, the latter to remove the cold water, and the other to put in the hot water, which would seldom require to be oftener done than once a-day, and in mild weather not so often. In such a wooden box, with no outlet for the heat, except to the pots, and that, too, covered, the heat is retained a long time, and under such circumstances it can be regulated to the greatest nicety, by taking in some cases part of the cooled water away, and everything would be as thoroughly under control as if gas or hot water were used. Of course, such a plan would only be applicable to small places. For nice Fern-cases, plant-cases, and propagating-boxes, in parlour windows, there is no more simple plan for heating them, and perfect cleanliness may be secured if ordinary care be used.

There are inquiries as to how to keep Peach trees in unheated houses longest in bloom. Our first reply is, Keep them as backward and in as dry an atmosphere as possible. Our next would be, If you let them come early, by early shutting up, &c., then you should try some simple plan to prevent them suffering from cold. We cannot agree with "W." that a lot of Peach trees in full bloom is the most beautiful of all sights; but we do allow it is a very beautiful one, and so is an Apple tree in full bloom, and hence the fruit-grower has a great advantage over the mere flower-grower, as he has the beauty and the utility together.

Regulated and stopped Vines, and attended to other houses much as detailed in previous weeks. Have been obliged to move Strawberry plants from a vinery where they were becoming too much shaded. They neither set nor swell well without plenty of light, and if they do swell in plenty of heat, and a little shaded, the flavour is never anything to boast of. In full light Keens' will be as firm and nearly as black as the Black Prince. In shade they come flabby and too pale red in colour.

ORNAMENTAL DEPARTMENT.

Went on potting, repotting, sowing, pricking-off, and giving general attention to what needed it, as detailed last week, and of which we shall have more to say next week. See Mr. Keane's directions last week about Orchids, &c.—R. F.

TRADE CATALOGUES RECEIVED.

James Service, Corberry Hill, Maxwelltown, Dumfries.—*Descriptive Catalogue of Florists' Flowers, &c.*
J. C. Padman, Providence Nursery, Boston Spa, Tadcaster.—*Catalogue of Dahlias, Hollyhocks, and Miscellaneous Bedding Plants.*

COVENT GARDEN MARKET.—MARCH 24.

THERE has been scarcely any alteration worth notice, the demand and supply being about balanced. There is no difference in the continental imports. Pears and Apples for dessert are limited to those varieties lately mentioned; and forced Strawberries are coming in very good for so early in the season. We hear great complaints of the appearance of the outdoor ones, many of the market gardeners having ploughed them all up, as they showed no trusses. We should be glad to know if this is at all general.

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½	sieve	2	6	to 4 0
Apricots.....	doz.	0	0	0	0
Cherries.....	lb.	0	0	0	0
Chestnuts.....	bush.	8	0	16	0
Currants, Red	½	sieve	0	0	0
Black.....	doz.	0	0	0	0
Figs.....	doz.	0	0	0	0
Filberts.....	lb.	0	0	0	0
Cobs.....	100	lbs.	0	16	0
Gooseberries..	½	sieve	0	0	0
Grapes, Hothouse.	lb.	15	0	25	0
Lemons.....	100	6	0	10	0
Melons.....	each	3	0	5	0
Nectarines.....	doz.	0	0	0	0
Oranges.....	100	4	0	10	0
Peaches.....	doz.	0	0	0	0
Pears (kitchen)	doz.	4	0	8	0
dessert.....	doz.	6	0	12	0
Pine Apples.....	lb.	8	0	12	0
Plums.....	½	sieve	0	0	0
Quinces.....	½	sieve	0	0	0
Raspberries.....	lb.	0	0	0	0
Strawberries.....	oz.	2	0	5	0
Walnuts.....	bush.	14	0	20	0

VEGETABLES.

	a. d.	s. d.		a. d.	s. d.
Artichokes.....	each	0	6	to 0	0
Asparagus....	bundle	6	0	12	0
Beans, Broad..	bushel	0	0	0	0
Kidney.....	100	3	0	4	0
Beet, Red.....	doz.	2	0	3	0
Broccoli.....	bundle	1	6	2	0
Bruis. Sprouts.	½	sieve	2	0	3
Cabbage.....	doz.	2	0	3	0
Capsicums.....	100	0	0	0	0
Carrots.....	bunch	0	4	0	8
Cauliflower...	doz.	2	0	6	0
Celery.....	bundle	2	0	3	0
Cucumbers.....	each	1	0	3	0
pickling.....	doz.	0	0	0	0
Endive.....	doz.	2	0	0	0
Fennel.....	bunch	0	3	0	0
Garlic.....	lb.	2	0	0	0
Herbs.....	bunch	0	3	0	0
Horseradish..	bundle	2	6	4	0
Leeks.....	bunch	0	3	to 0	0
Lettuce.....	per doz.	2	0	4	0
Mushrooms....	pottle	2	0	3	0
Minstd.&Cress,	punctet	0	2	0	0
Onions.....	bushel	3	0	5	0
Parsley.....	sieve	2	0	3	0
Parsnips.....	doz.	0	9	1	6
Peas.....	quart	12	0	20	0
Potatoes.....	bushel	2	6	4	0
Kidney.....	do.	3	0	4	0
Radishes.....	doz. hands	0	6	1	0
Rhubarb.....	bundle	0	6	1	0
Savoy.....	doz.	2	0	3	0
Sea-kale.....	basket	2	0	3	0
Shallots.....	lb.	0	8	0	0
Spinach.....	bushel	5	0	0	0
Tomatoes.....	½	sieve	0	0	0
Turnips.....	bunch	0	4	0	6
Vegetable Marrows	dz.	0	0	0	0

TO CORRESPONDENTS.

EVERLASTINGS (Mrs. W.).—We think you have seen *Helichrysum orientale*, the Immortelle of the French, which is dyed of various colours. Many species and varieties, however, are treated in a similar manner.

BALA-PHOOL (B. Godbold).—Bala is the Hindoostanee name for the Hibiscus tortuosus of Roxburgh. Phool, in the same language, is a flower. Mats and small cordage are made from the fibres of the bark.

BED IN ROYAL HORTICULTURAL SOCIETY'S GARDEN (A. F. S.).—The plant you describe we believe to be *Coleus Verschaffeltii*; the corresponding bed on the opposite side was *Amaranthus melancholicus ruber*, edged with *Centaurea candidissima*.

WINDOW GARDENING (C.).—If you send ten postage stamps with your address, and order "Window-Gardening for the Many," you will have it sent to you free by post from our office. After reading that, if you need further information we shall readily give it.

CRANSTON'S GREENHOUSES.—"A. M." wishes to know what rolling blinds, or sunshades, are most suitable for these; and at what distance they should be from the glass so as not to interrupt the ventilation.

ORCHIDS FOR COOL GREENHOUSE (An Old Subscriber).—The twelve Orchids you name for a cool greenhouse, with an average temperature of from 50° to 60°, with a rise from sun heat—namely, *Laelia anceps*, *Cypripedium insigne*, *C. barbatum*, *Maxillaria Harrisonii*, *M. grammifolia*, *Dendrobium aobile*, *D. Kingianum*, *Cattleya Mossiae superba*, *C. Skinneri*, *C. crispata*, *C. Forbesii*, and *Lycaste species* would do; but the following we consider a better selection:—*Lycaste Skinneri*, *Odontoglossum grande*, *Aerides odoratum superbum*, *Brassia vertucosa major*, *Calanthe vestita*, *Cattleya Mossiae superba*, *C. Skinneri*, *Coleogyne cristata*, *Cypripedium barbatum superbum*, *C. insigne*, *Dendrobium nobile*, *Phajás grandiflorus*.

HEATING A CHURCH (F. F.).—We have most faith in your proposed plan of heating the church by a saddleback or other boiler. The objections as to excavating, &c., do not apply where there is a basement storey. In some such cases, when the lower storey was used as a schoolroom, a good-sized furnace boiler—that is, a stove with water all round, without any brickwork, did for heating the school and the church above. We have known many churches made very comfortable in winter by lighting the gas a couple of hours before service. We have no doubt that the church could be heated by gas and a boiler as you propose; but then, as we have only seen small places heated by gas, we would not at present be inclined to think that we were consulting the economical in using gas to heat a boiler 5 feet long, about 8½ or 9 inches in diameter, and supplied with twenty-seven tubes of copper inside, 1 inch in diameter each, and the attending piping. The cap with the small pipe to allow the gas to escape are all very well, and the form of the boiler I reversed, we consider also to be good, being simply that of the letter L reversed, with the short leg over the burners, and the long leg horizontal; but with our present lights we rather think the consumption of gas to heat that boiler and about 1200 feet of three-inch piping would be such as to make some church officers stare. Very likely, however, you may know more of heating large places by gas than we do; all we know is, that the simplest boilers generally do their work best. We shall be glad to know the expense of such heating.

POTTING CAMELLIAS (Jas. Keay).—In potting those received from Germany with turf, the soil or peat in which they grow may be picked away from amongst the roots, being careful not to injure them; but beyond picking away the loose soil and loosening the sides of the ball, the roots should not be further disturbed, for nothing is more brittle and sooner injured than Camellia roots.

DESTROYING MOSS ON A LAWN (H. W. W.).—Wood ashes and gypsum, because they promote the growth of grass, are good destroyers of moss. It is mainly due to the poorness of the ground. Apply a dressing of rich compost, say one-half well rotted manure, and the other half good rich soil, well mixed, first scratching the surface with an iron rake, which will remove much of the moss. Use enough to cover the ground from a quarter to half an inch deep. Now is a good time to apply it. About the middle of April rake the ground again with an iron rake backwards and forwards, and this will again remove much of the moss, also any sticks or stones; and then, on the first prospect of rain, sow over the lawn the following:—*Festuca duriuscula*, 2 lbs.; *Festuca tenuifolia*, 1½ lbs.; *Poa nemoralis*, 2 lbs.; *Cynosurus*, 4 lbs.; *Trifolium minus*, 2 lbs.; and *Trifolium repens*, 4 lbs. in mixture for an acre. After sowing, gently rake over the ground, and roll immediately. The ground should be dug at the time of sowing, and if rain fall on the following day, or soon afterwards, the seeds will soon vegetate. The lawn will please before autumn. If you object to the appearance, which will not be long barren-looking, though it will be so at first, you may give a dressing of guano in the first showery weather in May, and again in July, and this will promote the growth of the grass and the destruction of the moss.

GARDEN PLAN (Vic).—There is nothing in your plan to induce us to incur the expense of engraving it, and especially as no planting is stated.

FIXED OR SLIDING SASHES (W. E. J.).—If you have no openings in the back wall you had better have movable sashes 1 foot wide at the top of the roof. For a stove, four of these 18 inches long and a foot wide would do. The rest of the roof could then be fixed. We are presuming that you could have also ventilation in the front wall. The chief advantage of a fixed roof is its economy, otherwise movable roofs are better, especially if you should wish to employ the house for different purposes.

VINES DECLINING (J. Down).—If troubled as some of us have been with very dry summers, we think it very likely the roots of your Vines have gone down too deep. If so, most likely the covering the border with fermenting material, as you have done, and a little more fire heat in the autumn, will make the Vines again vigorous in another year without lifting the roots, though that eventually may have to be done. Perhaps your heavy crops may have been too much for the Vines, and a lighter crop may restore the lost balance. We have several times noticed the effects you detail from very heavy cropping.

HEATING VARIOUS HOUSES BY ONE BOILER (Patelin).—1st, It would have been your best plan to have had the boiler in the middle, between the two houses, and then you might have heated both together or separately. 2nd, By the plan proposed you cannot heat one house without heating the other. 3rd, You cannot have the bottom heat for one house or for both on the plan you propose, as your return-pipe, dipping into the water, is much below the bottom of the boiler, and no pipes act well if below the bottom of the boiler. 4th, With your stop-valve at z, you may heat the bottom beds of one or both houses, but only provided that the lowest of the pipes are not lower than half the height of the boiler. They would do if not lower than the flange at the bottom of the boiler, but they would do better if the return-pipes in the houses were not lower than the top of the boiler. 5th, In section x, called present state, the return-pipe is shown a long way below the level of the boiler. Even with air-pipes we have seldom known such a plan to answer well. 6th, Except this sinking of the pipes, we have no fault to find with your proposed plan either for bottom heat for one or two houses. The stopping of the valves at z will send the heat into the bottom-heat pipes; but the less these bottom-heat pipes go below the level at x the better they will act. 7th, We do not know from your description whether it would not be possible to have your bottom-heat pipes on much the same level as the top-heat ones, which would be the best under the circumstances.

SOIL FOR PAMPAS GRASS (A. New Subscriber).—The Pampas Grass delights in a deep, rich, and moist soil. We knew some plants of it that would scarcely grow; they were taken up with good balls, the bottom of these loosened, the soil taken out to the depth of 18 inches for a yard all round, and replaced with turfy loam, well rotted manure, and leaf mould, in equal parts, well mixed. In summer a good drenching of liquid manure was given in dry periods, and the result was that they grew amazingly. We recommend a similar course to be pursued with every Pampas Grass that has been planted more than three or four years. The difference in the growth of the plants is due to the richness or poorness of the ground, and their being supplied with water or allowed to suffer from drought.

COCOA-NUT FIBRE (Subscriber, N. B.).—The fibre of the cocoa-nut is not suitable for any kind of plant. It is very different from the dust which is the waste of the cocoa fibre mat, brush, and rope maker. The refuse of the husk is the kind eligible for compost for plants, and it is like mahogany sawdust. In its fresh state it is one of the best of composts for Orchids, and may be used for them in place of brown fibry peat, to which it is equal, if not superior. In its fresh state it is excellent for mulching plants in pots or tubs, and also for surfacing flower-beds. For potting plants it is best laid up along with other soil, or by itself, for a couple of years to decompose, and then it becomes closer in texture, and resembles mould. In this state almost anything will grow in it. It is used in place of peat for Ferns, for all plants that require peat soil, and for softwooded plants in place of leaf soil.

CYPERUS ALTERNIFOLIUS VARIETAS CULTURE (Dull Fellow).—By semi-aquatic is meant that it requires abundance of water during the growing season, and should then be kept with the soil wet, or the pot set in a saucer full of water. We have not found it do well in a warm greenhouse, though it may do so with others who treat it differently. With us it requires a winter temperature of not less than 50° at night, but does better in one of 55°. In winter, or when not growing, the soil should not be more than moist. We find that a compost of equal parts of sharp sand, peat, and loam, with an inch of sand at the top, suits it well. In rich soil the leaves become green, and in a greenhouse the plant dies. Unless kept wet at the root, and in a moist atmosphere, it scarcely grows, and is eaten off by red spider. The green-leaved species is a greenhouse plant, but the variegated form is more delicate than the original.

TOBACCO SEED.—I grew a hundredweight last summer, and some of the plants were 8 feet high. An old captain remarked it was much finer than in its native country. I should have no objection to send any correspondent a packet of the true seed of *Nicotiana tabacum* for twelve postage stamps. —THOMAS ELCOMBE, Gardener, Ribig Gardens, Near Carwen, North Wales.

MELON VEGETABLE MARROW (C. J. W.).—It was advertised by Messrs. Small, Colnbrook Nursery, Slough, Bucks.

PHALANOPSIS GRANDIFLORA LEAVES BECOMING SOFT (A Subscriber).—The cause of the leaves turning soft is the atmosphere not having been for some time sufficiently moist, and from the temperature being too low. Having no pseudo-bulbs, this class of Orchids will not bear the dry heat in which many others will thrive.

ANTS IN ORCHID-HOUSE (Idem).—If they have their nests in the floor or other parts of the house away from the plants, water them daily with ammoniacal liquor from the gas-works, and they will disappear in a few days; but if they are in the pots, or where ammoniacal liquor cannot be used, your best plan will be to mix together equal proportions of honey and arsenic, placing it thinly on saucers or pasteboard near their haunts.

JERUSALEM ANTICHOKE (Alfred Crowley).—We are unable to account for your Antichokes not boiling soft. We may help you by stating how we grow and cook them. The ground is dug deeply in autumn, and a dressing of half-rotten farmyard manure applied. In February, if the weather is mild, and the ground in good working order, or on the first favourable opportunity, drills are drawn from 4 to 6 inches deep, and 2 feet 6 inches apart. In these the roedinn-sized sets or tubers are planted at 1 foot apart, and the soil is drawn over them. When the stalks are 8 inches or so high, soil is drawn up to them as in earthing-up Potatoes; the after-treatment consists in keeping down weeds, which are not very troublesome in Jerusalem Antichoke plantations. A sheltered yet open situation is selected. In autumn, after the stalks are leafless, we dig up a portion to serve for a month's or six weeks' consumption, and store them away in moderately dry sand in a root-house, which is a shed at the back of the garden wall closed on all sides. Our soil being dry, we do not mind taking up more than enough to serve a month or so, and more to save trouble in taking up in frosty weather than for any other reason. When grown in strong ground they are best taken up in November or December, and stored away in sand; but if the ground is light they keep more plump in the ground. The tubers are cooked as follows:—They are well washed, pared, and put into the pan with the water boiling. They are boiled for half an hour, and are then strained, placed in a dish, and served with melted butter. In some cases they are fully cooked or boiled in twenty minutes. Ours are never hard, and we have grown them in eight different soils and localities.

DAHLIAS FOR EXHIBITION (J. Threlfall).—The following are first-rate, and nearly all of them are very constant:—Leah, deep golden yellow; No Plus Ultra, bronzy rose; Charlotte Durling, white ground, edged and tipped with rosy crimson; Lord Derby, rosy crimson; Andrew Dodds, dark maroon; Bob Bidley, red; Miss Henshaw, white; Anna Keynes; white, tipped with lilac rose; Willie Austin, buff; Criterion, delicate rose; Lilac Queen, lilac; and Beauty of Hilberton, purple.

ONE CHIMNEY FOR TWO GREENHOUSES (N. C.).—We have no doubt that the flies would do better if you had a separate chimney for each; at least, if there were a separate chimney for part of the height. A friend of ours had a greenhouse heated by a flue which communicated with the parlour chimney, perhaps some two yards above the fireplace, but it was a perfect nuisance, as when the fire was lighted the parlour was filled with smoke. The flue was carried up outside, so as to enter the chimney about 10 feet higher up, and there was then no more annoyance. But for having another chimney-pot, it would be better not to go into the house chimney at all. Many chimneys in a house, if they terminate on the same level, outside even, will swirl smoke into the next chimney, and it will come down and fill the room. We have no doubt that another chimney will remove your smoke nuisance—that is to say, if there is a good draught in your flues.

GNOWING PINE APPLES (Miss Hughes).—To learn the whole method of culture, purchase "The Pine-Apple Manual." You can have it free by post from our office for thirty-two postage stamps.

BOOK (F. E. L.).—Paxton's Botanical Dictionary is out of print.

GARDEN PLANS (A Gardener).—There is no such work as you inquire for. We are now preparing one for publication. You had better refer to the back volumes of this Journal. They contain many such plans.

GARDENERS' WAGES (H. S.).—We cannot annotate upon communications which have not appeared in our own columns. We are always ready to refute mis-statements wherever they appear.

EARTHWORMS—WOODLICE (R. M. T.).—Earthworms do no harm to flowers beyond drawing seedlings into their burrows. Toads will eat woodlice.

BRICK AND DRAINING-TILE MACHINE (Miss Lawford).—We do not know which is the best.

LEARNING GARDENING (J. W. B.).—You ought to obtain employment under some head-gardener at a gentleman's residence, and then try to obtain an engagement at some large public establishment. The only way for you to proceed that we can suggest, is for you to advertise for what you desire.

CYCLAMEN (S. S. L.).—The leaf sent belongs to *Cyclamen neapolitanum*, and to that variety cultivated as *Cyclamen africanum* (latifolium, robustum, and macrophyllum) superbum. The flowers are a shaded red, foliage large and handsome.—G. A.

NAMES OF PLANTS (A. A.).—We cannot undertake to name plants from leaves only. 2, *Gnaphalium tomentosum*; 3, *Cineraria maritima*; 5, *Centaurea ragusina*; 6, *Platycodon alcinorum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 24th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 18	29.291	29.251	52	34	44	42	N.E.	.04	Slight haze; overcast; rain at night.
Mon. . . 19	29.258	29.063	49	32	45	42	N.E.	.06	Lazy; cold with dusky haze; overcast; rain.
Tues. . . 20	29.412	29.321	44	30	45	43	N.E.	.22	Lazy; overcast; heavy rain at night.
Wed. . . 21	29.651	29.492	44	25	45	43	N.E.	.07	Slight snow; cold rain; frost at night.
Thurs. . . 22	29.867	29.722	47	29	43	43	N.	.02	Partially overcast and cold; white clouds; cloudy.
Fri. . . . 23	29.821	29.300	48	34	44	42	S.	.40	Overcast; partially overcast and cold; heavy rain at night.
Sat. . . . 24	29.134	29.056	51	40	44	44	S.	.08	Fine; overcast; showery; overcast, showery, and boisterous.
Mean..	29.491	29.319	47.85	32.00	44.28	42.71	....	0.80	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

NOTES FROM MY POULTRY JOURNAL.

EGGS IN WINTER.—While reading a late Number of THE JOURNAL OF HORTICULTURE I noticed the number of eggs given by three hens and five pullets during the winter months as instanced by a schoolboy, and your remarks thereon as regards feeding. Perchance a lady's experience in the same school may be equally interesting to your readers; and they may perhaps profit by what I tell them of my little yard when the dark wet days of winter come again, the time when the bright coral colour is so apt to leave the comb, and the clear, ringing, morning crow, that should make the hills echo, sounds like the croak of a raven.

Well, on the 10th of last December I turned out in my yard ten pullets and two hens—viz., six Spanish and six Light Brahmas, with a Black Spanish cockerel. My yard is a space 14 feet square, in which the hen-house, 4 feet square and 7 feet high, is built entirely of wood, placed upon joists with the ground taken away underneath, thus leaving a free space for air all round and under the house. Two small doors, slung on hinges at the top of the hen-house, are aids to ventilation, and a little latticework in the front gable end admits, day and night, pure air when the doors are closed. The floor of this hen-house is kept covered to the depth of an inch or two with ashes, which are sifted carefully every morning, thus rendering it clean, sweet, and free from vermin. The nests are separate boxes placed in each corner of the house. The yard has a border all round, 2 feet in width, planted with laurels and other evergreens, the ground beneath being covered with green turf renewed every fortnight, over which the fowls in fine weather love to walk and trim their plumage, cackling under cover of the shrubs. The yard is of fine gravel, with a high mound of the same in the centre for the fowls' scratching and eating. The fence enclosing the yard is of galvanised wire netting, 6 feet high, supported by iron posts, and has one door, with strong wooden posts and frame, for admission to the yard and hen-house. All is thus under lock and key.

Now for an incident which may serve as a warning to others. I had not roofed my yard over. My fowls came in the afternoon, and all-desirous of their comfort, I turned them into the yard, and fed them for the first time with my own hands. They were very quiet, and I left them, of course thinking they would naturally seek the shelter of the hen-house at roosting-time; but fancy my horror and affright when, in less than an hour, my maid came rushing to me with the news that my valuable fowls "were up in the trees like so many crows." Never shall I forget it. A fall of sleet had set in, and everything was wet and sloppy, but there was no help for it. What a hunt it was catching them! and oh! the looking up in the trees, with the snow and rain drizzling down my face, and the wind, and my ribbons; but at length we were rewarded, though the gardener had to climb the trees for the last two. When all were safely shut in the hen-house we soon threw wire netting over the yard, drawing it tight to the iron uprights, and binding it with wire.

After this all went well for a time, and eggs began to come in. I fed the fowls according to my usual régime, to which I shall allude by-and-by; but the weather became so miserable, raining day and night, and several of the birds had begun moulting heavily, and their consequent tenderness made them so susceptible of damp and cold, that my utmost care would not prevent their becoming sickly. That beautiful gloss, like the sun on a gipsy girl's hair, left the Spanish plumage, and the delicate pencilling of the Light Brahma faded away in wet and dirt. I saw plainly something must be done to help them. I at once determined to make them a nice dry day run, where they would have sufficient protection from rain, and wind, and wet ground, and yet enough of liberty. I therefore erected alongside the hen-house a wooden building, 10 feet long and 4 feet wide, thus running parallel with it; a door opening outside the henyard, so that I could pass in and out of this covered building without going into the yard. It is all of wood, with strong plate glass windows in an asphalted roof. The front, down to within a foot of the ground, is of galvanised wire netting, which, however, can be closed in by shutters during heavy rains and severe cold. This building communicates with the hen-house, and the floor is covered 6 inches deep with fine old mortar rubbish, the surface of which is raked and sifted daily. This was finished by February, and since the fowls have

had this retreat there has not been an ailment amongst them. They are all in the most perfect health and feather. They are as sleek as moles and eat like hunters, and up to the 10th of March, thus including the three winter months, have laid me 236 eggs. I do not boast of this as a great number; but when I remember that all the Brahmas moulted during the time, and the damp and cold of the season, I am satisfied with the result.

So much for housing them; but after all, as you say, there is a great deal in the mode of feeding. I like a generous diet for fowls as well as for children. In the morning I give my thirteen fowls one pint of Indian corn and barley mixed, a plate of boiled potatoes, and about six spoonfuls of Tyler's patent meal mixed with water. Then I place in the building a large cow cabbage, which is always entirely devoured by four o'clock in the afternoon, at which time they are fed again with the same quantity of mixed corn and Tyler's meal, and about 3 ozs. of barleymeal in paste. About every second day they are allowed 2 ozs. of meat saved from the table, and cut very fine. I always take great care that the birds have fresh spring water in clean garden saucers twice a-day, and I believe there is nothing more conducive to their health.

In keeping all live stock it should be, I think, our constant endeavour to subject them, as nearly as we can, to the great guiding laws of Nature. We should enable them to employ their instincts, such as running under cover in rain, and dusting themselves. We should give them imitation bowers, and food which assimilates as nearly as can be to that which they would gain in the wilds. Then their animal life would become pleasant to them, and their various functions natural and not matters of pain; and we should have our reward, if not in the return they made, at least in the observation of their perfect health and thorough enjoyment.

I am about rearing chickens, and if you care for my experience I may tell you by-and-by how I progress.—L. W.

RAILWAY CHARGES.

I SENT to the late Rochdale Show a basket containing a cock and hen Buff Cochins, tied with another basket containing a cock and hen Sebright; also two other baskets tied together, containing each a Game Bantam cock and hen. All the baskets were directed *via* Peterborough. In the freight-note of the Great Eastern Railway the charge for carriage to Rochdale stands thus:—

To Rochdale, one basket 12 lbs. each	s. d.
" " 30 lbs. "	.. .. . 2 0
	4 0

	6 0

On the 7th of February the baskets began to come back.

On the evening of that day arrived the Cochins; on the morning of the 8th came the Sebrights; in the afternoon one basket of the Game Bantams appeared; the fourth basket I received on the following morning. All the baskets were marked *via* Peterborough, yet two travelled by the London and North-Western Railway. For three I paid; for the fourth no charge was made. I have this day a demand sent up from our station for 3s. 6d. for a basket of birds from Rochdale, delivered on the 8th of February, being one of the four above mentioned. I paid on the return journey:—

For the basket of Cochins	s. d.
For the Sebrights	.. .. . 2 10
For the Game Bantams	.. .. . 3 6
For the other Game Bantams	.. .. . 1 6
	0 0

	7 10
I am now asked to pay	.. .. . 3 6

	11 4

Compare the charge to Rochdale—viz., 6s., with the charge back, 11s. 4d.; note that all but the basket of Cochins were within a few ounces of the same weight; add also 1s. 6d. telegram to Rochdale, to know why my birds were delayed; besides, damage to the birds in a delay of one day whilst confined in their baskets, the attendance of my man at nearly every train to meet the expected birds, and correspondence with the Secretary of the Rochdale Show, and I think I have just ground for asking an alteration of railway charges and arrangements in the matters of poultry carriage. I do not mean to pay the amount claimed; but I shall refer the claimants to the railway authorities at Rochdale, who may, if they like, try whether they have a remedy in the County Court against me.—GEORGE MANNING, Chapel House, Springfield, Essex.

PROFITABLE DUCK-BREEDING.

I VENTURE to offer a few words upon the rearing and management of Ducks—those general favourites in the farmyard and of the cottager. The Duck in particular is the country housewife's bird. Its hardiness renders it independent of that care which other fowls require, and it is one of the very best scrap-savells or scavengers. Potatoes and vegetables of all kinds well cooked, with a little sharps or pollard, constitute good food for the Duck, which swallows whatever you give to it in the shape of food, not refusing young frogs, toads, and garbage of all kinds, and that with a relish which is truly pleasing to witness. My favourites for years have been the Aylesbury and the Ronen; but during the last two years I have bred from a cross between the White Call Duck and the Aylesbury drake. The birds so produced are not quite so large as the Aylesbury, but they are much the hardier of the two, lay more eggs, and are better sitters and foragers. At five months old I have had them weighing from 5 to 5½ lbs. The produce from six Ducks the last two years was—Eggs, 932; young Ducks hatched, 281. In 1864:—Eggs laid, 260; eggs used for sitting, 137; young Ducks hatched, 131. In 1865:—Eggs laid, 672; eggs used for sitting, 202; young Ducks hatched, 146; and the market value by August was for all fit for sale, 5s. per pair. The eggs, when I have any for sale, are 3s. 6d. for fifteen. Your readers will no doubt remark the great difference in the number of eggs in 1864 and 1865. In 1864 the Ducks had their own way, and laid where they liked; but in 1865 they were deprived of their usual lying-places, in a way beyond my ability to remedy.

Profitable Duck-breeding depends a good deal upon the situation and convenience of a farmyard. That at this place is in every way excellent for Ducks, being close to a fine pond of water fed by springs from the hills in rear of the farm buildings, and there is a small paddock also. The land, pond of water, and paddock, are altogether about an acre in extent, and fenced in on all sides. The soil is a strong, heavy, wet, brown loam, near a close and adhesive calcareous clay; the formation oolite, and presenting great varieties of soil in the neighbourhood; and the aspect, south and east. The poultry-house is built of bricks, and the roof is of red tiles.

About the middle of March we commence sitting hens upon the Ducks' eggs, to have ducklings for green peas in June. If three or four hens wish to sit within a day or so, about eleven eggs to one hen are sufficient; if a good old sitter and mother, thirteen are allowed. By the time these eggs are hatched we manage, if possible, to have six or eight more hens sitting upon Ducks' eggs. Should four hens bring out thirty or forty ducklings, two hens take charge of and nurse them. I have had five hens hatch fifty-two Ducks, have put them to two excellent mothers, and have not lost one while they had charge of them in the coops. As soon as the ducklings are what we term nest-ripe—sprightly, strong, and hungry, they are put under coops with the mothers out of doors, and between the coops is placed a feeder for the ducklings to feed under. One of an oblong form is best. Mine, for Ducks, is about 8 feet long by 4 feet wide, and is made of dry elm boards 1½ inch thick. Its depth is 8 inches by 4, and in it are cut pigeon-boles—viz., one at each end and one in each side, to allow of the Ducks going in and out to feed. The top is covered with galvanised wire netting, with one-inch meshes, to prevent small birds, &c., devouring the food. We commence feeding with chicken rice boiled in skimmed milk for the first six weeks, both for chickens, Ducks, and Turkeys.—J. D.

PREVENTING SWARMING.

I AM absent from home during the day, and find it impossible to take runaway swarms, and am a little nervous at changing bars from one hive to another for the purpose of multiplying swarms. Do you think if I were to make a small, long passage from one bar-hive to another that the bees would enter the empty hive, fill it with comb, guide-comb being previously attached, and breed a new queen therein? I should close the entrance to the empty hive until I thought it pretty full, then open the entrance at front, and close the connecting passage, so as to leave them to their own resources.—SMO KETOWN.

[It is very unlikely that bees would take possession of a second hive far detached from the parent stock, and with such restricted communication. Even if they were to do so they would not raise a young queen therein, as you suppose, but would remain one family under the original sovereign. If

young queens were bred it would probably be in the old hive, and the result would be the issue of one or more swarms in the ordinary way.

The bee you enclosed looks rather dark for a Ligurian, but the point cannot be decided without an actual examination of the stock itself. No reliable opinion can be formed merely from the inspection of dead bees.]

REMOVING STOCKS.

I HAVE had a new bee-house made, and wish to move the hives I now have into it from their stands. How am I to lift the hives off as I conclude they would adhere to the wood? and will not the bees come out at the bottom? Would it be safe to move them now, or better to wait till they swarm in the summer? The distance to the new house from their present abode is about 20 yards.—A. F. S.

[You will find no difficulty in merely removing your stocks, if, after previously loosening the hives from their floor-boards (we imagine these latter to be fixtures, or they should accompany the hives), one day you lift them quietly, and towards the evening of the next, convey them to their new position. So many bees will, however, return to their old place from such a short distance as 20 yards, that we should advise the old stocks being left where they are, appropriating the new bee-house to the reception of swarms.]

OUR LETTER BOX.

SPANISH PULLET (*Percy Cross*).—Nearly three weeks having elapsed you may now conclude that her progeny would be pure. You will see some notes on the management of Ducks in our present Number. In "The Poultry-keeper's Manual," published at our office, are coloured and other drawings of various kinds, as well as directions for managing them.

PAISLEY SHOW (*Fair Play*).—All that you say may be quite true, but so great a length of time having elapsed, and as we have declined to insert defensive statements, we must not revive the complaints.

INCUBATOR (*J. T.*).—The temperature is 10° too low, it ought to range from 100 to 105°.

TESTINO EGGS (*E. A. P.*).—They may be put into water not hotter than 100° with perfect safety.

UNFERTILE EGGS—INCUBATOR (*Captain*).—After eggs have been under the hen for a week, those which are unfertile may be detected. A description and drawing of the mode of detection are in the "Poultry-keeper's Manual," published at our office, price 7s. 6d. As the incubator you mention failed, but we do not think it can have been properly managed, try Brindley's. His direction is St. Alkmund's, Derby.

FOOD FOR ZEBRA PARROQUETS (*A. Worthington*).—Chopped egg, bruised hemp sopped with crumb of bread, and started rape, are good food for Zebra Parroquets.

BRAHMA POOTRAS (*Idem*).—The origin of the Brahmas is a vexed question. The general opinion is that the Dark is the true bird. If they were the result of a cross between a Dorking and the Light they would throw clean legs, five claws, and all the different shades that come in Dorking breeding. The best and largest breeders of the Pencilled variety can prove they never breed a faulty bird either as regards clean legs, five claws, Light or Dorking birds. All crosses will throw back at times, it is an inevitable result.—B.

FOOD FOR GOSSLINGS (*Idem*).—Meal mixed in water, and put in a vessel that has a growing sod of grass at the bottom, is the best food for Goslings.

CRUSHED OATS AND BARLEY (*J. C. K.*).—They are merely crushed flat, the outer skin being thus broken facilitates digestion. In the best connected stables there is a machine for the purpose. It is formed of two cylinders, with just space enough to have the grain crushed as it passes between them. Horses supplied with oats so crushed are kept in as good condition with one feed less daily as horses fed with oats uncrushed.

DISTINGUISHING A COCK FROM A HEN PIGEON (*Inquisitive*).—The cock is bolder, more prone to fight, coos louder, is thicker about the base of the beak and neck. In playing he turns round and round, which the hen rarely does. The hen when cooed to twinkles her eyes, seems to swallow, raises the shoulders of her wings, and curtsseys to the cock. Two cocks, also two hens, will occasionally pair, and go through all the actions of a pair as far as possible; but two cocks will also coo after other Pigeons. Two hens will lay four eggs. Lastly, in billing, the hen puts her bill in the cock's. Thus, two cocks will both open their mouths; two hens will both try to put their beaks in that of the other. Perhaps your correspondent may tell by these signs what sex his Fantails are. I do not know of better food than old tares and small beans; a little luckwheat barley, or canary seed for a change.—B. P. BRENT.

POULTRY MARKET.—MARCH 26.

The tendency of prices is still to rise quite as much as they generally do at this time of year.

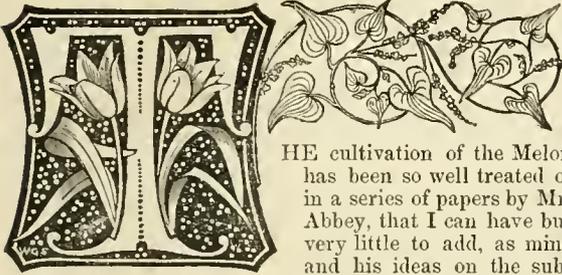
	s. d.	s. d.		s. d.	s. d.		
Large Fowls	3	6 to 4	0	Guinea Fowls	2	6 to 3	0
Smaller do.	2	6	3 to 0	Partridges	0	0	0
Chickens	2	0	2 to 6	Hares	0	0	0
Goslings	6	6	7 to 0	Rabbits	1	4	1 to 5
Ducklings	3	6	4 to 0	Wild do.	0	8	0 to 9
Pheasants	0	0	0 to 0	Pigeons	0	8	0 to 9

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 3—9, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.	
3	TU	Acacia eriocarpa.	57.0	36.0	46.5	20	33 af 5	34 af 6	8 10	7 7	18	3 21	93
4	W	Acacia Dillwyniaefolia.	56.7	36.0	46.4	15	31 5	35 6	5 11	34 7	19	3 3	94
5	TH	Acacia juniperina.	56.6	36.5	46.5	18	29 5	37 6	morn.	12 8	20	2 46	95
6	F	Acacia taxifolia.	57.0	36.6	46.8	14	27 5	39 6	0 0	55 8	21	2 28	96
7	S	FRANCE LEOPOLD BORN, 1853.	57.3	36.9	47.1	18	24 5	40 6	48 0	45 9	22	2 11	97
8	SUN	1ST OR LOW SUNDAY.	55.8	35.8	45.8	21	22 5	42 6	33 1	42 10	4	1 54	98
9	M	Actus incana.	54.7	35.8	45.2	19	20 5	44 6	12 2	45 11	24	1 37	99

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 56.4°; and its night temperature 36.2°. The greatest heat was 79°, on the 7th, 1859; and the lowest cold 21°, on the 6th, 1851. The greatest fall of rain was 1.19 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

MELON AND CUCUMBER CULTURE.



THE cultivation of the Melon has been so well treated of in a series of papers by Mr. Abbey, that I can have but very little to add, as mine and his ideas on the subject are so much alike.

I am obliged to "AN OLD SUBSCRIBER," for the compliment he has paid me, although he is wrong in assuming that I once lived at Cricket Park. He is correct, nevertheless, in stating that Mr. Davies grows Melons and Cucumbers well, and, indeed, everything else he takes in hand is well done. I may here state, that I attribute a great portion of my success to the kind encouragement which Mr. Davies gave me when a boy. At a very early age the love of flowers had taken strong hold of me; I thought nothing of walking ten or twenty miles if I could procure cuttings, or plants, of any good flowers.

The lessons I learnt when chance gave me an opportunity of visiting the beautiful gardens at Cricket Park, in my early boyhood, have been always fruitful of good results, and are so deeply engraven on my mind, that they have ever since formed prominent landmarks in my memory and models for my guidance; and if I had a son who wished to be a gardener, Mr. Davies is the man, and Cricket Park is the place, above all others, I should like to send him to.

But to return to the subject which forms the heading of my present paper, I will, as it has been requested, give a few plain hints on the cultivation of the Melon in houses heated by hot water, referring "AN OLD SUBSCRIBER" for general details to Mr. Abbey's articles on the cultivation of the Melon.

Where it is necessary to have a moderately early crop of Melons, no time should be lost in sowing the seeds. I generally sow about five or six seeds in a large 60-sized pot. As soon as the seeds are up the plants should be carefully separated, taking care to preserve their roots from injury; they should then be potted singly into large 60 or 48-sized pots in any good soil, and placed in a temperature of 70° or 75°, in a position as near the glass as possible. A bottom heat of 70° will be sufficient to cause the seeds to vegetate. As soon as the plants have well filled the pots with roots, they should be shifted into 16 or 24-sized pots, and a stick put to every plant to prevent its suffering injury. The bed in which the Melon plants are to be planted out may in the meantime be prepared.

The house in which the Melons are to be grown should have an ample quantity of pipes in it, so that the desired temperature may be obtained without the necessity of ever making them very hot. Where the heating surface is in-

sufficient, there red spider and thrips will be sure to appear and when once these insects obtain a hold, there is very great difficulty in extirpating them without sacrificing the crop. The pipes should also be distributed as equally as possible over the house.

The bed in which the Melons are grown should be about 4 or 5 feet from the glass, and a wire or wood trellis should be fixed about 18 inches from the glass to train the vines on. If the bed in which the Melons are to be grown is 5 feet wide, there should be two four-inch pipes in the bottom for bottom heat; but if only 2 feet wide, one pipe will be sufficient. There should be about 1 foot of broken bricks placed above the pipes for the purpose of distributing the heat regularly all over the bottom of the bed, and on these should be placed a layer of charcoal broken rather small, with the small dust sifted out of it, to keep the soil from passing down amongst the drainage. The soil, which should be about 2 feet deep, may then be put in in layers and made moderately firm. A good stiff loam, without manure of any kind, should be used for Melons. It is a good plan to put in some drain-pipes at intervals along the bed for the purpose of pouring down water amongst the drainage in order to produce a moist bottom heat.

As soon as the soil of the bed has become well warmed through, and the plants have nicely filled their pots with roots after the second shift, they should be planted out, and to each plant a nice straight stick should be put, reaching from the bed to the trellis. The plants should not be stopped, but ought to have all the encouragement that can be given them in respect to heat and moisture, to cause them to reach the trellis as quickly as possible. They must also have all the air that can be given on all favourable occasions. The night temperature most suitable for them during their season of rapid growth—that is, before they begin to show fruit, should never be lower than 65°, and the day temperature should average about 75° or 80°.

None of the leaves should be touched till after the plants have reached the trellis and been stopped. As the plant makes fresh leaves above the trellis, those on the stem may be gradually taken off, beginning at the bottom. In doing this care must be taken not to cut the leaf off close to the stem; it is better to pinch the leaf off by degrees, and allow the stalk of the leaf to wither-up and fall off of its own accord. I like a clear stem of about 4 or 5 feet long, as I find such plants are not so liable to go off at the collar as when the vine is nearer the ground. As the vine grows it should be stopped at every second or third joint; and as soon as the plants are in flower, choose an opportunity when the atmosphere of the house is pretty dry, to fertilise with the pollen of the male blossoms. The best time to do this successfully is in the morning after there has been sufficient sun to dry the flowers after syringing, and the house should be as free from moisture as possible for an hour or so after the young fruit have been set.

As soon as a sufficient quantity of fruit is set on each plant and they begin to swell-off freely, the plant should be liberally supplied with guano water in a clear state

three or four times a-week, until within ten days or so of the fruit's ripening, when all water should be withheld, the temperature of the house increased, and abundance of air given. This will impart the necessary flavour to the fruit. When the fruit are fairly set and are swelling off, all the fresh shoots made by the vine should be pinched out, so that the whole of the energy of the plant may be concentrated on the fruit. All the first and principal leaves made by the plant must be preserved in a healthy state as long as possible, as these are the chief lungs of the plant by which it receives its atmospheric food. To guard against green fly and thrips, the house should be well fumigated two or three times during the free growth of the plants; the syringe, too, should be freely used before and after the fruit is properly set, but in order to prevent scorching syringing should be done pretty early in the morning, so that the foliage may be dry before the sun shine very strongly on the house, and in the afternoon the house should be shut up, and the plants syringed, as soon as the vertical rays of the sun are off the glass.

The Cucumber requires similar treatment to that recorded above for the Melon, with the exception of the drying-off process, and the difference in the soil, which cannot be too rich for the Cucumber. It will also do with a higher and more humid temperature than the Melon, and this temperature must be continued till the fruit be fit to eat. To be successful in setting the young fruit of the Cucumber during the winter months, care must be taken in choosing an opportunity when the pollen is quite dry. Fertilisation is best done with a small brush, as the fruit is often injured by pressing the male blossom on it too hard. A plan of a new range of Melon, Cucumber, and propagating houses, &c., will shortly be given, showing the positions the plants occupy.—J. WILLS.

CULTURE OF VINES IN POTS.

(Continued from page 245.)

WHERE the convenience of a house with a suitable temperature, and means for plunging the pots in bottom heat is not at command, it will answer nearly as well to plunge the pots in Cucumber or other hotbed-frames; the temperature of the bed being 75°, and that of the atmosphere 65° by night. In this the pots are to remain until the eyes have started, and have grown so as to fill the pots with roots. By this time another hotbed will most likely be in readiness for successional crops of Cucumbers or Melons. Soil in which to pot the Vines should be brought into the frame to become warmed, which it must be, forty-eight hours before they are potted. The Vines, being potted in six-inch pots, should be plunged in the bed again if the heat is sufficient and can be kept up by linings, or they may be transferred to another and new bed, choosing a warm calm day for the operation of potting or transferring the canes, so that they may not receive a check. Here they may remain until they can be removed into a house with a temperature of not less than 60° at night. The house may be a vinery at work or any similar house. Previously to removing the Vines from the frame, the pots should be gradually withdrawn from the hotbed, so that when removed to the house they may not receive a severe check, as they would were they removed direct from the hotbed and placed at once on a cool bottom. In the house the Vines are not to have an inferior situation, but the best the structure affords, and that must be light, and not very airy at this early season. If there is a pit filled with fermenting materials plunge the pots therein to the rim, and when they become full of roots shift the Vines into nine-inch pots, and ultimately into 11-inch or larger pots, after which they are to have a position near the glass. The canes raised in this manner will be of the thickness of the little finger by autumn if at all liberally encouraged, and the wood will be brown and hard if they have had the benefit of all the light possible, by being 1 foot from the glass of an unshaded roof, and had a sufficiency of heat with abundance of air. Many of them will fruit in the following year, but will not be eligible for very early forcing.

Where there is not the convenience of a vinery that is started in January or February, so as to have by the time the eyes are removed from the hotbed (where they were placed in January or February), a temperature of from 60° to 65° at night, and the means are limited to a greenhouse or other cool house, the eyes may be inserted in the beginning of February, and be plunged in a hotbed such as is used for raising annuals, and in this they may remain until April, when they may be removed to

the warmest and least airy part of the house. If there is no hotbed at command in February, they may be inserted in March, and plunged in a mild hotbed; they then grow rapidly, and, when the bed becomes cold, may be removed to the cold house, giving them a light and airy situation. Pot the young Vines in six-inch pots in April or May, and by June they will have filled these with roots, when they may be transferred into nine-inch pots, training the canes as they grow, to the roof if possible, and watering when the pots become full of roots with liquid manure at every alternate watering up to September. The use of liquid manure should then be discontinued, and only half the quantity of that previously given should be afforded, gradually reducing the supply so as to leave off watering altogether when the wood becomes brown and the leaves turn yellow. Let the canes grow as they like, and without heeding the laterals. By autumn the result will be strong canes, considering the means, but of no value for fruiting in the succeeding year, though they will do for planting out in the following spring in borders; but, if this is contemplated, cut in the laterals in September, which will admit more light to the leaves and cane, and cause the latter to ripen more fully.

Where there is not the convenience of a hotbed, the eyes may be made and inserted in pots in February or March, and be placed on a shelf in the warmest part of the greenhouse; the soil being kept moist, the eyes will commence growth when a minimum of 50° of temperature is reached. The soil must not be kept wet, otherwise the eyes will rot, and if kept dry they will not grow. When the Vines have grown so as to fill the pots with roots, shift into six-inch pots, and if by July they have grown sufficiently to fill these with roots, give nine-inch pots, and, under liberal treatment, they will merit the name of Vines by autumn.

Raised by any of the above means, the canes after the leaves fall may be kept in any place free from frost, though it is not absolutely necessary to exclude it; only, if no fire heat is used to keep out frost, the pots must be protected by a covering of dry hay or litter so as to preserve the roots from injury. The temperature when the Vines are at rest should not exceed 45° from fire heat. The soil in the pots should not become so dry as to cause the wood to shrivel; a little water should be given if necessary to prevent this. The canes intended for fruiting should, immediately after the leaves are off, be cut in to the length required, and those not strong enough for fruiting should be cut in to two or three eyes. The parts cut off may be kept until required for taking eyes from, with their lower ends in moist soil.

The Vines not sufficiently strong for fruiting in the following year being cut in to two or three eyes, may have the soil shaken from the roots and be repotted in nine-inch pots. Spread out the roots as much as possible, and work the soil in between them. This should not be done later than the middle of February, even for the Vines that are to be grown in cool houses, for though they may not grow they will, nevertheless, make roots.

If from these Vines ripe Grapes are desired on New Year's-day, select some of the strongest of such as had the wood ripe early in the season; those from eyes put-in in January and grown throughout in a strong heat, having the wood ripe in August, are the best, and they cannot be too strong. Cut them in to two eyes early in October, turn them out of the pots, shake the soil from the roots, pot them in nine-inch pots, and keep them in a cool house until November. They may then be placed in a house having a temperature of 50°, plunging the pots in a hotbed of 75°, half their depth at first, and then to the rim in a fortnight afterwards; increase the temperature 5° every fortnight, and when a heat of 60° by night is attained, that degree is not to be exceeded until the 1st of February, when an increase of 5° more is necessary. When the nine-inch pots are full of fibres, pot the Vines in 12-inch pots; these will be filled with roots by February, and a shift into 18-inch pots will then be necessary. The canes, from the first, are to be trained to the roof or rafters, and the laterals are to be stopped at the first leaf; but after the final shift allow the laterals to grow, keeping those at the upper part of the cane closely stopped to one joint—that is to say, when the lateral has been stopped at one joint and it has grown again, stop that growth at the first leaf. The cane should be stopped, or have its point taken off, when it has attained the length of 9 feet, and the laterals for 3 feet beneath it are to be stopped to one joint as fast as growth is made.

By May the canes will be strong, and the wood turning

brown. Now reduce the laterals gradually, diminish the supply of water, and give more air and a temperature of 60° by night, and from 85° to 90° by day with sun, and 75° without it, and the wood will soon become of the colour of amber, and be as brittle as glass. Early in June place the Vines with the pots on their sides close to a south wall, and on Midsummer-day strip off the foliage, then prune them. After pruning set the pots upright on boards, and not on their sides, and after allowing them to remain thus for six weeks, they may be placed in a house with a temperature of 60° at night, and which is kept very moist and rather close; they will soon break freely, showing fruit from almost every eye. Now, these Vines, or others of this description, if kept in the house until midsummer, will have the wood even better ripened, and if then placed at the foot of a south wall will go to rest, and be fit for forcing so as to have fruit ripe in March, which is much more difficult to obtain than in January; for almost any strong Vine, if well furnished with sound, plump eyes by the end of June or July, if it then receive a sudden check from the leaves and laterals being taken off suddenly, will start most of the principal eyes, and the shoots from these will mostly show fruit at the fifth joint, which, under favourable conditions of heat and moisture, will ripen at a late period of the year.

Another batch of the non-fruiting canes being placed in heat and grown on in a house having a temperature of 50° at night to begin with, and an increase of 5° fortnightly up to 65°, will, with the treatment before-named—viz., shifting into 12-inch pots when the pots become full of roots, and into 15 or 18-inch pots in April if started in January, or in May if started in February, have strong and well-ripened canes by August in the one case, and by September in the other. The first are calculated to ripen with greater certainty a crop of fruit in April and May, and the second in May and June, than those raised from eyes in the same months as the above were started.

The Vines that were raised in a greenhouse in the previous year are to be shaken out and placed in nine-inch pots by the middle of February, or not later than the beginning of March. These, with the soil kept moist, will shoot strongly at the end of March, and are to be trained to the roof of the house at 1 foot from the glass. The first laterals should be stopped at the first leaf, and this continuously until the point of the shoot is taken out at the height of 7 or 9 feet; and the uppermost laterals for a distance of 3 feet or so downwards are to be closely stopped to one leaf at every succeeding growth. The laterals situated lower down should be allowed to grow if they will. In June give the Vines their final shift into 12, 15, or 18-inch pots, according to their strength. Syringe them in the evening, and never allow them to suffer from want of water, and give liquid manure at every alternate watering in July and August. Under these conditions, and with a moist atmosphere, they will make strong canes by September, when they are, after the last week, to have no more water than is sufficient to keep the leaves from flagging, and the laterals are to be reduced by degrees; and finally cut off close to the cane in the beginning of October. These Vines will mostly bear fruit in the following season.

If bushes are desired the cane is to have a strong stake placed by it in the pot, 3 feet long for two-foot bushes, and longer for those of greater height; three-foot bushes are, in my opinion, high enough. The stake must be 1 foot in the soil, and if it be charred a little it will neither be so apt to rot, nor will fungus be so likely to attack it, as would otherwise be the case. To this stake the cane is to be loosely tied, and when it has grown to the top of the stick take out the point. The laterals will then break strongly; stop them at the first joint or leaf, and pick out the eyes from the canes for a distance of 6 inches from the soil. Above this point will be seven or eight leaves, with eyes in their axils, and laterals coming from the sides of them. Pinch in the three uppermost laterals to one leaf as they are made, and let those below grow and hang at freedom. In June give the Vines 11-inch pots, and throughout their growth keep them near the glass. The laterals are to be removed in September by degrees, and take care to give no water beyond that needed to keep the leaves from flagging. These canes will fruit another year, but are not so good nor certain as canes cut-in to eight joints, not counting the three lowest, which are mostly embryo eyes, which ought to be picked out with the point of a knife. This should be done immediately after the leaves have fallen.

We have now, 1st, Strong canes raised in January and by September fit for forcing to produce fruit in the following April and May. 2nd, Canes raised from eyes in February, and by

October ripe enough and strong enough to afford fruit in July; or if started later, in August and September. 3rd, Canes two years old for fruiting in January and February. 4th, Two-year-old canes for fruiting in March. 5th, Canes one and two years old for fruiting in September, the fruit hanging up to Christinaa, or March if needed; and, 6th, Vines for bushes for cool-house culture in pots. All these I will notice in future articles.—G. ABBEY.

MORE GOSSIP ABOUT ROSE-GROWING.

I AM much obliged to your correspondent Mr. A. H. Kent for his reply to my communication in your Number of December 26th, on the subject of using the Manetti stock as a means of getting Roses on their own roots. I have derived some valuable hints from that reply; and if it will not be trespassing on his kindness, or that of some other of your correspondents, I shall be very glad to have farther information on one or two points alluded to therein.

First, as I shall, of course, be very glad to arrive at the knowledge of the form of Rose-growing likely to be best suited to my soil, through the speedier process of benefiting by the experience of others rather than by the more tedious one of proving this by my own experiments, I herewith send what I call a popular description of the nature of the soil of my garden, premising that I do not possess such a knowledge of agricultural chemistry as to enable me to give a scientifically or chemically correct description. The soil of my garden is heavy, but inclined to be boggy or dark in colour, rather than clayey or red. It is shallow, not being more than from 2½ to 3 feet deep, and at that depth rests upon a particularly bad subsoil, consisting of clay and gravel, the water running from which leaves a peculiarly rusty-looking deposit. When from any cause the greater part of the roots of any of our fruit trees find their way down into this subsoil, the tree speedily dies, the decay apparently beginning at the extremities of the youngest and thinnest branches. These die away in lengths of from 6 to 12 inches in a single season, and in two or three seasons lead to the death of the tree altogether. I find I can grow Broccoli and Cauliflowers, and indeed the whole Cabbage tribe to perfection, but have hitherto failed to grow good Carrots, for which I expect my soil is too rich and heavy. I imagine, also, that it will prove too good for the Manetti, unless I can reduce its over-luxuriance as a stock by annual removal or root-pruning. I fancied last year that my plants made too much wood, and produced much fewer blossoms that they ought to have done; but as the ground was a virgin soil to Roses and liberally manured, this tendency may be corrected after two or three years' growth in the same situation. When I describe it as a virgin soil to Roses, I mean that other plants—those for bedding-out, for instance—had been grown upon that part now occupied by my Roses, but not Roses. It was carefully and fully drained about four years since.

As some proof of the character of my soil as to richness, I may state that some of the free-growing Hybrid China and Bourbon Roses, as Blairii No. 2, Charles Lawson, &c., have made shoots of 6 and 8 feet long in the first season after budding—that is, they were budded in the end of August or the beginning of September, 1864, and made this growth during the following year. Mr. Kent speaks of "well-budded Manetti plants in nine cases out of ten making strong shoots the first year," and again that "if budded early in the season a plant is formed at once, which may be removed in the autumn." Would he kindly say how early he thinks might be desirable to bud the Manetti in this neighbourhood (Shropshire)? I have hitherto budded in the last week of August or first week in September.

I also owe many thanks to your well-known correspondent, the Rev. W. P. Radclyffe, for his remarks in No. 250 on my communication about Roses published in your Journal of December 26th; and I am sure that he, or Mr. Kent, or both, would confer an obligation on many of your readers if they would give some plain and precise directions as to the propagation and budding of the Manetti. I do not know how it has been with others, but I have found some difficulty this year in procuring Manetti stocks. One of our principal growers, of whom I ordered six dozen, supplied me with two dozen, with an apology that the demand was so great, that he was himself a buyer instead of having any to sell. Therefore it is desirable, if not necessary, for amateurs to be able to propagate the Manetti stock themselves if they wish to experimentalise with it to any extent.

In the autumn of 1864 I put in about a hundred Manetti cuttings in a west border under a wall in the early part of September, and they seemed all to do well until they began to grow in the spring, and then all died with the exception of about twenty. This autumn I put in about the same number under a north wall, and about ten per cent. of these have rotted already, owing, I am sure, to a superabundance of moisture at the roots. I have also about fifty more cuttings in the west border before alluded to, protected by a frame, and which as far seem to be doing well. My experience thus far goes to show that it is not so easy to strike the Manetti as some people represent.

Then as to budding the Manetti. The plan that seems to answer best on my soil is to plant shallow, and earth up the stocks about 3 or 4 inches, much in the same way that you would earth up a row of Cabbage; and when you come to bud, this ridge of soil must be opened, and the bud inserted 2 or 3 inches above the roots. I have found the success of budding on the Manetti to depend very much upon there being three or four fine days immediately after budding. When the budding has been followed by wet, especially if continuing for two or three days, I have found many buds fail through the wet penetrating to the junction of the bud with the stock, and so causing the bud to rot. This is especially the case if, in opening the trench with either trowel or spade, in order to bud the stock, simply a sort of basin-shaped hollow is made instead of the ridge being thoroughly levelled to fully an inch below where the bud is inserted. In such instance, in the case of rain the tying of the bud is kept constantly wet, and the bud is almost sure to rot; therefore every precaution should be taken to preserve the bud and its surroundings, for some days at least after insertion, in a state of comparative dryness, and to bud when there seems to be the greatest probability of settled fine weather.

There is a point connected with this part of the question upon which I should be glad of the opinion of your correspondents before alluded to, and that is when this ridge of soil should be replaced about the Manetti—in the case of early budding, probably in a month or six weeks' time, or as soon as the bud has made about 4 inches of growth; and in the case of light soils I should say always before the winter, as I cannot help thinking the soil would prove a great protection to the newly inserted bud. In heavy soils like mine, I am inclined to think that the earthing-up of the budded Manetti before spring, would be likely to lead to the rotting of any buds that had not formed a perfect junction with the stock.

I have thus contributed my mite of information on this subject, and shall be glad if the propagation and budding of the Manetti can be thoroughly ventilated in your next two or three Numbers. I have for some time been convinced that when rightly used, and for soils for which it is adapted, it is by far the best means of growing Roses. If it has a fault it seems to be its excessive luxuriance, which in heavy rich soils causes the Roses budded upon it to make too much wood; but this may, I suppose, be corrected by an annual removal or root-pruning. I have had no experience as yet of its use in growing Roses in pots, though I have seen it recommended as the best stock that can be used for that purpose.—COUNTRY CURATE.

In reply to "Loch Ness," I beg to state that I live in Essex, about twenty miles east of London, and the soil in which my Roses are grown is a tolerably light one, resting on a sort of gravelly clay. I have from twelve to twenty plants of all the leading kinds (about 1800 plants in all), and so am able to form a pretty good opinion of what a Rose is after having it a season or two. I must confess that I did not pass judgment on King's Acre so much from the blooms which my plant bore as from those which the raiser of this Rose exhibited at the Crystal Palace Show. I concluded that if this gentleman could only show about one good bloom in some two dozen specimens, it was at least not at all a constant flower.

Perhaps "Loch Ness" lives in a moister climate than this. Last summer was a very trying one for Roses in this part of Great Britain, it was so hot and dry. Should the coming summer be more favourable than the last, King's Acre may prove a better flower than I at present take it to be. I sincerely hope it may, for it seems to be a Rose of good constitution, and is, moreover, an English-raised flower.

I forget whether "Loch Ness" mentioned Olivier Delhomme. If he has not yet obtained that variety, I can confidently recom-

mend it as a first-class flower of very fair habit. I think, too, that if he has not Madame Clemence Joigneaux he would be pleased with that flower.—P.

VERBENAS.

OUR HANGING DAY.

Yes, we had a grand battue of new and old varieties at Shobden Ledge one day last autumn; and if we killed a good many it was not to fill our bags with them, but the dunghoop, while those that were spared were for the stocking of the preserves again. We make, by-the-by, a great outcry about French Roses, the numbers that are brought out, and the few that are kept afterwards; and yet may not our French friends cry out in return and say we give them a Roland for an Oliver? Nay, do they not? Pathetic have been the complaints that I have heard from Messrs. T. & K., Mons. R. C., and others. "Ah, sir! I buy every year your new Dahlias, Geraniums, and Verbenas; but there is very little difference from one year to another, and I shall give up buying any at all." Now, my wonder is, that they buy any of these novelties, considering how few are the amateurs in France. My object, however, in mentioning it is to show that the complaints are not all on our side. Are they groundless on theirs? Every year we have a multitude of new Verbenas, and I am constrained to say that a very large proportion of them do not come up to the standard they claim to have reached. Let it be borne in mind that there are two distinct objects for which the Verbena is raised—for bedding-purposes and for exhibition. Would it not, then, be only fair that that for which a new variety is useful should be fairly and distinctly stated? For while many a bedding variety would be useful in a stand, many of the pot or exhibition varieties are useless for a bed. Why is it that Purple King is still the best bedding Verbena out? It is neither the size of the pip nor the brilliancy of its colour, but its habit of growth, the profuseness of its bloom, and the uniformity of its colour. There is no white or coloured eye, but it presents one mass of purple to the spectator; and while other varieties more or less eyed are used, undoubtedly, for bedding, yet the nearer the approach that could be made to it the greater would be the acquisition for such purposes. To have the habit of Purple King is the standard which each raiser claims to have reached. How many have yet done so? The lists will answer this. Instead of giving the lists of the new varieties of last season, I shall give the list which we selected of those to be retained, adding a few observations on some of them at the end.

1 Admiral Mitford	20 Waverley (Banks)	40 Nobile Carolina
2 Annie (Cooling)	21 Madame Lefevre	41 Franzini
3 Chieftain	22 Fanst	42 Garibaldi
4 Purple Emperor	23 Lord Raglan	43 Grande Duchesse
5 Elie Deans	24 Brillant de Vaise	44 Fantastic
6 Lord Leigh	25 St. Marguerite	45 Admiral Dundas
7 Lord Cliden	26 Nemesis	46 Reine des Amazones
8 Foxhunter	27 Grant des Batailles	46 Merry Maid
9 Princess of Wales	28 L'Avenir de Ballent	47 Gloire de St. Louis
10 Ruby	29 Madame Matras	48 Velvet Gem
11 Grande Boule de Neige	30 Striata Perfecta	49 Emblem
12 Snowflake	31 Le Bon Nicolas	50 Glowworm
13 Mrs. Holford	32 Mrs. Elphinstone	51 Princess of Wales
14 Defiance	33 Lion Manser	52 Lilac King
15 Ariosto Improved	34 Quelchi	53 Beatrice
16 Warrior	35 Desdemona	54 Purple Queen
17 Ruby King	36 Great Eastern	55 Ne Plus Ultra
18 Beauty (Banks)	37 Vicomte de Balliere	56 Paul Duport
19 Urban	38 Purple King	57 Dr. Prony
	39 Marquise Pallavicini	

It will be seen that this list comprises many of the very old varieties, such as No. 13, 15, 24, 25, 27, and comparatively few of those of last season, 2, 49, 50, 51, 52, 54, being the chief; but there are one or two things to be considered. It was a very difficult season to judge of Verbenas, the intensely hot weather in the earlier part of the year interfering very much with their growth, and, in many instances sweeping away whole beds, as was the case in the ground of my friend Mr. Banks, and then they did not afterwards recover sufficiently to afford a fair trial. No. 2 is decidedly a striped flower; but there is a washiness about it that makes it very difficult to show even in a stand, unless you can manage to keep it entirely away from the scarlets, &c. 46 is a good flower, in the style of Lord Raglan. 52 is a magnificent lilac flower. 6, 7, 8, are so like one another, that it would be almost impossible to discern the difference between them in a stand, and yet one hardly likes to discard any of them.

As I am frequently asked to give lists of Verbenas, especially

those suitable for small gardens, it may, perhaps, save some trouble if I say that I consider the best *Verbenas*, taking in all their points, to be Admiral Mitford, Lord Clifden, Snowflake, Warrior, Ruby King, Beauty, Faust, Lord Raglan, Nemesis, L'Avenir de Ballent, Mrs. Elphinstone, Grande Duchesse, Fantastic, Admiral Dundas, Géant des Batailles, Merry Maid, Lilac King, and Purple Queen.—D., *Deal*.

P.S.—On referring to Henderson's list I find that in it are retained about 80 varieties, and in Turner's about 100.

VINE CULTIVATION.

CAN Mr. Thomson or any other Vine cultivator give his experience in the following mode of cultivation?—Instead of planting the Vines at 4 feet apart, plant them at 2 feet, and fruit every alternate Vine once in two years. What would be the effect in quality and quantity, the plants being under glass and each having the same advantages? The finest crop of Grapes I ever had was by inducing the root-fibres to come to the surface by top-dressing with well-rotted dung and leaf mould. I have seen very fine crops of Grapes grown by digging a trench inside the house and filling it with fresh leaves every year. This continued feeding seemed to answer remarkably well, and it was very instructive to watch the roots passing into every part of the leaf mould, which became rapidly exhausted.—CONSTANT READER.

TRANSPLANTING LARGE TREES.

THE following mode of transplanting trees of large size has proved very successful here for some years past. The trees are never lifted, so that the ball of earth is seldom broken. No rollers or wheels are required. Mr. W. Thomas, the landscape gardener, was the first person who introduced the plan here. The apparatus, consisting of a stout plate of iron, say 5 feet by 4, with an iron ring near each corner, is all that is necessary. It can be made by any blacksmith at a cost of about £1. This iron plate is introduced under the ball of the tree, which is kept in position by being tied to each of the rings. Two horses are now attached to two of the rings, when the tree can be taken away to any distance. When it has arrived at the required spot it is untied, and the iron plate is withdrawn.

A large number of trees have been moved here this year in the above manner without a ball having been broken. I am acquainted with the various modes of transplanting, and never found any method so simple or efficient as this.—CONSTANT READER.

APPLE SCIONS ON THE POMMIER DE PARADIS STOCK.

To show you that I know as much about the Pommier in question as any of your correspondents that have as yet written upon it, let me say that whilst on a botanical tour in the south of Russia I crossed from the Sea of Azof to Astrachan, and along the shores of the Caspian, over the Caucasus to Teflis, thence to Mingrelia and Batoum in the north of Armenia. I had, therefore, an opportunity of seeing our little friend in all his pride of place in those mighty mountains that stretch from the Black to the Caspian Seas and divide Astrachan from Georgia, Armenia, &c., and whose summits may be said to be capped with eternal snow. There, amidst some of the most sublime scenery in the world, our petit Pommier, or, what I know for it, the *Pyrus malus præcox*, revels and luxuriates, forming jungles of considerable extent, and throwing up its innumerable progeny in thousands around it. It is found at great elevations, reaching almost to the snow line; however, at these altitudes it is a "wee thing;" lower down the mountains, where the Walnut, Chestnut, and Vine grow to mammoth proportions, it attains considerable dimensions.

Your friend of Sawbridgeworth says that "The Pommier de Paradis should be grown in dry light soils." He may have got this out of his quarto edition of Miller, but I do not think it bespeaks much knowledge of the plant under consideration. My experience of it is just the contrary. The tree in its wild habitats luxuriates in dark, deep, rich, boggy soils, where its roots are always in contact with moisture, and in summer especially so, from the melting of the snow above continually running down the mountains, and watering all the vegetation below copiously. I think those who attempt to grow it in "dry warm

soils" will be like the two friends who killed it by the thousand. They may roast the little Pommier, but they will find it difficult to freeze it to death. I have seen it in too many frozen localities to allow me to think that; in fact, were I to trace its geographical distribution from Persia to Astrachan, and from thence northward, I think it would be found a fellow denizen with the Siberian Crab itself. This I know, that both the *Pyrus astrachanica* and *P. præcox* are hardy at Warsaw and Moscow, and the two are found inhabiting the same localities as far south as Persia.

As to Mr. Rivers's supposition that this and the Dwarf Apple of Armenia are the same, I cannot say whether it is correct or not, as I have not seen the article in the "Horticultural Transactions," but I may say that the *Pyrus communis* and *malus* have each of them other representatives in these regions, such as the *Pyrus communis flore pleno*, &c.

Now, to return to the observations of your correspondents about this tree, I may say that no one has killed it but Messrs. Rivers and Pearson, whose importations and killing, to my mind, are wonderfully alike in time, place, and quantity. Mr. Rivers's having such and such a stock has very little to do with establishing or proving the hardness or tenderness of the tree in question. I have also my Nos. 1, 2, &c., of surface-rooting Crabs, but I have not taken forty years to bring them into action. I send you some of them that you may judge of their rooting propensities. No. 1, I call Géant des Batailles. I think you will allow that it is a good specimen of a surface-rooter. No. 2 is also very good, and No. 3, Nain enfant, as dwarf as you could wish to see. I do not find that the surface-rooting stocks possess any of the dwarfing nature of our Pommier; they are each good in their several spheres, the one to grow large trees upon, the other to grow little trees for little gardens, or where several sorts are required in a small space.

Your correspondent Mr. Robson, I think, mistakes the purpose for which Paradise stocks are advocated. He says a less quantity is produced by trees on this stock than by the same number of trees on a free-growing stock. This is, I think, admitted by all parties. What we claim for the Paradise is its dwarfing nature and early-bearing character, making it a useful stock for such as have small gardens yet require to have a diversity of fruit. We all know that a tree spreading over 20 or 30 square yards will, possibly, yield more Apples than the twenty or thirty trees on Paradise stocks which will stand on the same space of ground. In the one case you have one sort of Apple to repletion, in the other twenty sorts in moderate abundance. This is all we advocate, and do not deny the contrary proposition; yet to all who want to have large Apples quickly in bearing, we say, Use the Paradise stock. I had a tree here in 1865 that weighed, with roots and branches, half a pound, and this little tree, 18 inches high and no thicker than a little lady's little finger, bore three fruit, one weighing 15 ozs., the other two just over 1 lb. Here was an instance of a tree producing four times its own weight of fruit, and the more I see of the true Pommier de Paradis stock the more I am convinced that it is the stock to graft large Apples upon. Small-growing Apples are generally produced upon small-growing trees, and, therefore, are less needed upon the Paradise stock.

May I ask what Dr. Hogg means, in his "British Pomology," by recommending certain sorts to be worked on the Paradise stock? Is it a fact that he had any other stock in his mind's eye at the time than the said Pommier? If so, I would urge all writers on pomology, when speaking of stocks, to give right names to things. Why give the name of Paradise to the Doucin, or the Dutch creeper, or to any other surface-rooting stock? The Pommier de Paradis seems to have had the priority, and why deprive it of it?

I have now to say that what are called Doucin and English Paradise stocks are nothing more than some surface-rooting Crabs, chosen for their free-rooting propensities by somebody, just as Mr. Rivers and myself have chosen our No. 1's, and which we both mean to make so much of. Some years ago I bought five hundred Doucin stocks from Mr. Rivers, and five hundred from a Woking house. I planted them as follows:—Mr. Rivers's first, and the Woking ones second, with three thousand Crabs following; now I declare and affirm that I never could tell the difference between the trees grafted on any of the three lots; they all grew alike strong, and threw up stems 6 feet high the first year after grafting. So much for the dwarfing character of the said Doucin sent by Mr. Rivers, which, I must say, was quite true to name and description, and the right sort, as far as I am a judge. The Woking stocks

were English Paradise, or at least what I have always seen for it; and both stocks, as already stated, forced on the trees as well as did the Crabs planted in the same quarter and at the same time, and this is the case with every Apple stock I have yet grown excepting the Pommier de Paradis; only that good surface-rooting stocks ripen the wood better than do the deep-rooting kinds, thereby causing the Apples grafted on them to bear sooner. As to Mr. Rivers saying that there are several sorts of stocks used by the French, and called Doucin, I know it to be so, but these stocks are just of the category that Mr. Rivers's and mine are—surface-rooting Crabs.

I have now said my say about the little Pommier, and will leave it for time to prove whether I am right or wrong about its hardiness.—JOHN SCOTT, *Merriott, Somerset.*

ORCHARD-HOUSE IN DEVON.

The cultivation of fruit under glass is largely extending in the west of England, and becoming every year a subject of greater interest to amateurs. Several instances of success in this mode of culture may be noted in this part of the country. More particularly would I call attention to the successful management of an orchard-house situated at Billacombe, in the parish of Plymstock, near Plymouth. This house is 60 feet in length by 23 feet, and has a span-roof, the euds of which are north and south, a plan which persons building orchard-houses would do well to adopt, as by this arrangement the early and late sun is secured, a matter of vital importance in the cultivation of fruit under glass. I paid a visit to this house on the 7th of March. Here I found three modes of culture practised—namely, trees planted in borders and trained as half standards; trees planted in borders and trained to wire trellises; trees planted in pots half plunged. Peaches, Nectarines, and Apricots constitute the principal feature; while to Pears, Cherries, and Plums is assigned a limited space. While struck with the neatness, arrangement, and order of the house, the health and beauty of the trees were remarkable, every tree in full bloom constituting a mass of flowers. Several varieties of Peaches and Nectarines could be seen in the differently-formed flowers, which of themselves are an interesting study to every intelligent cultivator of fruit. This house is the property of E. Arkell, Esq., to whom was awarded seven first prizes for pot fruit, at the horticultural exhibition in July last year, in connection with the meeting of the Royal Agricultural Society held at Plymouth.

The mode of treatment Mr. Arkell adopts certainly reflects on him great credit. Giving plenty of air in favourable weather, opening the house early in the morning and syringing the trees, also syringing and closing early in the afternoon, form the principal features of the summer-management of this house. A very large quantity of fruit of the best quality is here produced. The proprietor kindly informed me, that last year he grew in pots Peaches measuring 9½ inches round, while the flavour was very good. This I can verify from having seen some of the fruit.

Another and not the least interesting feature in this house consists in the Vines planted in borders and trained to poles, and not allowed to touch the roof or in any way obstruct the light. Here are about thirty varieties of Grapes, all of which looked remarkably well. These constitute nothing less than a vineyard under glass. There are in addition some hundreds of Strawberry plants in pots in the best state of cultivation. This house is well worth a visit.

The proprietor afterwards conducted me to another glass house. This structure is of smaller dimensions, 30 feet by 18, half span, heated by hot-water pipes, with a hot-water tank in the centre, 12 feet by 4. This house, also, is devoted to the growth of fruit in pots under a high condition of temperature. On the tank I found fourteen Vines in pots, principally Black Hamburgh, and these for health of foliage and promise of good bunches I have never seen excelled. I found Mr. Arkell had left only five bunches on each Vine. This in my opinion is much preferable to a larger number if size of bunch and berry is to be secured. These Grapes were in bloom. In this house I also found several Peaches in pots covered with fruit the size of walnuts, and looking remarkably healthy both in the foliage and fruit. These trees appear to enjoy the temperature suitable for the Vines under the management pursued.

In the same house are also some fine Orange trees in pots, consisting of the Tangierine, Blood, Oval, and St. Michael varieties. Mr. Arkell informed me that the Tangierine Orange

were delicious. The fruit of this variety was all gathered, while the St. Michael's were covered with fine fruit, which afforded us an opportunity of testing the excellent quality of this fruit, which it has often been said cannot be grown to perfection in this country. Here I found about a hundred pots of Strawberries in a very forward state looking remarkably well. This house, as a whole, was exceedingly clean and healthy, and reflected great credit upon the proprietor, who, as an amateur, has given considerable attention to the growth of fruit under glass, and who has everything carried out under his own direction.—J. SNOW, *Saltram Gardens.*

ROYAL HORTICULTURAL SOCIETY.

The following provincial Floral and Horticultural Societies have been admitted into union with the Royal Horticultural Society:—Alton Floral and Horticultural Society, Boston Floral and Horticultural Society, Bury St. Edmunds Horticultural Society, Darlington Horticultural Society, Devon and Exeter Botanical and Horticultural Society: Durham, Northumberland, and Newcastle-on-Tyne Botanical and Horticultural Society, Faversham Horticultural Society, Fermoyle Horticultural Society, Lincoln Horticultural Society, Maidstone Horticultural Society, Manchester Botanical and Horticultural Society, Newbury Horticultural Society, Royal Horticultural Society of Ireland, Shepton Mallet and East Somerset Horticultural Society, Southampton Horticultural Society, South of Scotland Horticultural Society, Staffordshire Floral and Horticultural Society, Swansea and Glamorgan Horticultural and Floral Society, Watford Horticultural Society, and Wrexham Floral and Horticultural Society.

MARCH 31st.—The prizes offered at this meeting were:—1. For the best collection of eighteen bulbs in flower, for which Mr. Young, gardener to R. Barclay, Esq., of Highgate, was first, and Mr. Bartlett, of Hammersmith, second. 2. For the best collection of twelve miscellaneous plants in flower. In this class a very effective exhibition was made by Mr. William Paul, of Waltham Cross. It consisted of a successfully bloomed pink Hawthorn, *Prunus sinensis*, *Rhododendron fastuosum*, *Deutzia crenata* fl. pl., *Rhododendron candidum*, *Azalea Belle Gantoise*, *Roi Leopold*, and *Beauté de Ledeberg*, *Kalmia latifolia*, *Diosma purpurea*, and *Cinerarias*. This received the first prize.

Mr. Young received extra prizes for collections of twelve Hyacinths, distinct, and for five *Amaryllis* in pots, and one also for a tray of *Camellia* blooms. Messrs. J. & C. Lee, of Hammersmith, also exhibited a tray of *Camellia* blooms of great beauty, among which were the lovely *Lavinia Maggi*, *Valtevedo*, and *Countess of Orkney*, and these received an extra prize. Mr. Reeves, of Ladbroke Nursery, Notting Hill, received an extra prize for six handsome plants of *Deutzia gracilis*. Messrs. Lucking, Brothers, received a first-class certificate for a fine collection of forced flowers.

DAPHNE INDICA.

I OFTEN wish that a plant of such easy culture as this were more grown, for it is a general favourite. As soon as the shoots are 2 or 3 inches long slip them off with a bit of heel, and plunge in a stove or Cucumber-bed; they will soon take root. Then pot them off, and keep close for a few days, and when the plants are well rooted in their pots pinch out the top of each, and place them in a house or, better, a pit. They will soon shoot out, and when they have grown 3 or 4 inches pinch off the leading bud of each shoot; by doing this twice or thrice nice bushy plants can be secured the first season, and these will always bloom in the following year if the wood be properly ripened. By following the same plan a second year the plants will be quite large. This system does not seem to weaken them, as their leathery leaves and strong shoots indicate that they are in good health.—W. C.

FAILURE OF THE VERBENA.

If gardeners could carry out the plan of your worthy contributor, Mr. Robson—namely, giving a change of soil and situation, I have little doubt that it would go far not only to prevent the failure of the Verbena, but to improve all other bedding plants. In proof I can give an instance that came under my own observation. Not quite two years ago I entered my present situation, and knowing that there was a scarcity of

Verbenas at the place, I brought cuttings of ten varieties which I had grown for three years. I had them struck in 48-sized pots, and in the spring I took cuttings from them, and throughout the hot weather last summer the plants were a mass of bloom, while those which I found at the place dwindled away in the beds, and before summer was over had to be pulled up and thrown to the rubbish heap.

Verbenas have never succeeded better with me than they have done this winter; the mildness of the season caused them to throw out strong short-jointed shoots for cuttings without any extra heat. In putting the cuttings in if I find any insect on them they are drawn through a little tobacco water. The following I have always found to keep well through the winter:—Defiance, Purple King, Annie Laurie, Tommy, Mrs. Woodroof, Rosa, Snowflake, Laly Palmerston, Impératrice Elizabeth, and Beauty of Acton, a seedling of my own raising.—R. HOLLIDAY, *The Elms, Acton.*

PLANTING VINES.

In answer to your correspondent "INQUIER," I beg to detail the following experiment, as bearing on his question.

About ten years ago I had occasion to plant three large vineries, the borders being made of the best materials within my reach. I selected strong canes one year old, which were cut down to one or two eyes in autumn. Early in February they were started into growth, receiving from time to time a liberal shift, and being plunged in a gentle bottom heat.

About the first week in May I had a trench cut in the border close to the front wall, about 2½ feet wide by 3 feet deep, and filled it with well-prepared stable-manure. When the heat had a little subsided, the ridge of dung was covered with soil, the Vines turned out of the pots, the roots carefully spread out, and the Vines shaded for a few days. The operation much resembled the planting of Melons in an ordinary dung-frame. The result has been most satisfactory. Stimulated by the gentle bottom heat the Vines grew vigorously, and I had the satisfaction of cutting very fine bunches fit for table sixteen months after planting.—A. McK.

NOTES ON BEDDING-OUT.

As we are all now settling in our minds what our planting-out is to be, I should like to invite a few papers from your correspondents on the subject of last year's results, chiefly as respects ornamental-leaved plants.

Though my experience is on a limited scale, still, as I live in a very ungenial climate, and with one of the worst soils in Ireland, it may not be uninteresting to note down what I know will give satisfaction. *Coleus Verschaffelti*, I find, will succeed well in a sheltered situation. I had some very wretched plants which it was not my intention to have made use of, but, having an empty bed, I put them into it on the 20th of July. By the 15th of August they had covered the bed, though they had scarcely a leaf on them when they were planted out. The colour from that time till the frost killed them could not be surpassed.

Amaranthus melancholicus ruber grew stronger than I ever saw it, rather more than 3 feet high, and broad in proportion. I certainly think, however, that its colour was not so good as it was the first year I had it, being more of the ruby and the copper. Is the plant, like *Perilla*, gradually losing its beauty in our climate? or was this simply the fault of the seed? I am inclined to think the latter was the case, for some plants which sowed themselves in another bed, where it had been for the last two years, were decidedly better in colour.

Iresine Herbstii did very well, retaining its beauty longer than either of its rivals, and improving in colour as the season advanced.

The *Amaranthus* lost its beauty by the 10th of September, though it was not killed till October 24th. The *Iresine* was killed about ten days later, and the *Coleus* on October 14th.

Have any of your correspondents tried *Amaranthus tricolor*? I intend to attempt it this year, though my neighbours laugh at me, and say it will not do; surely it cannot be more delicate than *Coleus Verschaffelti*.

I found that no *Calceolaria* stood the dry weather last season so well as *Victor Emmanuel*, and it is a very handsome variety. *Cloth of Gold Geranium* did splendidly, it was put out on the 24th of May. I find that this *Geranium* suffers more from transplanting than any other variety. It always

with me takes a full month to recover itself, but after that is grand for the rest of the season. Its effect at a little distance is quite equal to a bed of *Calceolarias*, and I need not say infinitely more lasting.

In a dry season *Cockscombs*, with a double band of snow-white *Chrysanthemum*-flowered *Asters*, are lovely.

I should like to know which is the better *Oxalis*, I mean as to colour of leaves—"corniculata atropurpurea" or "tropaeoloides;" and whether would *Cloth of Gold* or *Bijou Geraniums* be the better edging to a bed of *Ricinus sanguineus glaucus*?—Q. Q.

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

HABRANTHUS FULGENS (Brilliant Habranthus).—*Nat. ord.*, *Amaryllidaceae*. *Linn.*, Hexandria Monogynia. Native of tropical and southern extra-tropical America. Flowers scarlet, with yellow centre and tube. Introduced by Messrs. Backhouse, York.—(*Bot. Mag.*, t. 5563.)

DENDROBIUM DIXANTHUM (Double-tinted Yellow Dendrobium).—*Nat. ord.*, *Orchidaceae*. *Linn.*, Gynandria Monandria. Native of Moulmein. Introduced by Messrs. Low & Co., Clapton. There are two tints of yellow in the flowers.—(*Ibid.*, t. 5564.)

GLADIOLUS PAPILIO (Butterfly-flowered Gladiolus).—*Nat. ord.*, *Iridaceae*. *Linn.*, Hexandria Monogynia. From the Cape of Good Hope. Flowers various tints of pink, yellow, and purplish crimson.—(*Ibid.*, t. 5565.)

PERISTROPHE LANCEOLARIA (Lance-leaved Peristrophe).—*Nat. ord.*, *Acanthaceae*. *Linn.*, Diandria Monogynia. Native of Moulmein. Herbaceous. Flowers pale purple.—(*Ibid.*, t. 5566.)

BATEMANNIA GRANDIFLORA (Large-flowered Batemannia).—*Nat. ord.*, *Orchidaceae*. *Linn.*, Gynandria Monandria. Native of low elevations in New Granada. Flowers white variously streaked with purple, and stained with yellow.—(*Ibid.*, t. 5567.)

SPHACELE CERULEA.—*Nat. ord.*, *Labiatae*. Flowers pale purple. Very like a *Stachys*. Probably a native of Chili.—(*Floral Mag.*, pl. 281.)

NERINE FOTHERGILLII.—Scarlet-flowered. A very old kind.—(*Ibid.*, pl. 282.)

MARANTA ROSEA-PICTA.—Native of equatorial regions of the upper Amazon, between Loreta and Iquitos. Leaves of darkest sap-green, with the midrib, and a band near the margin, pink.—(*Ibid.*, pl. 283.)

POMPONE CHRYSANTHEMUMS.—The following are introduced by Mr. Salter, Versailles Nursery. *Fairy Nymph*, white. *Rose d'Amour*, white, with rosy-tipped petals. *Torrida*, golden yellow.—(*Ibid.*, pl. 284.)

LOBELIAS.—*Distinction*, rose cerise, with pink shade. *Peach-blossom*, beautiful peach-blossom colour.—(*Florist and Pomologist.*)

HOUSE-CULTURE OF CUCUMBERS.

FULLY agreeing in the truth of the sentiment expressed by Mr. Read, "that discussion and inter-communication will do much to advance the cause of gardeners and gardening," and having read with interest "PETER'S" account of his system of cultivating Cucumbers (although I must say I wish he had been a little more explicit), I venture to send a few remarks descriptive of my own system of management.

Mine is a six-sided house, four sides of the roof being double-glazed; the other two, towards the north and overhung by trees, are slated; the sides are single-glazed. It is fully exposed to the east, south, and south-west, and from its peculiar shape is adapted to catch every gleam of sunshine; it is, therefore, very suitable for the winter forcing of Cucumbers. It is heated by one of Pierce's patent boilers. The eight-inch flow-pipe passes through a chamber covered with slate; on this is a layer of fine sand, which affords a nice bottom heat for propagating-purposes, and, being kept constantly moist, insures a humid atmosphere. The return, a single four-inch pipe, is brought out of the chamber and carried round the house for surface heat. The bed being on the north side, and generally occupied with other things, I am reduced to the necessity of growing my Cucumbers in pots, and by following the system I shall detail, I have been very successful.

I am expected to keep up a constant supply of good Cucumbers from the middle of October till June, and to accomplish this, I commence operations about the last week in July by sowing some seeds singly in small pots, placing them in a comparatively cool house. The young plants soon make their

appearance. When one rough leaf is formed, I replot them into four-inch pots, using a rather rich compost; and as they grow they are tied loosely to a small stick till about 18 inches high, when they are stopped. They are then ready for their fruiting-pots. For this purpose I use pots of about 15 inches in diameter, thoroughly drained with potsherds and broken bricks. Now for the soil. While the plants have been growing the soil has been undergoing a little preparation. Unlike "PETER," I prefer fresh-cut turf which has been a week or so in the middle of a bed of strong fermenting horse-droppings; by this means it is heated sufficiently to kill all the roots of grass, &c., contained in it, and becomes highly charged with ammonia. I use this in a rough, lumpy state, warm and steaming from the heap, without any admixture whatever; the roots immediately strike into it, and the plants grow amazingly. At first I only just cover the ball, adding more soil as the roots advance. When the soil in the pots becomes exhausted, I top-dress with a little of the same kind of soil, and water with liquid manure.

When the plants throw out their laterals I only leave the upper three or four, and as the plants grow and spread I stop every shoot at the first joint, unless wanted for cuttings. About the middle of December, and sometimes earlier, I commence taking cuttings whenever an opportunity offers, to replace any plants that may seem exhausted or weakly, which they will sometimes be during the dark days of winter, in spite of the utmost care. This plan of replacing worn-out plants with vigorous young stock must be closely followed if handsome fruit be desired.

The plants are never syringed, but a moist atmosphere is insured by copious sprinklings of the bed, pipes, and floor twice or thrice a-day. The thermometer is never allowed to exceed 70° with fire heat. It sometimes rises to 85°, and even 90° by sun heat. The average night temperature is 58°. The pots stand on a slate slab close to the front lights, and are kept about an inch above the slate by some pieces of tile in order to allow the warm air of the house to circulate under as well as around them, and also to insure a free drainage. I have tried many sorts, but find nothing to excel, or, indeed, equal the *Sion House Improved*. Perhaps at no distant date I shall give the details of my practice in growing and ripening a crop of Melons in pots, in the same house, in the intervening months.

Will "PETER" kindly give us a few more particulars as to temperature, what depth of cotton waste he uses, &c.?—
PETER'S BROTHER.

RAIDS AFTER FERNS.—No. 4.

WINTER RAID.—TEIGNMOUTH.

ABOUT fifteen miles west of Exeter the English Channel takes a gentle sweep inland; lapping up to the base of old red sandstone cliffs and leaping over a sandbar, it carries its salt waters by the side of a Fir-crowned headland, called the Ness, into the picturesque river Teign, which proudly swells itself into lake-like proportions at high water, giving additional loveliness to meadows of emerald, and corn fields golden in summer and ruby-coloured in winter. Facing the east, with a barren sandy flat, called the Den, in front, where wild-beast shows contend for pre-eminence with photographic studios and uproarious games of football, there are crescents, and places, and Belle Vues, and public rooms, and baths, sheltering a bright little town of about six thousand inhabitants which finds congregations for two English and one Roman Catholic church, and for chapels of a variety of incongruous theological opinions.

Teignmouth, or, as it is called, Tingmuth, is a town of considerable spirit, which develops itself in sundry spasmodic efforts to distinguish itself, in many of which it succeeds with tolerable effect. It has its lifeboat, which presents a "very swashing and martial outside" to the beholders as it is occasionally paraded through the town on a triumphal car, looking so very bright and new as to be suggestive rather of sunshine and blue seas, than of those grand heroic times when Devonshire Drake gained a world's applause by his deeds of sailor daring. A pier is in course of building, which will bring yachts, and a still greater number of pleasure-seekers; while the good drainage and salubrious air invite those who are seeking for health, and who, with care, may enjoy a happy combination of health and pleasure.

The amusements are, perhaps, scarcely of the same aristocratic nature as those of its sister watering-place Torquay. Concerts and balls are of rare occurrence, and but moderately

attended; but there are plenty of cheap entertainments, and the public who one day pay a shilling to see spiritualism in full blow, the next day pay another to have their new-born faith shivered to atoms, and one is inclined to wonder how any errors exist, so many shillings are paid to have them exposed; M. Dobbler cuts the Gordian knot that binds the Davenport brothers, and Signor Gavazzi takes away all standing-ground from under the Pope's revered toe; and every error picks the pocket of its neighbour. And, lest these amusements should not suffice for all minds, Nature has stepped in, supplying others with a liberal hand, so that few places have a greater share of them than Teignmouth. Beautiful madrepores strew the shore across the ferry at Labrador, and sea beasts and rare seaweeds and shells are to be found lurking amongst the sea-laved rocks.

Within a pleasant walk there is a sandy waste called the Warren, which furnishes many rare wild flowers, amongst them the little pale blue *Trichonema columne*, or *Dulbecodium*, the Warren being its only English habitat, and it resists every endeavour to naturalise it in other soil.

The winter in Teignmouth scarcely deserves the name of winter, some flowers grace every month of the year, and ere February blows itself into March the *Galanthus nivalis* follows the wake of the *Primula vulgaris* and the *Vinca minor*; the *Viola palustris* encroaches on the white *V. odorata*, and the *Narcissus pseudo-narcissus* weeps at the loss of its neighbour the sweet-scented *Petasites vulgaris*; while in the hedge-bank the fragile tiny *Potentilla fragariastrum* is the herald of the more welcome *Fragaria vesca*, which promises not only beauty in spring, but also a fruitful summer. The winter in Teignmouth has all these, and added to these it has its Ferns.

When the *Filix-mas*, the *Filix-femina*, and the *Lastreas* are for the most part "gone underground to see their mother root," the more hardy *Polystichum* still flourishes, and furnishes many a beautiful variety to reward the patient hunter. Nor is the decoration of Fern-land left to the *Polystichums* alone, the *Asplenium adiantum nigrum* may be sought after with great effect, the absence of other leaves and blossoms making its bright fronds all the more apparent. *Aspleniums trichomanes* and *marinum* may also be found; but where? *Marinum* has a wayward choice, and has located herself in the tunnels of the railway, where hardy spirits, furnished with permission and a lantern, may find her. In the overhanging cliffs she also makes her home, but is fast disappearing beneath the keen eyes of Fern-collectors. But it is not on the walls of railway tunnels, nor on the scarp cliff that my winter raids are made, but up sheltered lanes, whose high banks, covered with grassy foliage, from which delicate blossoms shine like stars, afford thousands of specimens of the, *par excellence*, Devonshire Fern.

The evergreen character of the *Polystichum angulare*, with its endless variations of delicately chiselled fronds, must ever make it a general favourite. There is, first, its common form, soft, feathery, lanceolate fronds, bi-pinnate, or divided into pinnae, and these again into pinnules, which are attached by a distinct stalk to the rachis of the pinnae; the shape of the little pinnules somewhat obtuse, with an ear-like projection at the base, running in an outward direction towards the apex; each pinnule serrate, and the serratures have bristles; the sori terminal or on the upper part of the frond. Should there be any distinct departure from the above description, such as the anterior basal pinnules being much larger than the others, or divided again, thus becoming tri-pinnate, or nearly tri-pinnate, the Fern-collector will at once know that he has a variety of the species, and not the original type. The Teignmouth lanes furnish a goodly company of these beautiful varieties, each presenting some distinct feature, which separates it entirely from any approximating form.

As I was lately hunting up the Holcomb lane I chanced to meet with a magnificent specimen of decompositum, of all the varieties of *P. angulare* the most free-growing and jolly-looking; it rivals *subtripinnatum* in size, but the latter has a stiffer growth, and its pinnules are more acute. Soon after I came on *subtripinnatum*, and for the moment I thought I had found *tripinnatum*, so much divided were the basal pinnules, but as the little pinnulets had no distinct and separate stalk, my first transport settled down into a quiet satisfaction, and I was rewarded by finding a little further on the pretty *hastulatum*. In this variety the entire frond is so finely and regularly cut that when held up to the light it appears like lacework; the pinnules are small, distinct, sharp in outline, and with a lobe or ear which stands out clear of the next pinnule. Still further on I found *Polystichum angulare acutum*, the name of which defines its character, the apex of frond, pinnae, and pinnule being acute

in a very remarkable degree—so acute, that having once heard the name I think no one could mistake the Fern.

But it is not Ferns only that I have found in that Holcomb lane. Wandering there one day we came on a poor, almost shoeless, footsore sailor lad; looking so tired and hungry, we stopped to speak to him. A stranger, knowing no word of English, he told us in French that he was from Holland, and on his way to Plymouth. Walking from Exeter he had lost his way. "Had he money?" Only a few halfpence, but he did not wish for more. "Oh, no," he said, when we offered him silver; "you see I did not beg. You know I did not beg." He spoke so vehemently that I wondered; so I said, "Certainly you did not beg; but, nevertheless, accept a little gift." "Oh! no, it was not possible. He was only out of Exeter jail that very morning because he had found himself without silver, and demanded some. Ah! he did not like England, she was hard to strangers. He was hungry, and he could not beg." I looked in the honest face and believed the lad, so we took him home. He had never seen an English home. I offered him a chair. "Never, never in your presence," he said. We gave him meat and bread, and spirits, and then we took him to the railway, and gave him a ticket to Plymouth, with money for a night's lodging. Tears came in the poor fellow's eyes. It could not be true. He had never seen me before. Was I English? and then he added softly, when I told him why it was, "Yes, yes, I also have a home, and a sister married to a pastor." And so we parted, never to know each other's name on earth; and I often wonder how the Dutch lad will describe the party who helped him in his need; for verily it must have seemed a strange one, that party of ladies and gentlemen armed with steel weapons and huge baskets, searching so diligently for weeds in the hedgerows of England.

Within a walk of Teignmouth I have lately found *Polystichum angulare intermedium*, and, I believe, *biserratum*. The

texture of these Ferns, so far as my experience goes, differs considerably from those of other varieties of *P. angulare*; both primary and secondary rachides are stiff, and the pinnules are connected with the rachis in all but the lower pinnae by a winged stalk. I found in the same hedge dissimilar: this is a very curious variety, the pinnae being scarcely in any two alike; some are forked at the end, some do not contain more than five or six pinnules, while others end abruptly in only two; the pinnules are also different in shape and size, while the texture of the whole frond is something like that of *intermedium*.

Another very interesting variety of *Polystichum angulare* growing near Teignmouth is the densely pinnuled *quadratum*, with its stiff narrowish fronds, the pinnae of which have imbricated pinnules, neat, roundabout little things, the ear-like lobe of which hides itself beneath its neighbour's sheltering wing. It is unlike any other variety known to me, and had not a high authority named it for me, I fear I should have called it *imbriatum*; but this latter has a slightly "winged petiole," which *quadratum* has not; moreover the basal anterior pinnule is but a trifle larger than those next succeeding.

Other varieties that I have found still remain unnamed, and I doubt not but that there are many others still to be found. The beautiful forms of *proliferum* *Wollastoni* and *cristatum* are natives of Devonshire, and to these *Holeana* has lately been added, the latter being found within a few miles of Teignmouth.

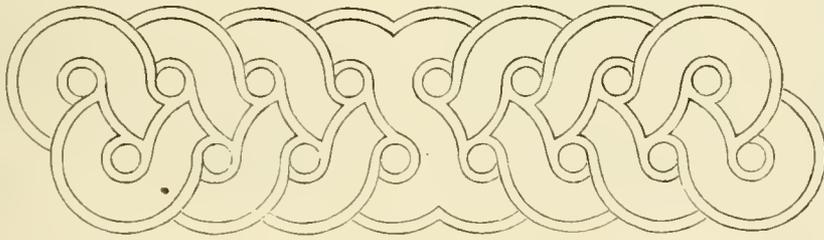
Of the *Asplenium adiantum nigrum*, Teignmouth furnishes many a goodly specimen. I have found them acute and obtuse, with intermediate forms. The *flabellatum* was found near Bishop's Teignton, and the *Bellairsie*, in the neighbourhood of Haldon; and all the Ferns that have been enumerated can be found on a winter's raid while inhaling purest oxygen with a fair mixture of ozone (if ozone can be exhibited in winter!) is one of its component parts.—FERN-HUNTRESS.

FLOWER-BORDER.

I VISITED a friend of mine a few days ago, who showed me a flower-border plan, which I send. It struck me at the time as being well adapted for planting bulbs in the small compartments, bedding plants in the large ones, and standard Roses in the circles. In winter it is eligible for coloured materials in the small compartments and in the circles, with some nice dwarf plants in the beds. With a judicious arrangement it would look well all the year. It is not laid out at any place to my knowledge.

It may not be out of place for me to describe the sort of compasses I use when doing such work. It is nearly similar to the beam compasses described in the "Gardener's Assistant," at page 134. I took a piece of deal board 1 inch thick, 2½ inches wide, and 10 feet long; I cut it straight along the middle from end to end; then I took a piece of elder wood 2½ inches long, removed the pith, and tied it at the end of the beam between the two sides. I then took two pegs, one

about 12 inches long, and the other about 8 inches in length. The end of the long peg, *a*, I cut quite round, so as to turn freely in the elder, and the end of the other peg I cut



Beam-compasses.

flat nearly to the same thickness as the elder, and so that the beam would rest on the shoulder, as shown at *b* in the engraving. To secure the peg, *b*, from moving from its place, I cut a piece out of it above the beam,

so as to form an eye, as at *b*. I then made a pin in the shape of a label, with one end smaller than the other, so as to put it in the eye above the beam to tighten it. There is no trouble in pulling the pin back, shifting the peg to the required place, and putting the pin back again. It is scarcely

necessary to say that the peg, *a*, is put into the ground in a perpendicular position, and the elder end of the shaft dropped down on it, so as to revolve around it as the axis. The peg, *b*, describes the circle, and passes over any peg that may be put in the ground to mark other parts of the figure.—M. O'DONNELL.

WORK FOR THE WEEK.

KITCHEN GARDEN.

DURING the last month we have had such a continuance of wet and unsettled weather that little progress has been made in the sowing of seeds, or even the digging and trenching of ground. The late drenching rains will convince the owner and occupier of every plot of ground, of the necessity and importance of thorough drainage. Ground that is thoroughly drained takes but a few hours to drain off the superfluous moisture, and, under such circumstances, it is soon in working condition;

whereas, ground that is imperfectly drained will be days, and in some instances weeks, before it be in a fit state for the reception of seeds. The gardener who has his ground thoroughly drained will have his crops appearing above the surface before those whose ground is undrained will be able to deposit the seed. Proceed without delay at every favourable opportunity in preparing and cropping the ground, according to last month's directions. After the late rains it will be advisable to pass a heavy roller over the gravel walks to set and bind them well for

the season. Take every opportunity to destroy slugs, which the recent rains have brought out from their winter quarters in abundance; the use of quicklime on a warm evening after a showery day, is a well-known remedy. *Beet*, sow a little Red, but not much, as the chances are that it will run to seed. *Broccoli*, make the principal sowing of favourite sorts to stand the winter; a sowing of the Dwarf Hardy Russian made a fortnight hence often bears frost better than earlier sowings. *Cauliflower*, continue to plant out the strongest plants kept through the winter; those which have been brought on under hand-lights will be getting sufficiently advanced to be benefited by applications of liquid manure to keep them in a free-growing state, otherwise we may expect some to button. Let the soil be constantly stirred about them. *Carrots*, the main crop of the Long Red or Altringham for winter use, ought to be sown in deeply-trenched ground. *Kidney Beans*, put in a small breadth of some early sort on a warm, dry, sheltered border, and plant a quantity in small pots, to be raised in a cold frame, and planted out as soon as danger of frost is over. *Onions*, if the main crop is not sown, the first opportunity of doing so must be embraced. *Peas*, continue to earth-up and stake as they advance. Take care that those just coming up do not want for surface-stirring, which will be the more necessary after heavy, dashing rains, which consolidate the surface of the soil. Make successional sowings of Radishes and salads; small sowings are best, each made as soon as the other is up. Thin out, and transplant where desirable, all seedling crops sufficiently advanced.

FRUIT GARDEN.

The disbudding of Peaches and Apricots must be commenced forthwith by removing all the foregoing wood shoots, and a portion of those on the lower side of each shoot also. As blossom-buds are very thick this year, it will be proper to take off a portion of these where ill-placed. Keep a sharp look-out for aphid on the young shoots. After high winds, fresh-planted trees in the open quarters should be finally looked over, and the earth pressed firmly about them. The observations made last week on the subject of disbudding had reference to Peaches and Nectarines, and I will now concisely resume it. As the trees advance in age, and require a full complement of wood, and circumference according to the space allotted to them, it will be found necessary to pursue this system of disbudding with still greater severity, in order that the trees may be maintained in a healthy, fruit-bearing condition, and not weakened by crowding with too much wood. For this end we must encourage only the young shoot nearest the base of the fruit-bearing shoot; but as the terminal shoot will be necessary for the proper maturation of the fruit, it must be closely stopped at the last thinning, and any attempt at growing afterwards must be carefully removed, so as not to injure the leaves. As soon as the fruit is gathered, it is best to remove these stopped shoots down to the young ones, which are greatly strengthened thereby, and it also exposes the young wood more to the influence of the sun at a season when the exposure is most needed for its ripening.

FLOWER GARDEN.

Commence in earnest with mowing, and cut down close; the grass will then mow better all the season. Finish edging walks, clip Box-edgings, plant Gladioluses and Ferrarias, plant evergreen shrubs, if you are obliged; and, if so, take care to have every fibre carefully preserved, have great balls of earth and holes dug much larger than the ball will fit into. Attend well to watering, and fix the stakes to prevent the injurious effects of the plants being windwaved. In planting shrubs and trees, if due care is not taken, disappointment will surely follow; therefore do whatever has to be done quickly, and, let me add, do it well. It is now a good time to plant that stately flower the Hollyhock, which suffers much from frost if planted too early. We have no hesitation in recommending this noble flower to be much more extensively cultivated than it is. It is used very extensively in Battersea Park, and to those who have seen it there during its flowering season no eulogium can be necessary.

GREENHOUSE AND CONSERVATORY.

Pelargoniums, herbaceous Calceolarias, and Fuchsias are now advancing rapidly, and the early plants of the former two are showing blossoms. Take care to stake and tie the plants neatly without loss of time, and some of the old growers say that manure water is good for them after Good Friday. This, however, I think, depends more upon the pots being filled with roots than the day of the year. One of the best growers of the

Pelargonium never watered with manure water until the trusses were up and the pots filled with roots. Fuchsias will now be the better of a little shade during bright sunshine, and very liberal treatment will not be thrown away upon them. The shifting of all specimen plants should be now completed. Too much care cannot be taken in watering to see that the water does not escape by the side without moistening the old ball, also to guard against over or under-doing the supply. Keep a moist atmosphere, sprinkling the plants with tepid water once or twice a-week, and pay due attention to the extermination of insects directly you can perceive them. If the plants in the borders of the conservatory are dry, or any of the climbers, give them a good soaking of weak tepid manure water. Sow liberally Chinese Primroses and Cinerarias; these well attended to will make strong autumn-flowering plants. The Himalayan *Primula denticulata*, although hardy, forms a nice dressy little plant for the mixed greenhouse. Let Camellias making wood be shaded and frequently syringed. Those who wish to have Camellias in blossom from October to May must take care to force their plants into wood successively. If a given stock be divided into three portions, one portion to be subjected to this process in February, a second in March, and a third in April, the object will be effectually accomplished, provided the subsequent treatment be what it ought to be.

PITS AND FRAMES.

Continue potting-off stock for the flower garden, also making cuttings constantly of Verbenas, Fuchsias, Petunias, Dahlias, Geraniums, &c.; they will all be wanted for some purpose. Shade newly-potted Stocks, and more especially cuttings, carefully; and remember that in making cuttings the leaf should not be first allowed to flag, and then an attempt be made to restore it by abundance of water: the leaf must never be allowed to droop. See that such climbers as Rhodochiton, Manrandya, Lophospermum, Tropæolum, &c., are propagated and cultivated for blanks or trellissing, &c.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

A few dry days and a bright sun have done much to dry the soaked ground, and prepare it for the reception of Onion and other seeds, such as those of greens, Broccoli, Peas, and Beans. There are just now many complaints of the vast extent of catalogues of seeds that perplex by their very variety. For small gardens especially we may mention what, if received true, will not be likely to disappoint.

Onions.—Sow James's Keeping and White Spanish, and Silver-skinned for pickling.

Garden Beans.—Early Mazagan for earliest and latest crops, Longpod and Green Windsor for summer, and the Dwarf Fan where there is little room, as the Beans may be grown in rows a foot apart.

Peas.—Dillistone's Early and Sangster's No. 1 for earliness, the first the earlier, the second the better bearer; Ne Plus Ultra the best for a late Pea. Burbidge's Eclipse, Veitch's Perfection, and Harrison's Perfection are fine medium-height Peas; and Dickson's Favourite is a good Pea that bears heavily, is of fair flavour, and comes in between Sangster's and the earliest Marrowfats. Dwarf Peas, as Tom Thumb, Bishop's Longpod, &c., are useful chiefly where room must be economised. They come in early at the foot of a fence in a warm place.

Carrots, we will only sow moderately as yet. We prefer the Early Horn, the Long Surrey, and the Altringham. In rather stiff thinnish soil the Horn often does wonders, when the longer kinds come forked.

Parsnips should be sown as soon as possible. We prefer the Hollow-crowned; the Student comes of a large size, but sometimes it is a little hard at the core.

Cabbages.—Some of the Battersea may be sown for summer use. We prefer for the main crops Atkins's Matchless when it can be obtained true; ours has not been so for some time, and our ground is too small for seed-saving. The Rosette Colewort is the best to sow in May for autumn and early winter use.

Cauliflower.—Not to perplex, we find the London Early Cauliflower suitable for all sowings.

Broccoli.—Cauliflower Broccoli, Snow's Winter Broccoli, Early Purple Sprouting, Willcove, and Miller's Dwarf White will furnish a good supply.

Borecole.—For one sort choose Scotch Cabbaging Kale. Cot-tager's Kale is good, and the Variegated pretty.

Brussels Sprouts.—The common, from imported seed, is still, all things considered, the best. The Dalmeny varieties are good; but on the whole are not so profitable for general purposes.

Turnips.—A few White Dutch. For main garden crops the American Red Top is the best, sweetest, and most crisp.

Leeks.—The Musselburgh is as good as any.

Radishes.—We almost entirely use three sorts—Scarlet Short-top, and White and Red Turnip-rooted.

Kidney Beans.—Unless in warm places it is too early to sow Kidney Beans out of doors. In our opinion nothing beats the China Dwarf, called often Robin's Egg, for general purposes. Next is the Cream-coloured; and the Newington to be gathered young and cooked whole. Scarlet Runners of course.

Celery.—Incomparable White for main crops, it takes so little room, should now be sown under glass, if possible—a hand-light will do. Cole's and other varieties are much larger.

Spinach.—Round-leaved, and round-seeded, for summer, Prickly-seeded, or Flanders, in autumn for winter.

These are the seeds to which attention must now be chiefly directed, and more depends on getting them into the ground in good condition than sowing them very early, when the ground is in a clammy wet state. A little time lost in sowing is soon made up if the ground is nice, sweet, and mellow. A great deal of seed is destroyed by being put into the ground when this is in a wet clammy state. There is the risk when at all deeply covered that the seed absorb so much moisture as to rot, and besides, if the soil is rather stiff, the seed is wrapped in it, as in a piece of soft indian-rubber, and perishes for want of air and its oxygen reaching it. Ground so puddled will scarcely become kindly all the season, as rains do not pass freely through it. Seeds sown in nice, dry, mellow soil scarcely ever suffer from wet afterwards, as the showers pass freely through it. All these considerations point to the importance of having some March and April dust for seed time. We mean not dust on the fields and gardens, but dust on the highways, for if the soil is too dry the germination of the seeds is unduly arrested.

Ran the hoe through growing crops, and hoed and raked some walks that from being shaded had become a little green. Swept the others hard to give them a fresh appearance, and will fill up some blanks in the edgings as soon as possible.

Gave a little more earth to Potatoes in frames, as the tubers were running rather near the surface; watered Peas in pots in an orchard-house beginning to show bloom; gave abundance of air in sunny days to Radishes, Carrots, Lettuces, Cauliflowers, &c. Sudden changes affect all plants under glass less or more. In the bright hot sun of Tuesday, after a period of dull weather, Potatoes, Kidney Beans, &c., began to flag, though the examination of the soil showed they were quite moist enough. A slight syringing and slight shade for a couple of hours made them all right. After a course of dull weather the plants are unable to bear the rapid evaporation which the sun so suddenly causes, and hence a slight shading will often be of great use for short periods under such circumstances. The great point is to allow the shade to remain no longer than is absolutely necessary, as all growth in shade is comparatively weakly.

Spawnd a piece of a shallow Mushroom-bed, and prepared a piece more with fresh material, working up a part of the old bed with the fresh dung, owing to being scarce of materials. The only objection to these shallow beds is that they generally do not bear long, or regularly, and hence the necessity of successions. One reason why we make even these shallow beds of poorer materials than we used to do, is to humour the prejudice for thinnish Mushrooms. The thick, fat, juicy fellows which we used to delight in, do not suit every one. For Sea-kale, Rhubarb, &c., see previous weeks.

FRUIT GARDEN.

As to general work, we are rather behind with nailing, &c., out of doors. We deferred pruning Gooseberries, and we presume the delay will matter little, as after all our washing, and dredging, and stringing, the birds will have it pretty well their own way. We stated the other week, and repeat it, that if gardens are to be made preserves for game, they will soon be little else than preserves for that game and its attendant vermin. There is scarcely even a Laurel bush that does not become the roosting-place for at least its hundred of small birds. Not only do Pear trees, &c., suffer terribly, but we noticed that some nice Thorn trees were having the most forward buds regularly picked out. As a rule, no class in the community are greater admirers of the little birds than gardeners; but when there are innumerable thousands instead of

scores, and trees loaded with bloom-buds to-day are cleared pretty well to-morrow, a man begins to feel that he may have too much of the poetry of birds. It is of very little use netting under such circumstances. Do what you will the birds will find their way under it, and take what they want, and especially in the morning as soon as the day breaks. Under such circumstances there will be no safety except in securely netting vegetable and fruit gardens all over as high as the walls for a number of months in the year. Netting individual places seems only to entice the robbers to see what is there, and no fastening will keep them out.

The orchard-houses, especially the first, have been a picture, and Tuesday, with its powerful sun, and the free ventilation, would pretty well secure the setting of the fruit. There has been quite enough of wind to render any brushing of the strong prominent blooms unnecessary. This house we shut up early, the other is left open in favourable weather till bedtime. In the first house, Tuesday was the only day lately in which all our ventilating power was at command, as even now, and especially when the fruit is set, we will use more sun heat shut in, to bring the house on in succession to the Peach-house. The trees at the back will not be such a show after Tuesday, as the bright sun, and the breezes of wind, have caused a good many of the petals of the bloom to drop. No insect of any kind has as yet appeared. Judging from the frequent directions about smoking houses, plants, &c., the bill for tobacco must be no small affair in some places.

A few of the Tom Thunb Pea pots are showing bloom, and if there be a few sunny days a good many will be out. This Pea must be gathered early enough when under glass, or it is apt to eat hard. It must not be so large as it might be out of doors. The glass seems to harden it.

Peach-house.—Thinned out shoots, tied them, and exposed the fruit in the Peach-house. Took off a single twig carefully, as it had some curled leaves, and in these were a few green fly—the only appearance of anything in that shape not wanted that we have yet seen in the house; and removing the twig, which could be well spared, was better than washing or smoking. This house as yet has had nothing done to it for insects, because except on that twig none as yet have appeared. We had more than our share of them three years ago; and were we left untroubled this season, which it might be too much to expect, we would still in another season use such preventives as were detailed as being used in winter and spring.

This Peach-house, of which the roof is at an angle of 45°, is the best place for setting early Strawberries that we have, and a shelf of plants with the fruit swelling was cleared off to finish in the pits and vinery, and they were replaced by plants showing bloom from a pit and frame. This all makes work, but in the back of the Cucumber-pit we could swell the fruit more quickly, and with enough of light to flavour them, than we could do in the Peach-house, whilst neither in the Cucumber-pit nor the vinery could we give air enough to suit the Strawberry when setting. Owing to the gleams of sunshine the fruit has been good in flavour. We mention this shifting of the Strawberry plants to show that much may be done in this way in little room, but at the expense of a much greater amount of labour than when plants can be set in and perfect their crops in one place before being removed. A place for everything is by far the most economical as respects labour; but, then, to have a Strawberry-house, a Melon-house, a Fig-house, a Geranium-house, a Heath-house, a New Holland-house, a bedding-plant-house, a Rose-house, &c., involves a considerable sum for a first outlay, and this in general is so deterrent that the most that can be obtained from a small space is too often the great object, though that causes a greater amount of labour and of continued consideration. For Vines, Figs, &c., see previous weeks.

ORNAMENTAL DEPARTMENT.

Rolled the lawn and walks in pleasure grounds. Turned over ridges and numerous beds left rough for bedding plants. Pruned shrubs and Roses. All Briars for budding should now be planted. Picked up all wood and leaves broken and drifted by the late high winds; the half-rotten hotbed dung, consisting chiefly of tree leaves that had been used as a slight dressing for the beds, was turned down as above stated, by a very shallow spit of the spade, as if very dry it would blow about on the grass, and the birds would scratch it, and it had lain long enough exposed to be quite sweet enough for the purpose. The airing and sweetening of this slight surface-dressing is a matter important to success. Of course, for vegetables we should not like to waste its virtues on the air, but would dig it down at

once; but, as stated a week or two ago, it becomes rather a different matter when we wish abundance of bloom instead of mere luxuriance of foliage.

In cold pits too much air cannot be given in mild days to Auriculas, Carnations, Wallflowers, Stocks, and Mignonette sown in autumn. Fine useful Mignonette may be had by sowing now in a mild heat, with a rather close atmosphere until the plants are an inch in height. Now is a good time to sow or prick-off for bush or tree Mignonette in pots. Calceolarias want all the air possible. We have not yet been able to plant out, so as to thin the November-inserted cuttings, but we must do so ere long. Ran the fingers and then a pointed stick through the surface of Violet-beds, Neapolitan and others, to let the air into the soil, and render it sweeter. Of all Violets, the Neapolitan are our favourites for scent, but bunches of them and blues look very nice when placed alternately. We hope to have the new ones next season. The double blue is a great favourite with many. It has suffered much with us this year in the borders, owing to the excess of wet, and so has the Lily of the Valley, which, in general, can stand a good deal of moisture.

Pelargoniums in ainery which was becoming too hot for them have been removed to the conservatory, and the cold or late inery, which is beginning to bud sooner than we want it. The stage, &c., in the inery has been filled with variegated Geraniums, fresh-potted singly, to be turned out and hardened off afterwards, as there is plenty of light still for them, and the heat will bring them on a little. Newer kinds of Fuchsias have also been repotted and placed there, just to give them a move before they go to a colder place afterwards. In the inery farther advanced, the stage is covered with some forward variegated Geraniums, fine-leaved Begonias, just shifted, and Gloxinias the same, where, as the Geraniums are removed, the latter will find themselves at home in the heat and the comparative shade, whilst the springing of the shelves and the floor will give enough of atmospheric moisture for them and the Vines. A little sweet dried eaked cowdung, made rather fine, helps these Begonias and the Gloxinias very much, and the former often produce the finest leaves when rather under-potted, and in that state and size come in better for house-decoration than when in larger pots. The leaves, also, will continue a long time fresh in a room when separated from the plant. In halls, &c., where there are no fires, Cinerarias will remain fresh a long time in pots, or planted in vases; but in winter and spring they stand a very short time in rooms with large fires that dry the air, unless the large leaves are frequently damped or sponged. For this purpose the older small-leaved kinds are the best. However fashionable it may be to stud entrance-halls, &c., with plants in bloom, the want of light alone makes them often look sadly out of place. Potted and divided Ferns, and fresh-packed baskets of Stanhopeas, and other Orchids, &c.

Propagating.—A good portion of the week, however, has been taken up in pricking-out and propagating. In relation to a number of inquiries we may here shortly note a few points.

1st, Size of cuttings. Every joint of most plants may be made into a plant. Where there is a shoot or bud on each side of the joint, the joint may be split up the middle, and two plants made from it; but, like striking Geraniums from leaves, it is a wearisome process, and much time is lost before you obtain a fresh plant. We have no faith in striking Geraniums by leaves, unless there is a bit of the stem at the bottom of the leaf, and a bud there, either perceptible or imperceptible. Many plants, as Cucumbers and Melons, as well as Geraniums, will emit roots from leaves; but it is long, if ever, before they accumulate enough of organised material to throw up a fresh shoot. In general it is best to have cuttings from 1 to 3 inches in length.

2ndly, In making the cuttings, cut through at a joint with a clean knife. This cutting at a joint is necessary in all hollow-stemmed plants, and in all cases prevents liability to damping; remove the leaves then at that joint, and shorten these above them, allowing the rest to remain to continue growth. We would not remove many leaves at present, because,

3rdly, All cuttings at this season will strike faster if they receive an extra stimulus in the way of heat, but not so much as to over-excite the cutting to elongate upwards. The modes of obtaining this heat we will allude to next week.

4thly, In proportion to the leaves left on the cutting and the distance it stands from the glass, will shade or no shade be required. At present we have a number of lights in a pit filled closely with cuttings striking of Verbenas, Lobelias, Ge-

raniums, Heliotropes, and Ageratums; only the lower leaves of the cuttings were removed, a few of the larger shortened, but most of the rest left on, and they have scarcely had a bit of shading. They stand from 15 to 18 inches from the glass, and in such a day as Tuesday they had a skiff once or twice from the syringe to lessen evaporation.

5thly, We like to see striking in water and sand and water, and it is a pretty amusement; but then the cuttings must be looked after as soon as the roots are formed, and transferred to nice, warm, sandy soil. When much is done it is as well to place the cuttings in material in which they will stand and flourish some time after they are struck, and hence we prefer, after good drainage, light sandy loam and a little leaf mould, with a slight coating of sand on the surface, which, if kept rather moist, will prevent air penetrating to and exhausting the base of the cutting. In proportion to the additional heat used in striking cuttings, so will greater care be required in hardening off the cuttings afterwards. Those with but few conveniences should do most of their propagating in summer and autumn. The sun will then give the heat which must now be supplied artificially by fire or fermenting material.—R. F.

COVENT GARDEN MARKET.—MARCH 31.

THE demand has been somewhat more heavy in consequence of the requirements of the markets in the North for early Cabbages, out-door Rhubarb, &c., and prices have therefore been maintained; but forced fruit has barely kept up to our former quotations.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1/2 sieve	3	0	5	0	Melons..... each	3	0	5	0
Apricots..... doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries..... lb.	0	0	0	0	Oranges..... doz.	6	0	12	0
Chestnuts..... bush.	8	0	16	0	Peaches..... doz.	0	0	0	0
Currants, Red 1/2 sieve	0	0	0	0	Pears (kitchen) .. doz.	4	0	8	0
Black..... doz.	0	0	0	0	dessert..... doz.	6	0	12	0
Figs..... doz.	0	0	0	0	Pine Apples..... lb.	8	0	12	0
Filberts..... lb.	0	0	0	0	Plums..... 1/2 sieve	0	0	0	0
Cobs..... 100 lbs.	0	0	16	0	Quinces..... 1/2 sieve	0	0	0	0
Gooseberries 1/2 sieve	0	0	0	0	Raspberries..... lb.	0	0	0	0
Grapes, Hothouse, lb.	15	0	25	0	Strawberries..... oz.	1	0	3	0
Lemons..... 100	6	0	10	0	Walnuts..... bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... each	6	10	0	0	Leeks..... bunch	6	3	0	0
Asparagus..... bundle	6	0	10	0	Lettuce..... per doz.	1	0	1	6
Beans, Broad..... bushel	0	0	0	0	Mushrooms..... pottle	2	0	3	0
Kidney..... 100	3	0	4	0	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... bushel	3	0	5	0
Broccoli..... bundle	1	0	1	6	Parley..... sieve	2	0	3	0
Brus. Sprouts 1/2 sieve	2	0	3	0	Parsnips..... doz.	0	9	1	6
Cabbage..... doz.	2	0	3	0	Peas..... quart	12	0	20	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	2	6	4	0
Carrots..... bunch	0	4	0	5	Kidney..... do.	3	0	4	0
Caulliflower..... doz.	2	0	6	0	Radishes..... doz. hands	0	6	1	0
Celery..... bundle	2	0	3	0	Rhubarb..... bundle	0	6	1	0
Cucumbers..... each	0	9	2	0	Savoys..... doz.	2	0	3	0
pickling..... doz.	0	0	0	0	Sea-kale..... basket	2	0	3	0
Fenive..... doz.	2	0	0	0	Shallots..... lb.	0	8	0	0
Fennel..... bunch	0	3	0	0	Spinach..... lb.	5	0	0	0
Garlic..... lb.	1	0	0	0	Tomatoes..... 1/2 sieve	0	0	0	0
Herbs..... bunch	0	3	0	0	Turnips..... bunch	0	4	0	6
Horseradish..... bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

Charles Turner, Royal Nursery, Slough.—*General Spring Catalogue, 1866.*

J. A. Bruce & Co., Hamilton, Canada West.—*Descriptive Catalogue of Seeds for the Farm, Kitchen Garden, Flower Garden, of Roots, &c.*

Amoise Versehaeffelt, Rue du Chaume, 50, Ghent.—*Prix-Courant pour Printemps et Eté, 1866. No. 78—Plantes Nouvelles.*

TO CORRESPONDENTS.

••• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

STOCKS FOR THE APPLE AND PEAR.—We have received a communication from Mr. Robson in answer to "T. R.," but too late for insertion until next week.

POLYANTHUS SPORT (A Novice).—Your Polyanthus has the calyx within one of larger size, rendering it more leaf-like. Such sports are not unusual.

ANNUALS TO BLOOM IN AUGUST (Idem).—We know of no plants which if sown now would bloom in June, or not until the end of that month. You do not say whether you have a hothed, we therefore conclude you have not. The following, if sown now, will bloom from June to September:—Yellow: *Oxalis tropaeoloides*, chocolate-red leaves, neat for edgings; *Leptochloa aureus* and *luteus*, *Sphenoglyca speciosa*, *Sanvitalia procumbens*, which is a half-hardy annual, and *Tropaeolum Tom Thumb*. Blue: *Nemophila insignis*, *Lupinus nanus*, *Whitlavia grandiflora* and *Campanula speculum*. Scarlet: *Tropaeolum Tom Thumb*, scarlet. Crimson: *Iberis atropurpurea kermesina*, *Tropaeolum Tom Thumb*, crimson. White: *Nemophila insignis alba*, *Iberis grandiflora alba*, *Saponaria calabrica alba*. Purple: *Linaria bipartita splendens*, *Iberis umbellata*, *Campanula pentagonia*. Straw colour and cream are so much yellow that any lightish yellow will do for them, and we do not remember any. Rose and Pink: *Saponaria calabrica*, *Silene pendula*. Lilac: *Clarkia elegans* and *Lupinus venustus*.

HOUSE FOR PROPAGATION AND CUCUMBERS (J. H. H.).—1st, We have no objection to the proposed arrangement of your house for Cucumbers, Melons, propagating, &c., and which is 35 feet long, 7 feet high at back, and 5 feet in front, and 10 feet wide, with a walk of 2 feet at back, a walk of like width and a shelf of 3 feet in front, which will leave a bed 5 feet wide, outside measure, in the centre of the house; but for getting conveniently to the shelf in front, it would be better if the house, both back and front, were from 9 to 12 inches higher. It is always unpleasant to have to stoop much in a house, and we are sometimes apt to forget to stoop in a low house, and not a few broken heads are the consequence. 2nd, Such a house would be very effectually heated by a wooden tank 4½ feet wide, and 4 inches deep, supported on piers at from 24 to 30 inches from the ground. If the tank is made of 1½ or 2-inch deal, and well beaten together, and white or red leaded at the joints, we would not trouble with lining it with lead, though that is all right if expense is no object. Such a wooden tank, kept supplied with water, would last as long, and be as little subject to leakage as a cooler in a brewhouse constantly in use. Except red and white lead at the joints, we would use no paint inside or outside for a tank of this description. 3rd, Such a tank for Cucumbers and Melons might be set a few inches above the ground, and a box set on the top to hold soil, &c. The above height from the ground, from 24 to 30 inches, would be best for propagating, as being more handy for a shallower bed over the tank. 4th, The tank alone, with openings from the slate-covering to let up the heat, would be quite sufficient to heat that 10-foot house. There is no better plan for doing this than that described in Vol. II., Old Series, where much more was done by a wooden tank—namely, placing a wooden box, say 20 inches deep, over the tank, then putting 4 inches of rubble over the slate-covering, and a slight box of half-inch wood inside of the other, tarred and dried to prevent rotting, the inner box being separated from the outer box a couple of inches all round. Through this opening plenty of heat would rise to keep the house hot, and there would be no want of bottom heat. Water could also be poured down between the boxes to give moisture at will; but a mild vapour could also be obtained from a few openings in the slate-covering. Instead of a box 20 inches deep, we would prefer one 7 or 8 inches deep for propagating, so as to be nearer the slate-covering. To make the propagating-bed perfect, the deep box might slope like the roof and be covered with sashes, and then the cuttings could stand 8 or 10 inches from this inside sash-glass. Though the tank would be sufficient, yet to economise heat it would be best to take a small flue at least once through the house. 5th, The flue described at page 222, as heating the small pit, would not suit your proposed house, which is double the size. Such a flue going round your house would render you independent of topheat borrowed from your side tank. Even were your flue deeper, as you propose—two bricks on the side instead of one, and did they abut against your bed in the centre, we fear they would not effectually heat that bed of 5 feet in width, unless at every 2 feet or so there were open drains underneath the bed communicating with the sides of the flue. 6th, As you evidently have a wish to dispense with bellows, tank, &c., if possible, we think your best plan would be to have a little pit in the middle of your house, as in page 222, take a flue 9 inches deep along the front, and for 6 or 8 feet build the sides with the brick on bed instead of brick on edge. Return that flue through the centre of the pit, and then either take it up the chimney or return it again at the back to a chimney at the other end. Pack each side of the flue in the pit with clinkers, stones, &c., loosely, place a few inches on the top of the flue, and then cover all with an inch of fine clean gravel, and on this you may place sand, ashes, or tan for propagating, or earth for Cucumbers and Melons. This would be the simplest and cheapest mode, and with a little attention will answer every purpose. The flue through or round the house, with a tank in the middle, would be better and more free from casualty; but there need be little of the latter if there be nothing but a flue, if that is kept clean and sound. It is difficult to secure every advantage from any one plan. 7th, We will here also reply to "W. W.," who wishes to know if the pit represented at page 222 would not also do for Cucumbers all the winter. We doubt if it would; commencing in March, and fruiting in November and December, are very different. For winter work we should consider the pit too flat, the heat scarcely enough, and the walls too thin, unless indeed they were thatched with straw for the winter. Not having seen it tried, we can only say we doubt if it would answer. With the back wall some 18 inches higher, and the flues deeper or wider, we would be more sanguine as to winter success. It is as well not to drive even a model pit too far. Winter Cucumbers are most easily secured in light houses, if span-roofed all the better, and with plenty of heat to counteract cold weather. In such places they receive more light than can be obtained in pits in the winter months.

THE CHISWICK TRIAL OF PEAS.—Mr. Eley writes to us that with regard to the report on the trial of Peas at the Royal Horticultural Society's Gardens, some mistake has occurred respecting the Essex Rival Pea being represented as synonymous with the ordinary Early Frame, whereas there exists not a particle of similarity between these two Peas. Mr. Eley, the proprietor of the Essex Rival, would therefore respectfully beg of the public to suspend their judgment until they have seen the result of the Society's trial this year, the seed for which Mr. Eley hopes to furnish.

BOOKS (R. Y. A.).—You can have "The Cottage Gardener's Dictionary" free by post from our office if you enclose 6s. 8d. with your address.

CALCEOLARIA CUTTINGS NOT STRIKING (Edwin).—The cause of the cuttings not striking is most probably their suffering from green fly. Your dipping them in tobacco water, if it is at all strong, might destroy the insects. We strike all our *Calceolaria* cuttings in cold frames, putting about 3 inches of pit sand on 6 inches of soil, composed of one-half loam and one-half well-reduced leaf mould. Last year we put in the cuttings in the third week in October, gave them a good watering, and they have had nothing from that day to this, except air in mild weather, and a double covering of mats in severe weather, left on day and night until the plants were thawed, as they have been repeatedly frozen stiff. They are now strong plants, and not one cutting in a thousand has failed. Since we took to this system, for which we are indebted to Mr. Fish, we have not had so much as a green fly or insect of any kind; but when we struck and kept the cuttings during the winter in a heated house, they were eaten up by green fly and thrips. Victor Emmanuel is as easy to propagate as any other variety, and as easily kept over the winter. *Calceolarias* are almost hardy.

FORMING AN ARTESIAN WELL.—"A. Y. Z." wishes to know, when boring for water for a fountain, what sized pipes should be sunk so as to have a proper jet, and what is the general expense of boring. Who are the proper people to undertake this kind of work? Nothing of the kind ever being mentioned in THE JOURNAL OF HORTICULTURE, any information on the subject would be of much service.

CUTTING DOWN PAMPAS GRASS (E. A. P.).—We find it best not to cut away the decayed grass until spring, as it acts as a protection to the crown; but after frosts are past it can serve no good purpose, and is unsightly if left; it should, therefore, be removed after fresh growth has commenced. The price of "The Cottage Gardener's Dictionary" is 5s. 8d. post free from the office of this Journal.

GROWING TOBACCO (J. H. M. R.).—It is not illegal to grow Tobacco for your own use.

TREE ONION.—Mr. G. H. Archer, Essex Street, South Higham, Norwich, wishes to know where he can obtain some bulbs of this Onion.

CAMELLIA LEAVES BROWNE (W. F.).—The leaf sent has been browned by allowing water to stand upon the edges, and the sun shining on it in that state causes the mischief. The plants, we should say, are kept in a cold damp house, and air given seldom. We hope that you do not syringe them at this season, for that will cause every leaf to turn brown at the edges. Give more air; and if you syringe at all let it be in the afternoon, and let the leaves be dry before the sun shine upon them in the morning.

RAISING RHODODENDRONS FROM SEED (P. B.).—Procure some sweet sandy peat and break it fine, and three-parts fill the pans with it in an unsifted state, first draining them well. Sifted soil should then be put on the rough, and the surface having been levelled, sow the seed and cover with fine soil. Place in a cold frame, keep just moist, and let the moisture be regular. If you sow in a frame, place a good layer of rough cinders at the bottom, and on this 6 inches of turfy sandy peat. The growth of moss is due to keeping the seedlings or the soil too wet; giving more air and keeping the soil moist, but not wet, will prevent the growth of moss. Unless you sow very thickly, which is not desirable, the growth of moss will not interfere with the seedlings until they are fit to transplant.

RASPBERRY SUPPORTS (C. Repton).—The best of all modes of supporting Raspberry canes is by iron espaliers 4 feet in height, inch-square iron supports at each end, and properly stayed with iron stays. The uprights should be 1 inch wide, a quarter of an inch thick, and pierced with holes to admit wire two-eighths of an inch in diameter. There ought to be four wires, the first at 1 foot from the ground, and the others 1 foot apart, and all should be strained tight. These espaliers should run north and south, and be 6 feet apart, and the Raspberries should be planted 2½ feet from each other. Train the canes from 6 to 9 inches apart. The iron hoops mentioned in "The Cottage Gardener's Dictionary" are good, and so are wooden stakes and hoops. They are quite as good, as regards the growth of the Raspberries, as those of iron, but not so durable and neat.

REMOVING STANDARD ROSES (Idem).—Roses may still be removed; but they will not bloom so well as if transplanted at an earlier season. So far as safety goes they may be removed up to May, and even in that month, watering well at planting and during dry weather afterwards.

NERIUM OLEANDER LEAF INFESTED WITH BROWN SCALE (A Dull Fellow).—The leaf sent was covered on the upper surface with a black fungus, caused by the "flat insect" on the under side of the leaf secreting a fluid which falls upon the leaf, and is familiarly known as honeydew. This substance dries, and on it is produced the black fungus sent. It does not injure the leaves to any serious extent, beyond hindering their powers of inhaling and exhaling. Neriiums have a peculiarly thick epidermis, and so have Oranges, which are also subject to this species of scale insect and consequent black fungus. The insect is known to gardeners as the Orange scale. To free the leaves of it, they should be washed with a solution of soft soap at the rate of 8 ozs. to the gallon of water. The plant first of all should be syringed with water at a temperature of 140°, which is not too high if syringed on the plant; but if the latter be immersed the water must be at 120°, and the plant should be kept in the water one minute. The leaves are to be washed on both sides with a sponge, pressing whilst washing them, so as to dislodge the insect and remove the black fungus. After the leaves have been washed on both sides they should be allowed to dry, and then the plants should be syringed with water at 140°, laying the pots on their sides so that the insects near the midribs may be dislodged by employing a pointed stick. A good washing with soft soap will generally keep the insect under, but repeated washings are necessary to keep plants subject to it clean.

FLOWER GARDEN (J. B. L.).—We think your proposed planting will do very well. Next season, instead of cross-planting, it might be balanced. We cannot say much for the plan, as the large lumpy figures will drown the long narrow ones; but we have no hesitation in saying, that of the two we would prefer the plan being laid out on gravel rather than grass.

PRIMULAS (T. M. Shuttleworth).—Your Primulas, judging from the single flowers, appear to be very good, the high-coloured ones especially so. If the plants are of dwarf habit and produce large trusses, they must be very ornamental. Hundreds of seedlings are yearly raised of equal merit, in fact, seed saved from well-selected plants is almost certain to produce promising seedlings.

APPLES ON PEAR STOCKS (*Inquirer*).—Apple scions will take on Pear stocks, doing well for a few years, but they are not long-lived.

TRANSPLANTING HOLLIES (*Harriet*).—Your Hollies, 3 feet high, may be safely removed, only you must take them up carefully, being particular to preserve as many of the fibrous roots as possible. Now is a good time to transplant Hollies; give a good watering after removal, and afterwards during dry weather. About the middle of May you should cut-in the trees considerably, it not being material whether you preserve the small shoots or cut-in to those the thickness of the wrist, for fresh shoots will be produced as well from old as from new wood. If, after transplanting, you do not cut them in before new growths are made, we do not think it safe to remove large Hollies at any season; but if the heads are reduced, so as to correspond with the diminution of roots consequent on removal, we find that not one in ten dies, and those which survive become very nice trees in a year or two, care being taken to water them in dry weather. Privet makes a very good evergreen hedge, and one that flowers with us rather freely; but we are unable to say whether bees make any use of the flowers.

BLINDS FOR "CRANSTON HOUSES."—Mr. W. W. Harvey, of Birmingham, fixed me a most complete and effective set to my range of 15 yards long last year, and they have already saved the r cost in man's time, to say nothing of preserving plants in flower, as the plan adopted gives perfect command over sun without interfering with the circulation of air.—A CONSTANT SUBSCRIBER.

LAWN OVERTROWN WITH DAISIES (*Daisy Pest*).—We advise you to set to work some women or boys, with a man to superintend. Let them cut off the Daisies by the root with an old knife. When this is done, cover the surface with from a quarter to half an inch deep of soil and well-rotted manure, mixed together in equal quantities. Spread this compost equally all over, after having gone over the lawn with an iron rake, drawing the latter backwards and forwards. As soon afterwards as there is a prospect of rain sow, in mixture, for one acre *Festuca duriuscula*, 4 lbs.; *Festuca tenuifolia*, 1½ lb.; *Poa nemoralis*, 1½ lb. (if shaded by trees a pound more); *Cynosurus cristatus*, 4 lbs.; *Trifolium repens*, 3 lbs.; and *Trifolium minus*, 2 lbs., and if the ground is liable to burn the grass in summer, add 1 lb. of *Lotus corniculatus*. Sow on a dry day, rake over the ground lightly with a wooden rake, and roll well the same day or before the seeds have germinated, taking care that the ground be dry. After sowing let the lawn alone for a month, and then mow. Roll well throughout the summer, and go over the lawn with a spade and grub up the Daisies by the root. By pursuing this treatment we have known a lawn in which Daisies and Plantains were very plentiful, become a good turf.

GERANIUM CUTTINGS DYING (*S. E. B.*).—The rooted and evidently autumn-struck Geranium cuttings sent have rotted at the surface of the soil from being kept too wet at the surface, and from the soil being much too rich. Such an occurrence is not uncommon. Your best remedy will be to re-pot them, or rather pot them off singly at once, using a compost of good, sweet, turfy, yellow loam. One of those sent was in the least injured. Do not water more than is sufficient to prevent the leaves flagging from the time the cuttings are put in till they are growing freely in spring, and use a rather poor, sandy, light soil.

GLASS FOR ROSE TREES (*S. E. C.*).—You may, during the first showery weather in this month, measure a circle of 2 or 3 feet from the stem, and sprinkle over that area 3 or 4 ozs. of Peruvian guano; 1 oz. is sufficient for a circle 2 feet in diameter—that is, 1 foot from the stem all round, and give 1 oz. more for every additional foot. Another application during the first moist weather in July will be all that is required, liberal supplies of water being given during dry weather.

NEAPOLITAN VIOLETS FAILING (*Idem*).—From the condition in which your plants are in we think their failure is due to their not being planted in sweet well-aired soil, that the soil has been imperfectly drained in the first instance, and afterwards kept much too wet, and that the frame has been kept too close: hence they damped off.

DESTROYING MOSS ON A LAWN (*H. W. W.*).—Under this heading a page 247, for the ground should be "dug" at the time of sowing, read "dry," &c.

GLADIOLUS GANDAVENSIS VARIETIES PLANTING (*Q. Q.*).—In your cold damp climate it would be well to defer planting until towards the end of April, as they will then be more likely to avoid the cold rains, and wet cold state of the soil from the rain and snow. They will sustain no injury if kept in the cold frame until the end of April, only give them plenty of air.

FERTIGATING ORCHARD-HOUSE TREES IN BLOOM (*H. B.*).—You may safely fill the house with the smoke of tobacco paper of good quality, only be careful to have the air of the house dry at the time.

SULPHUR AND SNUFF FOR DESTROYING RED SPIDER AND GREEN FLY (*Idem*).—You may dust the leaves and young shoots with the sulphur and snuff mixed, only the foliage must be dry when the snuff is dusted over the young shoots, or, if wet, the snuff will be converted into tobacco water, and this if too strong will injure the tender shoots. The sulphur will not injure the leaves or young shoots in the least, but it will not kill red spider by being brought into contact with the insect; it is the fumes that are destructive to it. A weak solution of soft soap is the best of all remedies we have tried for red spider; and for Peaches, whilst the shoots are young, it should not be stronger than 1 oz. to the gallon of water; but after the leaves have attained their full size a good syringing of soft soap solution at the rate of 2 ozs. to the gallon of boiling water, allowed to stand until cool before use, will mostly keep the leaves free, and clear them if necessary, of red spider. The safest and most certain means of preventing red spider is to proceed against it with its natural enemy—water, syringing the plants or trees subject to it freely.

CUTTING-IN ORANGE TREES (*Idem*).—Orange trees may safely be cut in to the old wood; but it is by far the safest plan to thin out the old wood, leaving the best-situated of the young fresh growths of preceding years. From the thinning out of the old wood more light and air will be admitted, and those left will grow the more vigorously for it. If you could place them in ainery at work after cutting in, or in a house having a temperature of 55° at night, and which is kept moist, they would push more surely and freely. Keep them in the same house until the growths have been made, when a lighter and more airy structure will be preferable. If you cut them in to the old wood, plunging the pots in a bath of 70° would help the trees to break; withdraw them from the bath by degrees after they have broken well; maintain a temperature of 55° at night, and a rather close moist atmosphere; and syringe overhead twice daily.

WILD FLOWERS OF GREAT BRITAIN (*J. C. Idemore*).—The work is still in course of publication. The 6th Number was published on the 1st instant. Your bookseller or his agent is to blame. You can have the seven Numbers free by post from our office, if you enclose with your address the amount in post-office stamps and four additional for postage.

REPORTING HEATHS, CAMELLIAS, AND AZALEAS (*S. E. Black*).—The most suitable time to pot Heath in spring; March or the beginning of April is a good time, and potting may be continued up to July. Camellias and Azaleas are best potted from a fortnight to three weeks after blooming, the plants being placed in heat and a more humid atmosphere, especially if they have been cut in; in which case they should not be potted until the new growths are somewhat advanced, or the promise of new growth is apparent. They are then to be potted, and kept close and shaded for a few days.

AZALEA INFESTED WITH THRIPS (*Robert Sucti*).—The bad sent was worse infested with thrips than any which we had previously seen. Your remedy, if the plant is not beyond recovery, will be to fumigate with tobacco when the leaves are dry on two consecutive evenings; filling the house so that a plant cannot be seen from the outside. After the second smoking syringe the plants morning and evening, and this daily until the growths are made and the flower-buds set or formed. Should ever find a small black or white insect on the under side of the leaves, fill the house with tobacco smoke the first calm evening afterwards, being careful to have the foliage dry.

MOSS ROSES PEGGED DOWN (*S. J. Cork*).—Having pegged down the shoots repeatedly until the bed is too full, you may now, to make room for new shoots, thin out the weak old shoots after blooming, pegging down the best of the new in their place.

REMOVING MULCHING FROM STANDARD ROSES (*Idem*).—You may remove the mulching now, forking or pointing in the shortest of it, but not forking so deeply as to disturb the roots. The applications of guano water proposed will answer if not given in too powerful doses. The planting of a small climber to cover the stem is a bad practice, interfering with the well-doing of the Roses.

NAMES OF PLANTS (*Old Subscriber*).—1, *Hypnum undulatum*; 2, *Bryum cuspidatum*; 3, *Bryum punctatum*. (*New Forest*).—Apparently a cone of *Cupressus sempervirens*. *W. Scidley*.—We do not recognise the leaf sent. (*E. E. H.*).—*Habrothamnus elegans*, *Pellaea falcata*. (*D. S.*).—*Desmia gracilis*, *Scilla amara*; the bit of Fern sent is insufficient for determination.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending March 31st.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 25	30.158	29.627	48	27	43	43	N.W.	.00	Cloudy; fine; slight frost at night.
Mon. . . 26	30.152	30.094	50	48	46	43	S.	.02	Slight fog; overcast; very fine.
Tues. . . 27	30.149	30.065	52	35	48	44	W.	.10	Cloudy; showers and sun-shine; very fine at night.
Wed. . . 28	30.133	30.051	50	41	48	44	S.W.	.01	Fine; cloudy; rain at night.
Thurs. . 29	30.123	30.109	64	48	49	44½	S.W.	.00	Fine; cloudy and hot; overcast and warm at night.
Fri. . . 30	30.154	30.078	61	43	51	46	S.W.	.14	Fine; overcast; warm and very fine; overcast.
Sat. . . 31	29.984	29.674	55	29	31	46½	N.W.	.06	Rain; cloudy and dull; overcast; slight frost; rain.
Mean . .	30.113	29.957	54.28	38.00	48.28	44.44	....	0.36	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

MARKING FOWLS.

In your answer to "CHATEAU VALLON" in your Number of March 20th, he was told how to mark his fowls in the web of

the wing, either by a hot iron or a coloured thread tied in. "CHATEAU VALLON" may mark his fowls quite distinctly enough to swear to them if stolen, or to recognise them if strayed, by nicking the edge of any of the toe-nails, always marking the same nail in the same manner, and on the same side. The importance of marking fowls was made very clear to me this winter, when a person claimed a Silver-pencilled cockerel of

mine on his way home from a walk. I thus was able to swear before the magistrate to the fowl, owing to my mark, when but for that I might not have been able to have asserted my claim to my own property. It is also useful to mark birds previously to their being sent for exhibition, as sometimes birds have been accidentally substituted for others; and though you may be quite sure in your own mind that the bird returned in the stead of your own is not yours, I do not think any one could swear to a bird without a mark. I have been told that Game fowls are nicked in the eyelids, or when dubbed; but not having been a breeder of Game poultry, I cannot speak from experience. Another advantage of nicking the nail is that you can feel your mark in the dark if necessary. Of course my man knows my mark, which never varies; and I can thus substantiate my own assertion.—R. C. R.

SOUTHERN POULTRY SHOWS.

I HAVE been waiting anxiously every week to see if any of your many readers and writers would propose as a fit place for a southern poultry show my native town, Bristol, and I am glad to see the right man to do so has mentioned it in your Number of March 20th. It has been my idea for sometime, but I did not mention it. I will most willingly work with all my heart in getting it up if some, only, of the breeders will give me hopes of their support, and propose a time which would not clash with many other shows.—S. LANG, JUN., *Redland, Bristol.*

WHITE-RUMPED DRAGON PIGEONS.

I MUST apologise for again troubling you with a reply to a letter in your Journal of the 20th of March, signed "A DRAGON BREEDER." As I before stated in your paper of the 27th of February, the signature "John Percival" to my letter of the 19th of December was an error of the printer. It is not because your correspondent calculates that three-fourths of the Blue Pigeons in existence are white-rumped that, therefore, the white rump is correct; it only goes to show the difficulty in breeding to perfection, and the scarcity of the purer and more valuable strain—I mean those with the blue rump.

If your correspondent is not thankful for my having enlightened him as to what is correct, I can only say he ought to be. He very wisely withholds his name and the names of the competent judges, as he terms them, whose opinions, he says, he has sought; the publication of which would only result in their opinions being matter for ridicule by all really competent judges in the fancy. A Dragon breeder your correspondent may be, but certainly not a Dragon fancier: hence his entire ignorance of the properties the bird should possess.

I still maintain that the white rump is a glaring defect, and that birds so foully marked may be bought in any quantity at prices varying from 1s. 6d. to 2s. each, and no bargain, being far too dear for the table, which is certainly all they are fit for. In my opinion I am not singular.

I have for many years been a member of a society established for the cultivation and improvement of every kind of Pigeon—a society second to none, numbering amongst its members gentlemen known to be really competent judges, and I can fairly say I never heard one of them express an opinion on the properties of the Dragon but that condemned the white rump. Your correspondent states that blue-rumped birds are generally ticked with small black spots. I beg to inform him such birds are not Blues at all, but are known to the fancier as "Chequers," and that blue-rumped birds, both Dragon and Fantail, may be had quite as good in colour as those foully marked with the white rump. I again say that the defect is quite as glaring in the Blue Owl as in the Dragon. I have some beautiful powder-blue Owls blue-rumped: were they the reverse I would not give them loft-room.

I am quite willing to refer the matter to Mr. Esquilant, as suggested in your paper, and, indeed, to a dozen other gentlemen, if need be, in support of my views, and I feel satisfied their opinion will at once convict your correspondent of the attempt to decide on that of which he is not competent to judge.

I find, also, in your impression of the 20th ult. a letter signed "WILTSHIRE RECTOR." That gentleman's view of the matter is, that as white-rumped birds recently took a first prize at Birmingham the feathering cannot amount to a disqualification. This, however, is no criterion, as the award in the Dragon class

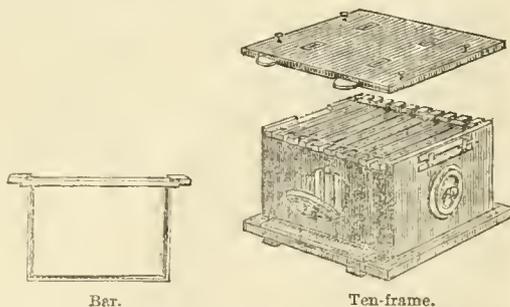
was ridiculed by many Dragon fanciers, and that it was not the only blunder committed at the late Birmingham Show. Whether from want of knowledge on the part of the Judges, or the hurried manner in which they had to perform their duties, I will not say, but certain it is that many of the awards gave very great dissatisfaction.—JONES PERCIVAL.

IMPROVED FRAME HIVE.

So much has been written of late years on the subject of bee-hives and boxes, and so many opinions have been put forward as to their right form of construction and requisite dimensions, that it may savour somewhat of presumption to suggest anything by way of improvement in this department of apian science, especially when the public have been made acquainted with the almost perfect frame hives of Messrs. Langstroth and Woodbury. These two, whether for the purpose of experiment, or for obtaining the largest quantity of honey, are far in advance of any others which have come under my notice—the former, as described in his interesting and exhaustive work on the honey-bee; the other as well known in the perfect specimens which are sent out in such numbers from the manufactory of the Messrs. Neighbour, in London—and what I now venture to submit as an improvement upon these, is a slight modification of the bar at the top of the frame, which, I think, will be found greatly to facilitate the removal from the hive.

Both in the Langstroth and Woodbury hives it is necessary to thrust the finger and thumb into the hive (when the top has been taken off), in order to lift any single frame requiring to be either examined or removed; but this is not always so easy a matter when the two ends of the top bar have been well glued down by the bees, and the fact of these ends resting upon a ledge or rabbet, prevents a backward or forward movement for breaking the seal before lifting the frame. It therefore occurred to me, that it would be attended with advantage to elongate the top bar of the frame, and carry it right through the front and back of the hive, allowing it to extend beyond the outside about half an inch, so as enable the operator to lay hold of it firmly with thumb and finger outside, instead of inside the hive. Accordingly I constructed all my hives on this plan; and, having now tried it with considerable success for about four years, I have been persuaded to submit it to my apian friends through the medium of these columns, and thus afford them an opportunity of testing it when they are making or ordering any new frame hives.

The dimensions of my frames vary considerably both from those of Langstroth and Woodbury, but this is a matter of little importance, as my plan of elongating the top bar may be applied to any size of frame.



DIMENSIONS OF HIVE.—Depth, always 10 inches; length, from front to back, always 15½ inches; width, varies according to number of bars, eight-bar hive, 13½ inches; size of frame may be reckoned from the length and depth of the hive, allowing a clear space of three-eighths of an inch at top, bottom, and sides; top bar 1½ inch wide.

The size of my boxes is also different from any other that I know of, being always of the same depth—viz., 10 inches, but, of course, varying in width, as constructed to contain from four to ten frames, as the locality in which I reside is by no means favourable for bee-keeping; the wolds of east Kent being about the same in character as the wolds in other parts of the kingdom—viz., high, windy, and open. My boxes are usually made with eight frames, but I must, in justice, add, that the greatest yield of honey I have ever obtained was from

a ten-frame hive, in a super of last year, and which weighed 38½ lbs. nett, realising in the market 2s. per lb.

Should any of our apianian readers be desirous of obtaining a specimen of my hive, they may do so by application to Mr. W. Pettitt, the practised apianian and skilful hive-maker of Snargate Street, Dover. I may also add, that Mr. Pettitt has invented a metallic bar-holder for the tops of the frames to rest in, at the back and front of my hives, but which may be applied to any other frame hive for the same purpose.—**SIBERT-IN-THE-WOLD.**

CHANGING A NUTT'S TO A BAR-HIVE.

HAVING been much interested by the account published at page 234, in THE JOURNAL OF HORTICULTURE, containing suggestions for converting a Nutt's hive into a bar-frame hive, it may be useful to "A NEW BEGINNER," as well as to others, who, like myself, are advocates of the bar system, if I inform them of some of my "doings" at alteration.

I have several sets of "Pettitt's collateral-hives," which consist of two separate boxes. I saw away so much of the end of each of these boxes, that on uniting the sawed edges I have one box 21½ inches long internally, giving room for thirteen frames, each 1½ inch wide. I now take a pair of Pettitt's patent metallic bar-holders, which I purchased from him at Dover in the winter. These I screw on to the top edges of the boxes, thus connecting them at top. The bottom edges I connect by screwing strips of deal 1 inch square all round. I have thus a hive 21½ inches from side to side, 11½ inches from back to front, and 10 inches deep, ready to receive thirteen bar-frames. I obtained the thirteen frames from Mr. Pettitt, with one "dividing" frame, which is a panel fitting the inside of the hive, and which enables me to contract or enlarge the hive at pleasure. The top bars of these frames are of sufficient length to project about half an inch through the back and front of the hive. This projection gives much greater power and facility in loosening and removing the frames from the hive when required. Mr. Pettitt has also, I found, adapted metallic bar-rests for the Woodbury and Langstroth hives, and I was so much pleased with his ingenious contrivance, that I purchased a few pairs, and intend to apply them to my hives forthwith.—**F. C. V., Weybridge.**

LIGURIAN BEES IN THE HOLY LAND.

OLIVE oil, goats' hair, and tobacco, seem to be the principal produce of the district; the latter being exported in some quantities by way of Aero to Egypt. Bee-keeping, also, is not an unimportant item of industry, and every house possesses a pile of bee-hives in its yard. Though similar in its habits, the hive bee of Palestine is a different species from our own. We never found *Apis mellifica*, L., our domestic species, in the country, though it very possibly occurs in the north; but the common Holy Land insect, *Apis ligustica*, is amazingly abundant, both in hives, in rocks, and in old hollow trees. It is smaller than our bee, with brighter yellow bands on the thorax and abdomen, which is rather wasp-like in shape, and with very long antennae. In its habits, and especially in the immense population of neuters in each community, and in the drones cast forth in autumn, it resembles the other species. Its sting also is quite as sharp. The hives are very simple, consisting of large tubes of sun-dried mud, like gas-pipes, about 4 feet long, and closed with mud at each end, leaving only an aperture in the centre large enough for two or three bees to pass at a time. The insects appear to frequent both doors equally. The tubes are laid in rows horizontally, and piled in a pyramid. I counted one of these colonies, consisting of seventy-eight tubes, each a distinct hive. Coolness being the great object, the whole is thickly plastered over with mud, and covered with boughs, while a branch is stuck in the ground at each end, to assist the bees in alighting. At first, we took these singular structures for ovens or hen-houses. The barbarous practice of destroying the swarms for their honey is unknown. When the hives are full, the clay is removed from the ends of the pipes, and the honey extracted with an iron hook; these pieces of comb which contain young bees being carefully placed, and the hives then closed up again.

Everywhere during our journey we found honey was always to be purchased; and it is used by the natives for many culinary purposes, and especially for the preparation of sweet cakes. It has the delicate aromatic flavour of the thyme-scented honey of Hybla or Hymethus. But however extensive are the bee

colonies of the villages, the number of wild bees of the same species is far greater. The innumerable fissures and clefts of the limestone rocks, which everywhere flank the valleys, afford in their recesses secure shelter for any number of swarms; and many of the Bedonins, particularly in the wilderness of Judea, obtain their subsistence by bee-hunting, bringing into Jerusalem jars of that wild honey on which John the Baptist fed in the wilderness; and which Jonathan had long before unwittingly tasted, when the comb had dropped on the ground from the hollow tree in which it was suspended. The visitor to the Wady Kurn, when he sees the busy multitudes of bees about its cliffs, cannot but recall to mind the promise, "With honey out of the stony rock would I have satisfied thee." There is no epithet of the Land of Promise more true to the letter, even to the present day, than this, that it was "a land flowing with milk and honey."—(TRISTRAM'S "Journal of Travels in Palestine.")

SHEFFIELD POULTRY SHOW.—As will be seen by reference to our advertising columns, it is again determined to hold a poultry show at Sheffield, under the management of a few of the most spirited poultry breeders. It has the promised patronage of the Mayor and most of the leading families of the district. The prizes in the aggregate amount to about £170. The poultry premiums are £2, £1, and 10s.; for Pigeons, 15s. 10s. and 5s.; the Rabbits having prizes of £1 and 10s. allotted them. The show will be held in the Brownhill Cricket Grounds, near the Botanic Gardens—a site undoubtedly the best suited for the purposes of such a meeting of any in the neighbourhood of Sheffield; and it will take place on the 19th, 21st, and 22nd of May next. As we are informed the Committee intend personally to carry out all arrangements, there can be little doubt the meeting will be well supported.

OUR LETTER BOX.

FOWLS WITH SWOLLEN FEET (R. F. J.).—Appearances such as you mention are often caused by improper flooring to poultry-houses—wood, brick, asphaltum, stone, will all cause it. It is not natural for a fowl to be always standing on a hard surface; the toes are thereby spread out, the ball of the foot comes to bear the whole weight, and the nails take no hold of the ground. Loose earth and gravel are proper flooring, but none is good where the impress of the foot is not left wherever it is put down.

ULCERATED EYE AND HEAD IN FOWLS (W. G. B.).—You would enable us to answer your question more easily, and probably more usefully to yourself, if you told us what breed the fowls are, and whether all the same; because as some are perfectly well, while others die, it is possible that among the fifteen you have those which thrive in confinement, and those that require a run. Put in your run two or three cartloads of road grit, the scrapings or cuttings of the roadside; do not spread them over the place, but let them form two conical-shaped heaps as high as possible. It will be the fowls' pleasure to scatter them in searching for grass, &c. Indian meal and potato-peelings are not good feeding, and fowls thrive in spite of it, rather than because of it. Alter your dietary scale; feed in the morning on meal, mixed with water; at midday with whole corn; in the afternoon with meal. Give Indian corn twice a week for a change, bread and ale in very damp and cold weather. Animal food is not necessary. Put some camphor in their water. Give the sweepings of your table, and the kitchen scraps. If in spite of all this their faces still swell, wash with cold water and vinegar. We believe that if you follow our directions you will do well with your poultry.

WHITE FEATHERS IN SPANISH FOWLS (Cestria).—It is not uncommon for Spanish fowls to throw white feathers. It is most uncommon for such to be sold, and we have not heard of it before. If when sold they had no appearance of white the seller could not foresee it; but if there were already spots, every breeder of Spanish is well aware they always increase, and such birds should not be sent. They would be laughed at at a show. Mr. Boyle's are very good Brahmas; so are Mr. Pigeon's, of Lymington.

DUN GAME FOWLS (R. H.).—We do not know where Dun Game fowls are to be had. There used to be some in the neighbourhood of Liverpool, but we have seen none for years. They were kept by fly-fishers for the sake of their backles.

FOWLS PECKING OFF EACH OTHER'S FEATHERS (D. J.).—Your fowls lack something, or else they are overfed. When they take to feathers they are suffering from fever, or plethoria. In the first case, they eat all sorts of unnatural things in the hope of finding a remedy; in the second, they have an unnatural craving. Supply them with growing sods of grass, and let there be plenty of fresh mould taken up with them; let them have lime and bricklayers' rubbish in their haunts. If you have lettuces, give some to them. Fowls will stand still to be eaten by their companions.

BANTAMS WITH COCHINS (Eboracum).—You may let them run together without fear of cross-breeding. As you object to dubbing, you had better keep your other pets, Black Bantams. We know nothing about the book you mention, and have no dependence upon its contents, except so far as borrowed from good authorities.

POULTRY FOOD, &c. (Brahma).—By "crushed" we mean flattened by being passed through a mill invented for the purpose. Your hen's egg-organs were inflamed, and well they might, so far as you say she was. She died of apoplexy in consequence.

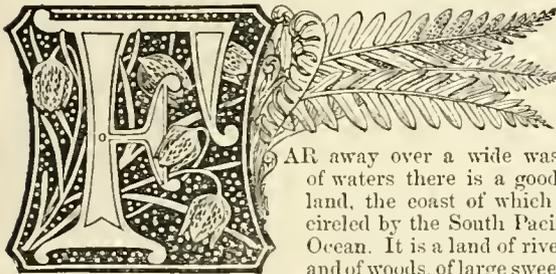
HIVES (R. Hammond).—For cheapness and simplicity we advise you to use Payne's. If you write to Messrs. Neighbour & Son, Regent Street, London, they will send you a list of prices.

WEEKLY CALENDAR.

Day of Month	Day of Week.	APRIL 10—16, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.
			Day.	Night.	Mean.		m.	h.	m.	h.	m.	h.	m.	h.			
10	TU	<i>Anthocercis viscosa.</i>	55.6	33.8	44.7	15	18	45	47	2	after.	25	1	20	100		
11	W	<i>Arum crinitum.</i>	55.7	35.6	45.7	19	15	47	17	3	5	26	1	4	101		
12	TH	<i>Athanasia tomentosa.</i>	55.7	36.3	46.0	25	13	49	48	3	22	3	27	0	48	102	
13	F	<i>Azuleas.</i>	55.8	36.6	44.4	15	11	50	17	4	40	4	28	0	32	103	
14	S	PRINCESS BEATRICE BORN, 1857.	57.2	36.2	46.7	14	9	52	48	4	0	6	29	0	17	104	
15	SUN	2ND SUNDAY AFTER EASTER.	59.1	37.8	48.5	19	7	54	18	5	23	7	●	0	2	105	
16	M	<i>Boronia latifolia.</i>	57.0	36.4	46.7	24	4	55	54	5	42	8	1	0	13	106	

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 56.5°; and its night temperature 36.1°. The greatest heat was 73°, on the 14th, 1852; and the lowest cold 20°, on the 10th, 1860, and 16th, 1847. The greatest fall of rain was 0.56 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

GARDENING PROSPECTS IN QUEENSLAND.



AR away over a wide waste of waters there is a goodly land, the coast of which is circled by the South Pacific Ocean. It is a land of rivers and of woods, of large sweeps

of down offering rich pasturage to a thousand herds—a land, if not exactly “flowing with milk and honey,” yet answering so promptly and so liberally to the labourer’s call, that I think a little intelligence about it, coming for the most part from working men themselves, may be alike interesting and useful. It is a land where, I am told, the settlers live at first in tents, with “no rent to pay, nor fixing to buy, nor poor’s rates, nor any other rates; no dog tax nor shooting license;—where we live, in fact, just like we read of in the Bible.”

After a while the tent is transformed into a “humpy,” or house built of logs of wood, where “I sit,” says an emigrant, “sixteen thousand miles away from the old city, with a cloudless sky above me, the deliciously soft and balmy breeze of a Queensland spring morning whispering through the Gums and Cedars in the valley below, and stealing in at my open window, the magnificent river (Brisbane) creeping slowly round the foot of the hills on its way to the sea, and all around giving promise of competence, if not wealth, to a man who has the skill and the heart to work hard for a few years, live economically, and keep both his eyes wide open.”

The cost of building the humpy would be but a few shillings, “as it could be built of bark, and the black fellows would bring in from the forest sufficient to build a house for a few figs of tobacco, which at the most would only cost four or five shillings; or if built of logs, and you could not split the wood yourself, the rail-splitters would bring you a sufficient number of logs to build a house for a pound or thirty shillings.”

Were I to describe the furniture of this very primitive dwelling it might startle all ideas of comfort from an Englishman’s mind in England. “I am my own cabinet-maker,” says another emigrant to me, “and you would be surprised to see how handy I have become, and what lovely articles of furniture I can knock up out of an old box. Everything comes in—bits of tin from old packages—old calicoes and cloth—in short, any and every thing.”

The humpy will probably be situated on a “bit of land of my own,” the produce of the “land order” given to every emigrant who pays the £18 for his own passage; or it may be acquired after this fashion:—“My father,” writes a young settler, “has a piece of land—not a very large piece to be sure, but it is sufficient to build a house upon, and also to grow garden stuff to serve him all the year

round. It is not quite three-quarters of an acre. The price was to be £6, with £1 for the transfer. Father was to work the price out.”

“The “bit of land of my own” may, if near a town, be turned to most profitable account as a market garden, and it will be found to produce a little more than the Potatoes, Cabbage, Peas, Asparagus, &c., of England, and with infinitely less trouble. “There is a heap of rubbish,” writes one of my friends, “by the side of the footpath. Out of five Pine-Apple tops which seem to have been thrown down promiscuously, one has taken root, and if left alone will bear fruit. Here are Tobacco plants springing up too, Water Melons, Pumpkins, and a number of plants, only seen in forcing-houses in England, all starting into vigorous life from this heap of rubbish.”

But there is more than the produce of the rubbish heap, or every man would be his own rubbish-gardener, and market-gardeners have little custom. “It is now (September) spring with us,” says the same friend; “the Peach trees, with which every garden hereabouts seems crowded, are all covered with blossom so thickly that you cannot see the wood of the branches. The Rose trees, that through the winter have only had here and there a bloom upon them, are now bursting out on every spray.” Still, Peaches that are ready to drop into every open mouth can hardly pay for the trouble of growing; nor would they and the rubbish heap combined satisfy the demands of cooks—a class noted for being a little uppish, particularly in a land where “our Clara,” a girl of about twelve, “is getting £18 a-year;” but there are many vegetables as well as fruits.

“We get plenty of Bananas,” writes a market gardener’s assistant to me, “and Sweet Potatoes to eat raw; they taste a good deal like the pig or ground nuts. We also get very good Cabbages, and the same kind of Potatoes as we had at home. My master and I have planted a large piece of land with Cotton [the Queensland cotton shown at the Exhibition of 1862 was pronounced fine, evenly grown, and good], and he is growing acres of Arrow-root. The plants look like great Onions, only they have very broad leaves. We have also planted Indian Corn and Lucern. We are now (October), mowing the Oats for the cattle, as the ear does not fill. We grow Sugar, Oranges, Lemons, Peaches, Pine Apples, Locusts [*Cerantia siliqua*], Guavas, Tea, and Tobacco; also Carrots, Turnips, Radishes, Lettuces, Onions, and Cucumbers, with many others the names of which I do not know.” That there is some garden produce which is not easily found in Queensland may be learned from a request made by the same writer to his brother, about to join him in Queensland. “Please bring,” he says, “roots of Thyme, Sage, Rue, Rhubarb, Currants, Gooseberries, Horseradish, Leeks, Marigolds, and Box, in air-tight boxes; bring also some hips, haws, acorns, Chestnuts, and Willows, also all sorts of English flower seeds.” The writer was in 1862 a weaver in England; and during a great depression in the trade he, with several brothers and sisters, together with his parents, emigrated to Queensland, where he learned a gardener’s profession to such good purpose, that in 1865 I hear “W—, A—, and D— have taken a farm to work it as a market garden,

and father and A— have been fencing and clearing it, while W— and D— remained at service, sons to have the means of purchasing stores until the first crop come in. The farm is very pleasantly situated on the banks of the river Brisbane. I went out into the forest for a day's shooting about a fortnight ago (September), and towards night found myself rather unexpectedly at their fence, when I got over and looked at the farm for the first time. They had cleared about four acres, and a very promising crop of Maize was just peeping through the ground among the old tree stumps. About three more acres had been cut down, and was just being burnt off. The great Gum and Iron bark trees, which had been prostrated a few weeks before, were flaring up to the sky, and the flames, fanned by a stiff evening breeze, were roaring and crackling grandly."

And while the crops are growing and the wages coming in, "there is any quantity of fish for the catching, any quantity of wallabies I wish I knew what these were, kangaroos, opossums, dying squirrels, flying foxes, ducks, turkeys, parrots, and emus for the shooting; and as to the wood to burn, there is more than enough to supply all the rest of the world, for the cutting, anywhere in the bush." The labourer in the bush will by no means lack company, for he will have "snakes and lizards; frogs green, white, and blue; a great variety of butterflies and moths (the death's-head moth is very common); parrots by thousands, blue, green, yellow, red, and grey; and laughing jackasses unfortunately not confined to Queensland. One kind of bird makes a noise like an ungreased wheelbarrow when it is drawn along. Another is continually saying 'Six o'clock, Jack! Six o'clock, Jack!' Another croaks out as if from down a log sough, 'More pork! More pork!' Another is continually going 'W-r-r-r-r-r-r!' Another says, 'Whip poor Will!' [one would hope interrogatively]. There is one that I call the Jenny Wren. This little fellow has a beautiful rich black body coat, his head and tail being of a bright red. They are exceedingly tame, and will come close up to you. They have a sweet, soft, little song, something like the wren at home. Besides these there are the pelican, heron, stork, cormorant, curlew, wild turkey; and, above all, there is a little fly called a mosquito, that keeps you awake at night, so that you may hear the cuckoo singing." And when the tired labourer leaves the bush for his lumpy, there beneath its eaves he may find "the swallow building her nest just as she does in the old country, only our swallows have little russet-coloured heads, and brown and white-speckled backs and wings."

Yes, I am afraid that "old country," with all its varied associations and memories, now gleaming out of the dim past, now shining with the brilliant light of yesterday, rises up for ever and anon before the emigrant, dimming his eyes with tears, while his strong right hand hews away at the giant trees with "vines as thick as my arm, like great ropes, growing straight up from the ground, clinging to the high branches, while funny parasitic plants trail all over them." Nor is it the earth alone which reminds him of vanished times: when his eyes glance upwards in reverent questionings of a still fairer brighter home, the old clinging memories are there also. "I thought," writes one, "when I lost sight of the North Star, and afterwards of the last star in the tail of dear old familiar Ursa Major, that I should have to make acquaintance with new constellations of stars altogether, and lose all the old ones. Judging of what the others might be by the Southern Cross, I made up my mind not to like them. Imagine my pleasure and surprise, then, when I found that two or three of the constellations had not deserted me. Orion and the Bull still look down upon me, but I feel somewhat sorry to see them so altered. They gradually changed their position as we came from the Cape of Good Hope; and now poor Taurus is slat upon his back, and Orion comes up heels first. I cannot but feel that such treatment of old friends is unwarrantable, and only to be tolerated because one cannot prevent it. However, I would sooner see them heels uppermost than not see them at all, and I therefore take it very kind of them to come out and see me home night after night, especially when they have to appear under such disadvantages."

How terrible this home sickness is they only who have felt it can tell. The longing that comes to see old familiar places, to hear old familiar voices, with that strangest yearning of all in death—to have our bones laid amidst the graves of our kindred—all these thoughts and longings are unavoidable enemies that the dweller in Queensland has to do sore battle with; but these foes are not so hard to deal with as those that lurk behind an empty cupboard, or turn a brave man into a coward at the sight of a tax-gatherer.

The drawbacks to Queensland are floods and drought, yet these are partial; and by the March mail of this present year an emigrant writes, "The first part of this present summer has been hotter than usual, and we are still suffering from drought, but nothing to be alarmed about at present; indeed in some respects the season has been a most favorable one. The vineyards in the Brisbane district were never known to look so well. I was over one at Kedron Brook the other day, from which the proprietor is gathering four tons of Grapes per acre. The Sugar and Cotton crops are both looking remarkably well."

Of the beautiful Ferns of Queensland and of the few plants sent to me I have no space to write; but they deserve special notice and a future paper to themselves should more information be sent to me.—DEVONIA.

HOW TO INTRODUCE PLANTS OF THE MANGOSTEEN (*GARCINIA MANGOSTANA*, L.).

SEVERAL articles having lately appeared in *THE JOURNAL OF HORTICULTURE*, giving an account of the free propagation from cuttings and fruiting of the Mangosteen, it may, therefore, be considered quite unnecessary for any person to go to the expense of importing plants from their native country. During my long experience I have seen but few plants of it. Some years ago there was a very fine plant at Kew, and the only place at which one has been known to fruit was at Sion House gardens. It is, therefore, not without a little surprise that I have seen "J. H.'s" account of his plants, how he strikes them from cuttings, and fruits them.

Now, without knowing anything of "J. H.," or having even seen his plants, I, nevertheless, unhesitatingly venture to say that the plant he is calling Mangosteen is not that plant, nor even belongs to the family of Guttiferæ; and I will be safe in saying that no plants of Mangosteen have yet been obtained from cuttings. Cuttings will callus and root, but refuse to grow upwards. Indeed, the whole of the Guttiferæ, more especially the large-leaved species, do not propagate from cuttings. A few weeks ago half a dozen plants said to be Mangosteen were advertised for sale, as having come from Singapore. Coming from that country it is reasonable to believe them to be the true plants; if so, they are, therefore, with the Sion House plant, the only representatives of this rare fruiting plant known to me in this country at the present time.

The many inquiries that have been made during the last twenty years at Kew for plants of the Mangosteen, have been a matter of surprise to me, seeing the facilities that are now afforded by steam navigation for the quick transport of plants from distant countries; but on account of the trans-shipment and frequent delay at Calcutta, with the hot passage through the Red Sea, considerable expense and risk attend the transmission of living plants from the East in Ward's cases. In the case of the Mangosteen, however, Ward's cases are not necessary, as will be seen by the following successful experiment. Some years ago a correspondent at Singapore was requested to send Mangosteen fruit to Kew, which he did by placing a single layer of fruit side by side in a thin wooden box, just sufficiently deep to hold the fruit without any packing. On the box being opened the fruit looked like Apples with the skin a little shrivelled. The inside was still pulpy, and it was found that a portion of the seeds had germinated, and in a short time, without disturbing them, the others also germinated. By this method I consider Mangosteen plants may be made quite common, or, at least, sufficiently so to supply the demand. I have to remark that the success of this method depends on having only one layer of fruit in a box; two might succeed, but any great quantity together are liable to ferment and destroy the embryo.

The ill-success that has hitherto attended the growing of the Mangosteen is consequent on the too general practice of pot culture. If garden pots were scarce, if our bothouses were adapted to meet such a contingency, and if the nature of the plant were better studied, then hopes might be entertained that dishes of Mangosteens would be seen competing at the fruit exhibitions of the Royal Horticultural Society.—J. SMITH, *Ex-Curator, Royal Botanic Garden, Kew.*—*Park House, Kew.*

THE SEASON FAR NORTH.—We are informed that even so far north as Stornoway, Primroses and Polyanthus have been in flower since December; Willows in January; Hazel, in shel-

tered places, in February; and in exposed places Alder, Hazel, Crocuses, Snowdrops, Mahonia, all coming into flower since the 12th of March. *Daphne mezereum* is in full flower now (April 2nd), as also the pretty little blue *Scilla*.

THE RELATIVE MERITS OF THE STOCKS USED FOR THE APPLE AND PEAR.

WHEN I incidentally remarked in my article on stocks for grafting (page 215), that I had not had much experience with the Paradise stock, I did not intend to imply that I had not had any; on the contrary, my acquaintance with the Paradise stock dates back thirty-five years or more, when I perfectly remember having to cut some dead and cankered wood out of trees which ought to have been just in their prime, as others of the same age worked on the Crab were. I may add, that some unworked Paradise stocks were also at the same place and in much the same condition, the tops in many places dead, and canker eating through the thicker branches. About ten years afterwards I had also to operate upon a number of trees on the Paradise which were not so bad, the situation being more favourable, and they were younger, but they certainly were not so good as others worked on the Crab. Since then I have occasionally had to manage trees worked on the Paradise stock, but they have been less numerous than before, and those I have met with presented the same features as others which came under my eye many years ago. I legitimately inferred that the Paradise and Crab in 1866 were the same as they were in 1826, and gave my opinion accordingly; most certainly I did not give that opinion without a fair share of experience, for although I have not absolutely had under my care many trees of the kind your correspondent, "T. R.," so strongly recommends, I have seen a great many, and their appearance confirms what I have said. Tidy, neat-growing, young trees are plentiful enough, but by the time they arrive at a size capable of yielding half a dozen bushels of fruit, decay has set in; the trees are no longer healthy, and in a group may be picked out at once, as was done by a friend of mine not many days ago, when looking over an extensive orchard belonging to a third party, and such a tree he pointed out at a long distance as a Ribston, another as a Hawthornden, and on a closer inspection it was admitted by the owner that some unhealthy specimens had come from a distant nursery, and had been worked on the Paradise stock.

These facts go far to prove the superiority the Crab has over the Paradise stock when a permanent orchard is desired, but when a tree is planted to assume some fanciful shape, regardless of fruit, the dwarfier stock has its advantages; and where the soil and situation are favourable, the Paradise may even supersede the Crab for espalier and pyramid trees; but fruit obtained by these means fills the basket slowly, especially when the latter mode of training is adopted. At the same time the appearance of pyramid-trained trees is so good, and there are so many points in their favour, that I for one admire and adopt them; but the quantity of fruit thus obtained forms a very small fraction indeed of what is required for the consumption of the country, so that in advising the general adoption of the Crab stock, I am justified by the practical experience of the growers of more than nine-tenths of the Apples produced in the kingdom. So much for my own vindication of opinion, let us now see what "T. R." says in criticism.

I beg to tell "T. R." that I have seen the stain I alluded to, made by budding the purple *Cytisus* on the *Laburnum*, or I would not have stated so, and I believe such an occurrence was recorded in one of the earliest volumes of the "Transactions" of the Horticultural Society, by a gentleman having ample means of observation, as he had upwards of one hundred acres of nursery ground in full crop; and as "T. R." admits having seen a similar stain from other things, he has no right, especially under an anonymous signature, to deny its being so.

"T. R." is wrong in supposing that I meant the Pear grafted on the Quince as being only capable of producing about one-fourth of what the Pear would do. I meant exactly what I said, that I had never known an instance in which the Quince tree (as a fruit) produced more than one-fourth of what the Pear would do. Has "T. R." known it do so? He mentions an instance of one hundred bushels of Pears on one tree. Has he ever seen more than twenty-five bushels on a Quince tree? I have never seen anything like that quantity on a single tree, and I always understood the recommendation of the Quince as a stock for the Pear, to be its less luxuriant and dwarfier

habit of growth; and I find several nurserymen who propagate the Pear extensively, recommend the Quince stock for this reason, and a very good qualification too, and one for which I admire and cultivate trees on the Quince. Still I am not blind to the merits of the more free-growing stock, and where the soil and other circumstances favour it, the produce is more in quantity and better in quality. This may appear to be saying much, but if the history of the prize fruit at our great metropolitan shows be searched out, and also that of more than three-fourths of the fruit at Covent Garden, it will be found that the Pear stock has produced them. I have more than once in my life been curious in ascertaining this. I therefore see no reason to depart from the views put forth in my former article recommending both, but the Pear especially, in favourable localities.

From the little I said about the Briar and Manetti as stocks for Roses, criticism was uncalled for. I can only repeat what I have several times stated in the pages of THE JOURNAL OF HORTICULTURE, that I ignore both stocks except in the case of standards, and I find other growers are doing so also.

It would have been better if "T. R." had made a comparison between the best fruits grown in Worcestershire on the Pear stock with the same grown on the Quince, rather than have taken the extreme case he has. I believe the comparison is often enough made on the tables of our fruit shows. The inference drawn from his remarks would be, that if the tree of Cheat-boy Pear had been worked on the Quince instead of the Pear, there would have been only twenty-five bushels instead of one hundred, a result by no means commendatory of the Quince.

"T. R." next goes into figures to show the advantage of having a large number of trees, and points to a plot of something less than an acre of ground having two thousand trees upon it. Now, let us follow these figures out and see what ought to be expected from an acre of ground with such an expensive crop upon it. In the first place these two thousand trees would cost the buyer, at 2s. each, just £200, and the price is only a fair and just one, such as a nurseryman who can assure the buyer that the trees are true to name ought to receive. I may add, that I paid this sum lately to a London firm for some, and I saw some from Mr. Rivers, of Sawbridgeworth, lately that were the same price. Well, then, "T. R." tells us that each tree ought to be trimmed by professional men—amateurs—and not by the "knifeman," whom he scoffs at, and the gardener who does the work with his hands. Now, how much per annum has to be placed against the account of this acre of trees? Learned men at the present day expect to be well paid, and so they ought to be, and two thousand trees are a great number to attend to; therefore, some large sum will, doubtless, be yearly expended in their management, to say nothing of the more vulgar operation of preparing the ground beforehand, and similar work afterwards. More explanation on this head is wanted, so as to let us know how much has to be added to the £200 per acre at first expended on the trees, by the employment of these well skilled in gardening, not professional gardeners.

In the same paragraph "T. R." tells us "such trees never fail to bear if their blossoms are protected;" but what an awkward qualification the latter part of this sentence is. Protecting the blossoms of two thousand trees must necessarily call into operation some costly contrivance, which a guinea a-bushel for the fruit will hardly be sufficient to pay for. Now, it would have given myself and many others more information if "T. R." had described how this protection was to be afforded, rather than told us that he had several thousands of such trees to sell. If recourse to protection has to be made through such means as our friends in Manchester, Bradford, and Nottingham can supply, a very heavy bill will soon be run up in this way, for such fabrics are not by any means cheap. Some enlightenment on this score will be very acceptable.

Now, in relation to the paying capabilities of a plantation of trees like that described by "T. R.," in the paragraph alluded to, I will relate a case, which, though occurring upwards of one hundred miles from here, I was, nevertheless, well acquainted with. A gentleman retiring from business with an ample competency, built himself a house in the country, and planted and took especial pride in his garden. The situation being favourable things generally flourished with him, and being still active and enterprising, he did much of the work himself. Like many others, he planted a plot of ground with fruit trees trained in the pyramid fashion. I think he allowed somewhat more room than "T. R." speaks of, but in other respects they

were treated the same, and they looked well and bore as well as trees similarly treated generally do—that is to say, in favourable seasons like 1864 and 1865 there was plenty of fruit on Pears and Plums, while in 1861 there was scarcely any. The trees were, I believe, somewhere about eight years old or more, and had come from Mr. Rivers, of Sawbridgeworth. I believe the gentleman had received many flattering compliments from friends to whom he had given fruit in seasons when this was plentiful; such compliments the usages of society never deny, and are mistaken by some people for opinions. Well, time rolled on, and in the great uncertainty of most earthly things, our worthy gentleman was suddenly called to another world; as is not unusual in such cases, the estate was speedily offered for sale, and it being determined to make every shilling from it that could be done, the fruit was to be sold, and an eminent salesman of Covent Garden consulted with, and made fully aware of the advantages the fruit had over such as he had sent him from elsewhere. The fruit was in due time sent up; but, alas! for the dulness that “T. R.” speaks of, the buyers could not see in which way it differed from other fruit of the same kind offered to them, excepting in being somewhat smaller, and they would only give a second-rate price for it; and after deducting commission and carriage, the estate realised the sum of 17s. 3d. on the produce of about 160 trees, and that mostly for Plums. Now, these trees had been carefully attended to, looked well, and I understood had a fair crop upon them. So much for absolute, not ideal, *E s. d.* remuneration.

“T. R.” seems fond of quoting the practice of our French neighbours; in this I cannot hold much argument with him, not having seen sufficient of their practice to warrant an opinion. Certainly I have seen some of the gardens around Paris, and those of some other towns, and that too in the height of the fruit season, and from what I saw my opinion would be that a better dessert could be obtained in Covent Garden from English-grown fruits; and taking into consideration the advantages which the climate of France affords, I think English fruit-growers may take some credit to themselves. This matter, however, deserves to be carefully considered, and the forthcoming International Horticultural Exhibition will, no doubt, throw much light on this subject.

“T. R.” alludes to my not being in the mercantile world of gardening, and not knowing much of what is taking place in it. I certainly do not propagate fruit trees for sale, and am, therefore, not liable to the imputation of puffing any particular class of tree, but as a disinterested person I wish for nothing but the truth. I am, however, far from classing the Paradise and Quince stocks amongst absurdities; on the contrary, both, more especially the latter, may be and are useful in their way, but are they of such national importance as those opposed to them? I am very much mistaken indeed if the verdict of the fruit-growing and fruit-eating public will not be a decided negative, whatever fruit-tree propagators may say to the contrary. It is not my intention to deprecate any particular mode of growing fruit, but if a certain mode present a chance of growing two good fruits instead of one, it is my duty to advise that. Let “T. R.” inquire of the great salesmen of Covent Garden whence they receive their supplies, and follow up his inquiry, and he will find that the large orchards which furnish the best fruit are all worked on the Crab stock, and his own remark of the Paradise stock being known and used in England for a century, and being still not general, is a tolerable proof that its superiority is more than questionable, excepting for growing small quantities of small or medium-sized fruit on trees from which elderly gentlemen can gather it while standing on the ground. These advantages it would be wrong to undervalue.

With respect to the Quince stock for Pears, I will go further, and admit that it is of service in more ways than the Paradise has been for Apples; but has fruit so grown ever excelled that grown on the Pear stock in size, flavour, or abundance? The test of our fruit shows and fruit markets is a better criterion to go by than the words of the sellers of young trees so worked; and if “T. R.” rebukes me for giving an opinion on the Paradise stock, the public can judge for itself whose opinion carries with it the least appearance of self-interest. Fruit-growers as a body can well afford to hear themselves called dull and slow; but few classes of men are more alive to their own interest and that of those for whom they provide than are some of the large fruit-growers in this neighbourhood. Not content with visiting other parts of the kingdom famed for good fruit, they occasionally take a tour to Belgium, the Channel Islands, and France, and observe the modes of cultivation practised there.

A very near neighbour of mine sent upwards of 1300 bushels of Plums to Covent Garden last year; but there are other still larger growers, and Apples and Pears are, of course, still more extensively grown. Growers have followed their calling long enough to know what is likely to answer best in their respective localities, and though there are but few who do not make experiments, the result arrived at is, that the situation that will grow a fruitful tree to a large size, and healthy and vigorous, is the one to plant with that fruit, and there the tree will be likely to fill both the basket and the pocket. Those who prefer distorting a tree into whatever fantastic shape the fashion of the day may dictate, be that fashion a cylinder, basin, umbrella, or cone, can accomplish their object; the tree will endure it, and the term beauty may be applied or misapplied, as the idea may be, to each or all of them. Be it observed, however, I do not mean to say that some of these forms are not beautiful, but the question arises, Is the fruit better or more plentiful? If it were so, those who grow for market would have adopted it long ago. Filberts are all pruned-in with a severity and exactness to shape and size which from long study and careful practice the growers have found is the best way to secure a crop, and the same would have been done with other fruits had a similar practice been attended with a like result.—J. ROBINSON.

APPLE TREES ON THE FRENCH PARADISE STOCK.

HAVING planted a number of young Apple trees from Mr. Scott's nurseries at Merriott, I have naturally felt much interest in reading the various papers relating to the Paradise stock in *THE JOURNAL OF HORTICULTURE*. It is a matter of no small interest to gardeners and others, for we are anxious to produce as quick and permanent a return as possible for the outlay we incur. In the absence of large orchards, and being confined to the kitchen gardens and strips outside, dwarf trees are unquestionably the most convenient, interfering but little with the general cropping of the garden, and of these we can plant a goodly number, making up in some measure for the produce of larger trees, which would shade the ground too much for vegetable crops. I know well the value of a good large orchard. For sixteen years I lived where there is, perhaps, one of the finest orchards in Somerset, and I have gathered as many as twelve or sixteen bushels of good marketable fruit from one tree, and there are many such trees in the same orchard.

In the autumn of 1863 I paid a visit to Mr. Scott's nurseries, and selected a number of dwarf Apple and Pear trees to plant in these gardens. Nothing could look better than the trees in the nurseries, no canker nor the least bit of moss was there to be seen on the trees, and the bark looked as though it had been polished; again in the autumn of 1864 I had some more trees from the same nursery. Our soil is a cold retentive loam, and the situation of the garden is low, cold, and damp, and early and late frosts are, perhaps, more injurious than in any part of the county of Somerset, but I am pleased to say that the trees, without exception, are doing well; and of those planted in November, 1863, most bore a fair crop of good fruit last summer, especially Cellini, Winter Hawthornden, and Northern Spy. Thus in by no means a favourable situation have trees grafted on Mr. Scott's French Paradise stocks done well, and come into bearing early, the latter an object much wished for in these days. Allow me to add a few words in favour of that beautiful Apple the Cellini. It is very handsome, and attracts the eye of every passer-by, comes into bearing early, and bears freely. Dr. Hogg says of it, “Flesh white, tender, juicy, with a fine brisk balsamic flavour and high aroma.”—G. D. VALLANCE, *Gardener to Sir W. C. Medleycott, Bart., Ven Hall.*

CULTURE OF TOBACCO.

Now is a good time to sow Tobacco seed. Any one who has a warm dry frame can raise the seedlings as well as in a hot-house. My plan is to sow now in a broad pan 3 inches deep, put in a vinery at work, having a temperature of 55°. The seed must not be covered more than a quarter of an inch deep, and very fine soil should be employed for that purpose. It is advisable to keep the pan shaded until the seedlings appear, otherwise it will be necessary to water twice a-day when there is much air and sun.

When the seedlings come up they must be well looked after, for I find every sort of insect will eat them off almost before you can see them. To prevent this, about a week after they make their appearance I give them one watering of weak guano water through a very fine rose, and then in a few days I shake a slight dusting of soot and lime on them. If they begin to damp off, which they often do in a moist vinery, I take them to a drier place, but warm; if not, I prick them off in 60-sized pots in the vinery, put them under hand-glasses, and shade well until they are pretty strong. In about a fortnight I remove them from the vinery to a warm dung frame, the dung being covered with ashes to prevent their rooting into it. Afterwards I keep them in the frame, harden off by degrees, and plant out as soon as I think we are safe from frost, which is here generally about the first week in June.

The plants will grow in any place not too hot and dry. If the weather should prove very dry I stir the soil with a fork, and give them a good soaking of guano water early in the morning, then cover the ground over with a mulching of leaf soil. No one should be disappointed if his plants do not grow so strongly as here, for the soil is peculiarly well suited for the growth of Tobacco, being light and porous, and we have much rain at midsummer.

Tobacco ought never to be pulled up before there are signs of the approach of a sharp frost, for the older it is the stronger. I pull up the plants by the roots, lay them in an open shed for the night, and hang them up next day as thinly as I can. I let them hang about two or three weeks to dry a little, and then I have the leaves picked off and put in a tub to ferment. Sometimes they take a month or six weeks to do this, and during that time I turn them once. When the tobacco has well fermented, shake it out on some dry shelves or staging to dry. Lay the stems on a boiler at work. In about a month or six weeks chop the stems up with a billhook, and mix them with the leaves, and the tobacco will be ready for use. If there are plenty of leaves without having to use the stems, so much the better.—RIVE.

INTERNATIONAL HORTICULTURAL EXHIBITION.

WE are authorised to state that the Executive Committee of the International Horticultural Exhibition have ruled as follows on certain points relating to the Exhibition which had been officially brought before them. As the replies may be of use to others besides these immediately concerned, it has been thought desirable to give them publication in the present form.

In respect to Variegated Plants, the inquiry was put whether *Anthurium cordifolium*, and the *Alocasias* *Lewii*, *Veitchii*, and *zebrina*, were admissible as variegated plants under Class 17 of the schedule. It was ruled by a majority of votes that they were *not* to be admitted. Another inquiry as to the same plants, also *Aloesia macrocarpa*, being eligible to be shown in Classes 14 to 16 inclusive, was made, and it was decided that they were eligible in those classes. It was further ruled that variegated plants—a group exceedingly difficult of accurate definition—were to be understood as those having two distinct colours on the upper surface of the leaf, exclusive of that of the costa and ribs. This applies also to Class 25.

As regards Orchids, in reply to a suggestion that Class 28, that for twenty distinct sorts, should be taken as the leading collection in that group of plants, the Committee thought it sufficient for them to point out, that Class 27 was intended by them to include a mass of showy plants staged entirely for their effectiveness and splendour, while Class 28 was intended for specimen plants of distinct kinds, showing high cultivation.

The first six classes in the schedule relating to New Plants had given rise to the inquiry whether specimens of the same species (duplicate plants) were admissible in more than one class. This was ruled in the affirmative. One querist desired to know if tree Ferns might be shown in Classes 42 to 45, and was told, Yes, though their exhibition there would confer no special advantage, as they would have to be judged as Ferns, not as tree Ferns. Another inquiry related to hardy Conifers, in this form—Is novelty or size and beauty to be the test of merit in Classes 61 to 63? The reply was to the effect that size and beauty combined were the qualities to be preferred.

An intending exhibitor desired to know how Forced Vegetables (Class 201) were to be determined—what was to be understood by forcing? It was in this case ruled, that to be forced the vegetables must be grown by the aid of artificially applied heat. Mere protection was not to be understood as constituting forcing.

The classes for Designs and Water-colour Drawings also elicited some inquiries which may be answered thus:—The designs must be tinted in the usual way; they must be mounted so as to admit of being suspended against a wall, framing and glazing being optional; and they must be sent in with mottoes. As to the drawings which are

invited on folio paper, this was ruled to mean any folio not larger than imperial, and these also are required to be mounted or framed, so as to be easily suspended.

We may add that the Committee decided in favour of holding an auction sale in the tent on the Saturday following the Show day, for the sale of such of the exhibited subjects as their owners might desire to dispose of in this way.

A Yorkshire correspondent writes as follows in respect to the *Admission of Gardeners* at the forthcoming International Exhibition:—“Many gardeners about the country wish to know if there will be a day devoted to them, say a 2s. 6d. day? If not an entire day, there should be at least the half of one day given up to them. I have heard that the mornings up to 9 o'clock are to be given to the gardeners, but as it will be impossible to get more than a passing glimpse of things in two or three hours, it would not only entail additional expense but great waste of time if they had to go two or more mornings.” This correspondent and others will be glad to learn that the Executive Committee have already decided that *bona fide* gardeners shall be admitted on the 23rd for 2s. 6d., and on the 24th for 1s., provided tickets are secured before the 1st of May; these tickets admitting—not from 6 to 9 A.M. as originally set down in the regulations, but from 10 A.M. to 7 P.M., that is during the whole time the Show is open to the public. We think this is a just concession to the class of practical gardeners, from whom the Show itself must derive its chief attractions, and we trust they will know how to profit by it.

The same correspondent adds:—“I would also suggest to the Executive that steps should be taken to induce all the railway companies to run special trains at excursion prices for the Exhibition, say for three days, chiefly to accommodate gardeners, who cannot in the month of May spare much time from home.” We can in respect to this matter report that the convenience of gardeners and exhibitors, so far as travelling is concerned, has not been overlooked. The principal railway companies, including the London and North-Western, South-Western, South-Eastern, London, Chatham, and Dover, Brighton, Great Northern, and Great-Western, have undertaken to convey subjects for the exhibition at half rates. They point out, in respect to passengers, that, the Show being held during Whitsun week, there will be unusual facilities for cheap travelling; but the Committee hope to obtain further concessions, not only from the foregoing, but from other companies, and if they are successful in their efforts, the gardening community, we may venture to say, will be duly apprised thereof.

ROYAL HORTICULTURAL SOCIETY.

APRIL 3RD.

FLORAL COMMITTEE.—At this meeting Messrs. Veitch & Sons were the principal exhibitors. A first-class certificate was awarded them for *Maranta splendida*, a very beautiful-foliaged plant, distinct from any other species, with dark green markings on a lighter ground; one of the second class for *Angraecum* species, from Madagascar, a very pretty white Orchid; a similar award for *Dieffenbachia gigantea*, a useful fine-foliaged plant; and a first-class certificate for *Camellia Triomphe de Lodi*, a beautifully-formed pale flesh-coloured flower, with pale stripes. Messrs. Veitch also exhibited *Ananassa Porteana*, which it was requested should be sent again, *Acuba bicolor*, *Camellia L'Insubria*, and *Camellia Stortii*, very pretty. Special certificates were awarded to the same firm for a very beautiful collection of seedling *Sparaxis*, containing many very pretty varieties, and for a miscellaneous collection of plants. Among these was a basket containing specimens of Mr. Veitch's exquisite *Azalea Stella*, the plants covered with brilliant scarlet flowers. This *Azalea* was awarded a first-class certificate on a former occasion.

Messrs. E. G. Henderson & Sons exhibited a specimen of *Pelargonium Sophia Cusack*, one of the highly tricoloured section of which Mrs. Pollock seems still to stand at the head. This seedling appeared to have more red in the zones; it was requested that this plant should be sent again later in the season. *Pelargonium Beauty of Gnestwick*, a white variegated-foliaged seedling, also from Messrs. Henderson, was required to be sent again. First-class certificates were awarded them for *Enonymus japonicus macrophyllus*, a distinct and useful shrub with broad leaves, said to be hardy, and *Cynosurus cristatus argenteus*, a most beautiful variegated form of the Crested Dog's-tail Grass. This will be a most useful plant for edging-purposes, the white being so clear and distinct. *Lysinema floribundum* producing flowers something like an *Epaeris*, *Enonymus alatus*, and *Enonymus japonicus radicans pictus* also came from Messrs. Henderson.

Mr. Standish, Ascot, sent a specimen of the true *Rhododendron Griffithii*, with very large pure white flowers, perfumed like the Hawthorn. This beautiful plant was much admired, and received a first-class certificate. Mr. Watson, St. Albans, brought a small plant of a seedling *Pelargonium*, Miss Watson, one of the tricoloured section, with very distinct and bright zones, a very promising variety. He was requested to send it again later in the season.

Mr. Green, gardener to W. Wilson Saunders, Esq., exhibited a collection of curious and interesting plants, for which a special certificate was awarded. Among them were *Sarracenium asperum*; a species of *Amerophallus*; *Bonatea speciosa*, a Cape Orchid; and *Hippeastrum regium*. Mr. Blair, gardener to Sir G. W. Broke Middleton, Bart., Shrubland Park, exhibited out specimens of *Boaginvillaea*

specimens, for which he received a special certificate; and Messrs. Haag and Schmidt, Erfurt, two seedling Myosotis, not in condition. Several plants from the Society's garden were placed on the table, and among them were *Ficus Cooperi*, and Mr. Weir's *Odontoglossum Alexandri*.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. From Messrs. Ivery & Son, of Dorking, came a seedling Apple raised by Mr. Balehain, of that place. It was rather below the medium size, yellow, streaked and dotted with red next the sun. It was awarded a first-class certificate as a good late Apple. Mr. J. Standish sent a well-grown Pine Apple; and Mr. Fenn, gardener to the Rev. G. W. St. John, Woodstock, several bottles of British wines, made from Royal Muscadine and Esperiere Grapes, as described in the pages of this Journal; also, Gooseberry wine, Rhubarb wine, mead, and mead vinegar.

SCIENTIFIC MEETING.—G. F. Wilson, Esq., in the chair. The awards of the Committees having been announced, the Rev. M. J. Berkeley said the first plant to which he would direct attention was a species of *Angraecum*, from Madagascar, shown by Messrs. Veitch and Sons, which was something in the way of *A. pertusum*, but in all probability perfectly distinct. The genus *Angraecum*, it was remarked, was almost entirely African, and its representatives were particularly abundant in Madagascar. *Bonatea speciosa*, sent by Mr. Wilson Saunders, then came under notice; it was one of the Cape Orchids, among which there were many beautiful species, such as *Disti grandiflora*, but on account of the difficulty experienced in their cultivation, they were less generally grown than they deserved to be. With respect to the variegated *Cynosurus cristatus*, Mr. Berkeley said there was another variegated variety, but with a great deal more green in it. It was worthy of remark, that in some districts almost every plant became variegated, and as an instance, the neighbourhood of Homslow was mentioned. At Hatton, near that place, the Lord Chief Baron had in his garden an excellent collection of variegated plants which had been found in the district. The flowers of *Lysimachia floribundum* were next referred to as forming pretty objects under the microscope; and the extremely fragrant white-flowered *Rhododendron Griffithii*, from Mr. Standish, was stated to be a Bhotan species, of which R. Aucklandi was by some considered to be only a form. With reference to *Camellia L'Insubria*, Mr. Berkeley remarked that *Insubria* was the ancient name of Lombardy, whence, and from other parts of Italy, so many varieties of the *Camellia* had been obtained. The mention of Italy recalled to his mind a circumstance in connection with that kingdom and the *Camellia*. Some years ago a gentleman sent to him a *Camellia* leaf, attacked by a peculiar fungus, and he (Mr. Berkeley) wrote asking whether the plant came from Italy, for he had seen the same fungus on Orange trees from that country, and the answer was in the affirmative. This happened four or five years ago, but he had heard no more of the fungus, and he hoped he should not, for its effects were very disastrous. *Ficus Cooperi*, which had been exhibited at a previous meeting, was now produced with ripe fruit on it; but on tasting them they had been found absolutely insipid. In connection with Figs, he might mention that a curious discussion had arisen as to whether it was not possible to ripen Figs on standards out of doors in the midland counties. He knew in one of these a Fig orchard which had been planted a great number of years, but the trees had never ripened fruit more than once in forty years, and that only in an exceptionally hot season. He, therefore, could not recommend any one to make the attempt. At Hastings, Margate, and other places on the south coast, Figs would ripen abundantly and well; and near Margate, he had seen them lying beneath the trees as thickly as Mulberries, ripe, and of fine flavour. Before concluding his remarks, Mr. Berkeley observed, that amongst other experiments instituted at the Chiswick garden, was one commenced the day before. It was an attempt to cultivate the Truffle, and though considerable difficulty had been experienced in obtaining Truffles for the experiment, a basketful had at length been procured, and the bed for their reception was to be at once prepared. Many similar attempts had been made, but all had turned out unsuccessfully, still it was to be hoped that though late in the season, some result might be obtained, if not this year, then in the next. Mr. Berkeley then instanced several attempts which had been made to grow Truffles, such as that of Comte Noe, a French emigrant during the revolution, who, being one of the few who were fortunate enough to recover their estates, on his return to France, fenced in part of a forest, and watered it with water in which Truffles had been steeped. What is wanted, however, is to grow Truffles in the same way as Mushrooms—by spawn, and if this could be made to run the result would be very remunerative. Some years ago a treatise was published by Bornholz, and the plan recommended seemed to be very good, but the book was probably only a bookseller's speculation, and not the result of actual experience; at any rate all attempts to carry out the plan recommended terminated without success. Still later, a Mr. Disney made some experiments in Truffle-growing in Essex, but on going down to see what the results were, Mr. Berkeley said he was not surprised to find they amounted to nothing, when he was informed that the Truffles used in the experiment were the sweepings of Fortnum & Mason's drawers. A few years ago another stated he had succeeded in getting the spawn to run, and in making spawn bricks; but this, too, came to nothing. In Poitou, whence a large portion of the supply of the Parisian markets is derived, and where the Truffles are of a different species from ours, being

black, a plot of ground is fenced in from the downs, sown with acorns and in ten years a crop of Truffles is obtained. They last for about twenty-one years, after which the old grounds cease to be productive, and new ones have to be prepared. An impression, said Mr. Berkeley, prevails in this country, that Truffles will only grow under Beech trees, but he had seen them under Spruce Firs, and he thought the kind of tree did not matter, so long as the soil was calcareous. One point, in particular, with regard to Truffles, was, that they do not like to be disturbed, accordingly they are hunted by dogs trained for the purpose, and these indicate where the Truffles are to be found. As an example of the evil results arising from disturbing the ground, he instanced the case of a gentleman who had a spot of ground from which, in three or four hours, 3 or 4 lbs. of Truffles could be collected; the gentleman had it dug over and not a single Truffle had been seen since. Although the experiment at Chiswick had been commenced rather late in the year, he hoped, if it led to nothing else, that something might be learnt of the nature of the spawn.

Thirteen new members were elected, and the Maidstone Horticultural Society was admitted into union.

WEEKLY SHOW, April 7th.—Prizes were offered at this meeting for a collection of twelve bulbs in flower, of which the first was taken by Mr. Young, gardener to R. Barclay, Esq., Highgate, and the second by Mr. Bartlett, of Shaftesbury Terrace, Hammersmith; also for the best six greenhouse plants in flower, the first being taken by Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, and the second by Mr. Young. For the best twelve cut blooms of Camellias, the first prize was awarded to Mr. Trussler, gardener to D. J. Kay, Esq., Huddesden, and the second to Mr. Young. Extra prizes were awarded to Mr. Young for a collection of Hyacinths, and to Mr. Bartlett for a collection of bulbs and a collection of plants. Mr. Rivers, of Sawbridgeworth, sent a collection of Apples and Pears in a beautiful state of preservation at this late season. The former consisted of Norfolk Beauty, Newtown Pippin, Rhode Island Greening, Lodgemore Nonpareil, Mela Carla, Stamford Pippin, Reineette Diez, Lamb Abbey Pearmain, Calville de Chavy, Baxter's Pearmain, Scarlet Nonpareil, Belle d'Angers, Dominiska, Pearson's Plate, Baldwin, Forge, Betty Geeson, and Cockle Pippin. The Pears were Bezi Mai, Colmar Van Mous, Easter Beurre, Beurre Perce, Beurre Bratonneau, Morel, Madame Millet, and Bellissime d'Ivry. These received a first prize, and the second prize was awarded to Mr. Tonkin, gardener to G. T. Kakewich, Esq., of Exeter, for a very handsome Smooth Cayenne Pine.

THE ROYAL BOTANIC SOCIETY'S SECOND SPRING SHOW.—APRIL 7.

THIS took place on Saturday last, and as Azaleas constituted the principal feature, the Exhibition tent presented quite a gay appearance, notwithstanding the rather gloomy character of the day. From Mr. Turner, of Slough, came half a dozen pyramidal plants standing about 5 feet high, pots included, and covered with bloom. The varieties were Criterion; Duc de Nassau, with large rosy purple flowers; Perryana; Magnificen, white; Prince Jerome; and Variegata superba and Etoile de Gand constituting one plant called Union. Messrs. Lane & Son, of Great Berkhamstead, contributed well-bloomed examples of Magnificent, Cheloni, Conspicua purpurea, Reine des Blanches, very large, pure white; Petuniceflora, and Eulalie Van Geert, a large richly-spotted sort. Messrs. Lane likewise furnished a numerous collection of smaller plants, among which were Madame Ambroise Verschaffelt, a very pleasing rose, bordered with white, and conspicuously spotted in the upper petals with dark crimson; Leopold I., very large, rose; Perfection, bright rosy crimson; President Claeys, salmon, edged with white; Sir H. Havelock; Elegantissima, white, occasionally flaked with red; and Duke of Cambridge. Of Azaleas sent out in 1862, 1863, and 1864, Messrs. Lane exhibited Souvenir du Prince Albert, semi-double, rose, broadly edged with white, very showy; Advance, in the way of Perfection, but larger and deeper in colour; and Secretaire Claus, very large, blush, spotted with crimson. From Messrs. Ivery & Son, Dorking, came Flag of Truce, white; Madame Dominique Verreaux, delicate rose, spotted in the upper petals with crimson; and Madame de Cunnart d'Hamale, large and very fine, white, occasionally striped with crimson. Mr. Turner had Belle Gantoise, pink, edged with white, boldly spotted in the upper petals with crimson; Sir J. Outram, orange scarlet, very free-flowering; and Louise Von Baden, a very fine white, of good substance. Of absolutely new kinds, Messrs. F. & A. Smith contributed several, one of which, Magnum Bonum, received a second-class certificate. It is an orange-red, slightly spotted in the upper petals with crimson. Mr. Bull exhibited Azalea punctulata in its different forms; President Humann, rose, spotted with crimson; and President Victor Van den Heeke, white, striped with deep rose.

Awards.—For six (amateurs): first, Mr. Wheeler, gardener to Sir F. Goldsmid, Bart., Regent's Park. For six (nurserymen): first, Mr. Turner; second, Messrs. Lane. For three varieties sent out in 1862, 1863, and 1864: first, Messrs. Lane; second, Messrs. Ivery; third, Mr. Turner.

Collections of ornamental-leaved Begonias from Mr. Wheeler, Mr. Young, gardener to R. Barclay, Esq., and Mr. Marcham, gardener to

E. Oates, Esq., Hanwell, were awarded prizes in the order in which the exhibitors are named. Though not large, all the plants were in excellent condition. *B. ricinifolia maculata* was noticeable for its deeply-cut foliage of a deep velvety green on a paler ground, and Madame Albert and Madame Oldham as having fine silvery markings. Messrs. F. & A. Smith contributed half a dozen plants of *Erica Willmorei* in good bloom. Miscellaneous collections of fine-foliaged and flowering plants from the same, Mr. Williams, and Mr. Wheeler, comprised *Dicksonia antarctica*, *Aleccasia metallica*, *Pandanus*, *Eriostemon*, *Azalea*, *Heaths*, *Ancias*, *Cytisus*, &c.; and from Mr. Williams we noticed excellent plants of *Cordylone indivisa*, the variegated *Aloe-leaved Yucca*, and *Hedera Hookeri* in very good bloom. Mr. William Paul had likewise a miscellaneous collection, consisting of broad-leaved *Kalmias*, *Dentzias*, double-flowering *Peaches*, and *Rhododendrons*, among which *Bylsianum* and *Poussin* were very bright and attractive, and *Faustosum* was blooming very freely. *Rhododendrons*, dwarf plants, in small pots, and in fine bloom, also came from Messrs. Lane.

Collections of *Cinerarias* in good bloom were furnished by Mr. James, gardener to W. Watson, Esq., Isleworth; Mr. Cox, gardener to Capt. Cahill, Southall; Mr. Marcham; Mr. Clarke, Whitting, and Mr. Beech, gardener to W. Rogers, Esq., Redhill. Several seedlings were also exhibited; by far the best was *Perfection* from Messrs. F. & A. Smith, which received a first-class certificate. It is of a rich violet purple, with a narrow ring of crimson at the base of the ray florets, and a narrow ring of white round the disk. It is a very large and showy variety, and a decided acquisition.

A small collection of *Amaryllis* was exhibited by Mr. Young, and a dozen *Gloxinias*, chiefly erect-flowering, came from Mr. Ballenger, gardener to F. Shadbolt, Esq., Highgate. Messrs. E. G. Henderson contributed a collection of *Cyclamen persicum*, beautifully grown and bloomed, and the same remark applies to a dozen pots of *Lily of the Valley* from Mr. William Paul, who also exhibited *Zonale Pelargonium Rebecca*, remarkable for its fine, large, rosy scarlet flowers, and breadth of petal. A first-class certificate was awarded for it. Messrs. E. G. Henderson, in addition to the *Cyclamens* already noticed, had a collection of tricolor-leaved and variegated *Geraniums*, *Sunset* and *Sophia Casack* being two of the most beautiful of the former; and the variegated *Cynosurus*, noticed in another column, was also again produced.

Of *Roses* Messrs. Paul & Son, of Cheshunt, showed four boxes of cut blooms, conspicuous among which were *Teas Maréchal Niel* in great beauty, *Gloire de Dijon*, and *Rosea alba*, and *Hybrid Perpetuals* *John Hopper*, *Senateur Vaisse*, *Lord Clyde*, *Lord Raglan*, *Beauty of Waltham*, *Pierre Notting*, and *Princess Mary of Cambridge*. Of other subjects hardy British Ferns were shown by Messrs. Ivery and Mr. Bull, those from the former comprising a nice *Wardian* case of *Trichomanes radicans*; and among these from Mr. Bull were very good examples of *Hymenophyllum tunbridgense* and *Trichomanes speciosum*. Mr. Bull also contributed a variety of novelties, and received a first-class certificate for *Maranta splendida*, and second-class ones for *Dieffenbachia gigantea*, and *Aspidistra Sieboldii*, with dark green foliage broadly striped with pale yellow, one half of the leaf being sometimes entirely yellow, and the other half green. Other plants were the pretty yellow-flowered *Berberis stenophylla*, *Psychotria macrocephala*, with ample deep-green foliage, and heads of white flowers; and *Myecia Vogeliana*, violet, with a yellow throat. *Inantophyllum miniatum superbum* in excellent bloom, and a leaf of *Coccoloba pubescens*, about 3 feet across, were also shown by the same exhibitor.

Awards:—For *Cinerarias* (Amateurs): first, Mr. James; second, Mr. Cox; third, Mr. Marcham. (Nurserymen): first, Mr. Clarke. For *Amaryllis*: first, Mr. Young. For *Lily of the Valley*: first, Mr. W. Paul. For British Ferns: first, Messrs. Ivery; second, Mr. Bull. For Miscellaneous Flowering and Fine-foliaged Plants: first, Mr. Williams; second, Mr. Wheeler; third, Messrs. F. & A. Smith. Miscellaneous: Silver Medal to Messrs. Lane, for *Azaleas*. Small Silver Medal to Messrs. Lane, for *Rhododendrons*; Messrs. Paul and Son, for cut *Roses*; Mr. W. Paul, for Miscellaneous Plants; Messrs. E. G. Henderson, for *Cyclamens*. Bronze, Mr. Ballenger, for *Gloxinias*.

METEOROLOGICAL NOTES—LINTON PARK.

WATER! water! the very name of which last September had so refreshing a sound, threatens now to deluge us with its abundance. Rain, varied by sleet, or now and then falls of snow, has so far soaked the ground as to apparently leave no room for more to be absorbed; and, consequently, our rivers and streams become flooded with only a fraction of the rainfall that would be required after a period of dry weather in the latter part of summer, the thirsty ground at that time swallowing up more rain than I have ever known fall in one day in this district. Saturated, however, as the ground now is (March), a small quantity will suffice to make an impression on our streams.

Mr. Perkins's record of the rainfall of Suffolk bears a great resemblance to that of the place from which I write, only we have had somewhat more rain in the seasons he notices, and the present year has been unusually wet also. Subjoined I

give a table of the monthly rainfall of 1858, 1860, 1864, and 1865, the figures denoting the fall in inches and hundredth parts of an inch:—

	1858.	1860.	1864.	1865.	1866.
January	0.79	2.87	0.77	4.48	3.83
February	0.77	1.40	1.36	2.49	4.55
March	0.80	2.61	3.06	2.14	
April	1.93	2.84	0.59	0.38	
May	2.16	3.12	2.35	2.89	
June	0.67	5.09	1.24	1.17	
July	2.69	2.07	0.63	3.48	
August	1.20	3.54	1.63	5.26	
September ..	1.19	3.36	2.50	0.08	
October	1.45	1.71	1.47	8.04	
November ..	0.77	2.67	4.50	2.74	
December ..	1.91	2.58	1.14	1.93	
Total	16.33	33.66	21.25	35.03	

By the above it will be seen that more rain fell last year than in 1860, the wet year as it is called; but the fall was better distributed, and accompanied by a much greater amount of heat than usual, and besides that, the rain that fell in the summer months came down in something like a succession of thunder showers, with intervals of bright weather between. No evil effects followed it during the months of July and August, when we had such a plentiful supply. September and October were, however, the most remarkable months, the former being the driest and the latter the wettest I have any record of; in fact, from the 24th of August to the 8th of October only 0.08 inch of rain fell, and the heat during the first twenty days of September, taking both night and day together, exceeded that of any like consecutive number of days since 1857. Rain, however, set in on the 9th of October for two or three days, but the wet period did not commence until the 18th, from which time to the end of the month upwards of 6½ inches fell, being fully half an inch a-day. November and December were mild, and more remarkable for dull, drizzling rain than for any heavy fall. January and February of the present year have, however, been unusually wet, the latter month especially so; for here, taking the average of ten years prior to 1865, February is the driest month of the year, and September the wettest. The rainfall of the last three months of 1865, and first two of the present year, has been excessive; but of snow we have not had much, neither have the sharpest frosts produced ice more than half an inch thick; still the many changes, combined with some slight frosts about the end of February, destroyed many plants that withstand a mild winter. Returning to the meteorology of 1865, I may say that January was wet and changeable; February cold, with frequent slight falls of snow; March also cold; but April very warm, dry, and fair, only one frosty night being recorded—a most unusual circumstance. In May there were three frosts, and on the whole it was a favourable month. June was very dry, no rain falling from the 3rd to the 29th. July was a showery and growing month; August equally so up to the 24th, after which it was dry and hot, the drought continuing throughout September and up to the 9th of October, when three wet days were followed by four or five fine ones, and then the rest were all wet. November and December were mild, dull, and wet, with scarcely any frost—so little, in fact, that *Geraniums* out of doors were quite fresh up to the 11th of January of the present year, when a rather heavy snowstorm and two nights' frost destroyed them. High winds have been frequent during the winter, and during the summer of last year we had very little thunder.

To all interested in the amount of rainfall in the different parts of Great Britain, I would recommend a perusal of Mr. Symons's "Rainfall for 1865," and former years. That for last year gives upwards of one thousand stations in the United Kingdom, and, of course, there is a considerable difference amongst them; but, as a general rule, the western parts of the kingdom are wetter than the eastern, the driest of all being Norfolk and Suffolk. At certain stations on the Cumberland hills, in some years as much as half an inch a-day is recorded for the whole year, and on some occasions even 6 inches have fallen in one day, and upwards of 15 inches in four consecutive days. At none of the Scotch stations, although similarly placed as to elevation, &c., does the amount approach this.

For the information of those who take an interest in other meteorological observations besides those of rainfall, I may add that the prevailing winds during the past year at this place, as noticed at noon each day, have been from the south and south-west; for, taking the eight cardinal points as they come, the wind has been as follows:—East, 28 days; south-east, 45; south, 59; south-west, 74; west, 36; north-west, 29; north, 35; north-east, 55; and four days were not ascertained. The num-

ber of rainy days was 172, against 216, in 1860, and there was frost on 80 days. The hottest day was June 21st, and the coldest February 15th. The highest reading of the barometer was on December 10th, 30.37 inches, and the lowest on January 14th, 28.14. I may further add that the average rain-

fall at this place for the ten years ending with 1864, is 24.75 inches, so that the fall in 1865 was nearly 50 per cent. in excess of the average, and what we have already had in the first two months of 1866 is more than three times the average of these months.—J. Robson.

CULTURE OF VINES IN POTS.

(Continued from page 253.)

It is a common practice after preparing the eyes to insert a dozen or more in a pan, and after they have struck and begun to grow to pot them off into small pots. The advantages of this system consist in the necessity for watering being diminished, and they are, consequently, not so liable to rot or become blind, and a more equable temperature is secured than were they inserted singly in small pots at first. These advantages, however, I have found more than counterbalanced by the check received on potting the eyes after they have been struck. I find they receive a serious check on being taken from the pan, and potted into small pots; for however carefully the operation may be performed, it is not possible to avoid breaking the roots more or less.

Some, again, grow the canes for fruiting in nine-inch pots, and supply them largely with liquid manure. Of this practice, also, I am no advocate. In small pots fruiting canes are either highly fed by liquid manure, or the roots have been allowed to extend from the pot into a border of rich soil. In the first case, the continual stream of liquid manure converts the soil into a soapy black mass, and the roots lose most of their fibres at the fall of the leaf; besides, there cannot be nearly so many roots, and consequently mouths, in a small pot as in

a large one. In the other case the roots, from being allowed to extend beyond the pot, are for the most part (and the better portion of them) lost to the cane the year of fruiting. To insure the Vine breaking well there cannot be too many fibrous

roots in the pot it is to be fruited in; but when the canes have been allowed to root through, or are potted into larger pots, it is necessary that these should be plunged in a hotbed of about 70° for a fortnight or three weeks, the top heat from fire heat being kept at from 40° to 45°. The accompanying end sections will show means for furnishing bottom heat for a time, and afterwards a medium for the Vines to root into.

Fig. 1 shows a span-roofed house 12 feet wide, with a walk in the centre and a border of soil on each side, 18 inches deep, over rubble. The pots are placed a couple of inches deeper in the soil than the side holes in the pots, through which, and that at bottom, roots will be protruded in due course. It is not a desirable form of house for early forcing, but will do after Christmas. The soil of all the borders should consist of turves a year old, chopped with a spade, and one-sixth of boiled half-inch bones. Over the drainage a layer of sods, grass side downwards, will keep the rubble from becoming choked up with

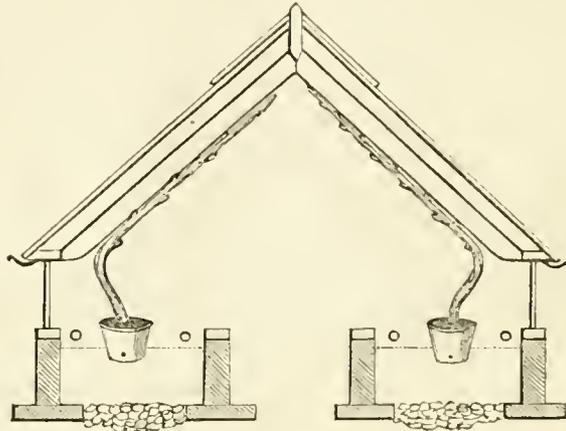


Fig. 1.

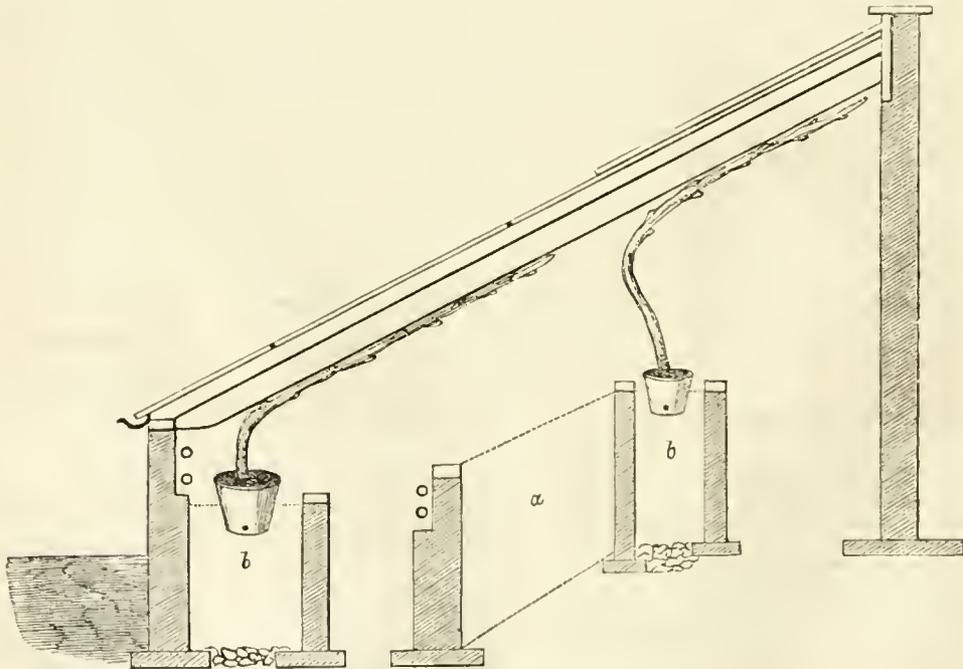


Fig. 2.

soil; and under the drainage or rubble should be a drain to carry off the water. No manure is to be mixed with the soil, as it is best given on the surface.

Figs. 2 and 3 are the same in their internal arrangements, both having convenience for fruiting Vines and raising young ones in the centre bed a, which should be filled with new tan

about Christmas, ready for the eyes early in January, and it will be useful for other things at that season until the young canes require the whole of the space. The side borders, *b*, *fig. 3*, are of soil, for this house is not eligible for early forcing;

those of *fig. 2* may be filled with dung and leaves, the pots being plunged therein to three-quarters of their depth until the Vines break, when they are to be gradually lifted out; soil should then be placed on the dung and leaves to the depth of

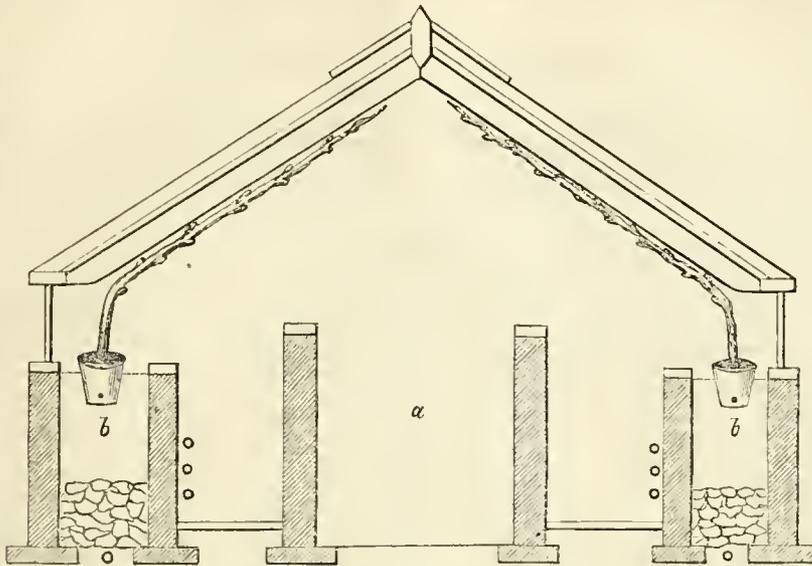


Fig. 3.

6 inches, the pots remaining plunged that depth always. *Fig. 2* will answer for early forcing.

Fig. 4 is a narrow lean-to, 7 feet wide, with a walk at back

and a border in front, in which the pots are plunged about an inch deeper than the rim, and the roots not only come through the bottom of the pot and the holes in the sides, but over the

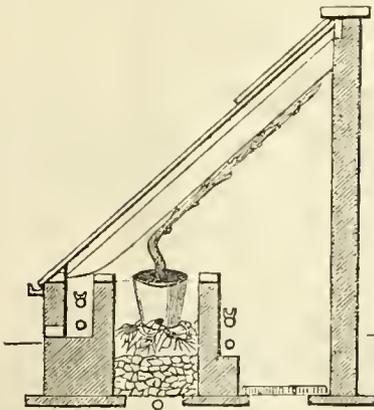


Fig. 4.

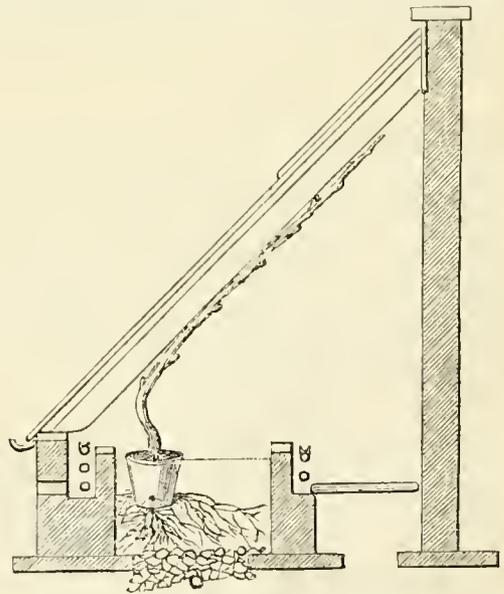


Fig. 5.

rim, and the canes carry a much heavier crop in this way than in any other with which I am acquainted.

Fig. 5 is simply a narrow lean-to, 9 feet wide, and this and the preceding are the most suitable for early crops. They have guttered pipes back and front, and in the front wall is

an opening at every 2 feet for a circular ventilator, 6 inches in diameter, which can be opened much or little at will. The air entering there becomes heated before it reaches the Vines.

The scale of all the sections is 5 feet to the inch.—G. ABBEY.
(To be continued.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

EVERYTHING connected with this department should now be kept in good order. Take every opportunity of eradicating weeds; hand-weed where practicable, as it more effectually answers the purpose than hoeing and raking when the soil is

moist. Cut Box-edgings, and keep the walks well rolled. *Basil*, a warm sheltered spot may now be chosen for a sowing in the open ground; but as it is a rather tender annual it is generally the best plan to sow in pans, or on a slight hotbed, and afterwards plant it out. *Beans*, earth-up the early crops, but be-

for doing so lay a little soot close to the stems as before recommended, and branches of evergreens stuck pretty thickly on each side of the rows will be found serviceable in protecting them from frosty winds. Keep the soil between the rows free from weeds, and open by frequent stirrings. *Borcole*, make a sowing for the early crop; what is commonly called the Scotch Kalo is the best variety. *Cabbage*, pull up any of the plants that are running to seed in the autumn plantation, and fill up from the reserve-bed. During dry weather the plants should be supplied with water, and the soil kept free and open by a frequent use of the hoe or fork. *Celery*, the main sowing for the winter crop should now be made. Continue to prick-out from the early sowings. Clean and earth-up any that has stood the winter, as, if it is of no other use, it will do for soups. *Cucumbers*, keep a brisk heat in the beds as the days lengthen and fine weather increases, bearing in mind that light and heat should be proportionate to each other; give air daily in a greater or less degree, and keep the lights free from dirt. If green fly or thrips appear, recourse must be had to fumigation, which will generally exterminate them. *Kidney Beans*, the bearing plants will now require a good supply of water at the roots, as well as frequent sprinklings overhead. A sowing may be made on a warm sheltered border when the soil is favourable for early crops, or make a sowing in pots for planting-out as soon as all danger from frost is over. *Lettuce*, give air to the plants in frames night and day in mild weather. Loosen the soil about those planted in the open air. If the crops of *Onions*, *Leeks*, *Parsnips*, *Beet*, *Salsafy*, *Scorzenera*, and *Skirret* are not yet sown they should be no longer delayed; and the main crop of *Carrots* should be sown if the ground is in good order. In sowing *Peas*, it is the most workmanlike method to put the stakes to them at once, as, by so doing, the barren appearance of the ground is removed, and no more tramping on it is necessary for a long time, besides which they afford a slight shelter to the young plants on their first appearance above ground. *Spinach*, sow once a fortnight, and *Peas*, *Beans*, and *Turnips* once in three weeks. Sowings of all salads should be made with strict regularity; and proper attention must be paid to protecting all kinds of seeds from the ravages of birds and insects. *Rhubarb* will now be coming forward so rapidly out of doors that the forcing of this useful vegetable will no longer be necessary.

FRUIT GARDEN.

Look to blossom-protection on the walls. Clean Strawberry-beds, and thin the suckers from Raspberries, leaving three or four strong ones to each stool. If strong young plants of the Elton Strawberry are lifted this month and planted behind a north wall, they will produce a crop in August and September, and will keep up the succession, along with Alpines, to the latest period. On the first appearance of green fly on the Peach and Nectarine trees syringe these with tobacco water two evenings in succession; if done properly it will stop their career for the season. The mining grub, so destructive to the Apricot and Plum, may be easily detected by the leaves being folded up; the best cure is to crush them between the forefinger and thumb. See that wasps are destroyed, as every one that appears now forms a colony in the summer.

FLOWER GARDEN.

Now, with April showers and bright and occasional warm sunshine, we must be in readiness for mowing. Have the turf swept, well rolled, and made thoroughly firm without loss of time, and remember if the first mowing is deferred until the grass become long it will require much time and labour to bring the turf into proper order. Patches of some of the more showy of the hardy annuals may now be sown in the vacant places which usually exist in the herbaceous beds, and in the edgings of clumps and borders in the shrubbery. A sufficient quantity of cuttings and seedlings should be potted for planting out in May. With such plants as *Cobæus*, *Manrandyas*, *Lophospermums*, *Tropæolum canariense*, many bare places on the walls and trellises may be covered and made ornamental. Also plant-out Wallflowers, Double Rockets, and young stock of herbaceous plants generally. Prune Tea and other Roses not already pruned, and attend to any shrubs that may require that attention.

GREENHOUSE AND CONSERVATORY.

Besides the permanent plants in the conservatory, many choice plants in pots will be required to keep up a succession of gay flowers during the summer. Among the finest for this purpose are *Brugmansias*, *Erythrina crista-galli*, *Tinbergias*, *Stephanotis*, *Mandevilla suaveolens*, *Allamandas*, *Echites*, *Achimenes*, *Ipomeas*, with *Heaths* and *Pelargoniums*. Let

these have all possible attention, and bring them forward in several lots, so that one set may succeed another. Pay particular attention to the Lilies now in pits, by giving them a liberal supply of water, and by neatly staking them. A top-dressing of turfy peat, sand, and well-decomposed cowdung, will be of great benefit to them, and they will be very useful for conservatory or drawing-room decoration late in the autumn. Let *Fuchsias*, which are so useful for summer and autumn flowering in the conservatory, be repotted as they require it in rich compost, watering them occasionally with liquid manure. Nearly all the varieties have a natural tendency to form conical bushes, and, by a very little attention, they may be guided into this appropriate form. One strong shoot should be selected to form a leader, and should be trained perfectly upright, the remaining shoots being regulated by stopping any which are growing more luxuriantly than is consistent with the proper shape of the plant. Violets are everybody's flowers, and, to have them fine and in abundance, they require and well merit some share of attention, particularly where they do not naturally succeed well. In some situations they grow so strongly, and flower so abundantly, that they merely require at this season to be taken up, parted, and replanted, and, if kept free from weeds, all will go well; whilst in other places they frequently cause more trouble than a collection of *Auriculas*. A frame on the north side of a wall is the most likely situation for preventing the attacks of the red spider, to which they are very liable, and which cause them to lose their foliage during the winter. About the beginning of September they should be planted in a frame upon a spent Melon or Cucumber-bed, where they will have time to establish themselves well before winter, and if frost is excluded, and plenty of air given at all times during fine weather, perfect success may be expected. In the greenhouse the leading shoots of *Epaerises*, *Chorozemas*, *Correas*, *Heaths*, together with many other choice plants that produce the best effect in a bushy condition, should be frequently pinched or stopped in order to form good specimens; also those of *Calceolarias*, *Verbenas*, and other young stock intended either for decorating the flower-beds or for succession in pots.

STOVE.

Proceed with the repotting of such plants as require it, and give all necessary attention to those in active growth, using every means to induce rapid growth, combined with strong short-jointed wood. The only way of effecting this is by securing vigorous root-action, and keeping the plants near the glass. *Ixoras*, *Clerodendrons*, *Allamandas*, &c., "feeling their pots," will be greatly benefited by a careful supply of manure water, but see that it is given in a tepid state.

PITS AND FRAMES.

Attend carefully to the stock of bedding plants, pot-off rooted cuttings as soon as they are in a fit state, and encourage them with gentle bottom heat and careful management to make quick growth, for after this season there is no time to be lost with young stock. *Calceolarias*, if well established, may be planted out in a turf-pit in poor sandy soil where they can be protected from frost or cold winds, but they must be prepared for this by previously inuring them to full exposure to sun and air whenever the weather will permit.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

THE weather has been still too unsettled, and the stiff ground too claggy to permit of all being done that is desirable.

Cauliflower.—Forked over the soil among the earliest, which will be later than usual this season, owing to mice and rats having stumped it in as detailed some time ago, a circumstance which precluded their producing good heads. Whilst a lot of fine, strong plants in pots, which if left alone would soon have been showing heads, were thus almost cut down to the surface of the soil, others, smaller and in a similar box, but growing in the soil in which they were sown, were not touched at all. What was if anything more annoying, was the fact that the depredators seemed to have derived no benefit, except amusement, from their work, as though the plants were cut over and nibbled, hardly a bit seemed to have been eaten. The most kind-hearted in such circumstances would be apt to give little mercy in arresting the results of poisoning, trapping, and ferreting. Tough barleymeal, made into a stiff paste with a little water, is much relished by rats, and if mixed with a stick, and laid down with the stick in pieces near their runs, it will soon

be eaten up, and when that is done the same process may be repeated after mixing arsenic with the meal. Care must be taken that no useful animal touch these lumps. We find that mice will seldom touch this mixture, though, on the whole, they are much more easily trapped and poisoned than rats.

Sowed the main crop of Parsnips a week ago; if the ground had permitted would have liked them to have been in about a month earlier. Sowed also the main crop of Onions in good order, and a piece of Horn Carrots. Have been watching for a suitable time to put in the main crops of Carrots, but the ground is not yet so nice as we would like it to be. We generally make two or three main sowings of Carrots; the later ones are sweeter for parlour use, though not so large as the early ones. To have fine Carrots the ground should not only be deeply stirred, but the surface soil should be the poorest, the richest being at the bottom, which will make them run straight without shouldering, &c.

A piece of Newington Kidney Beans in a pit has grown so very strong, that we have had to remove some of the larger leaves to give more room, light, and air to the numerous swelling pods and clusters of bloom. In general this Bean only requires about half the room of such kinds as the Robin's Egg and the Cream-coloured. A row of Robin's Egg, in pots in the front of the Peach-house, just in bloom must be removed to another place soon, or they will shade the Peach-house. A lot in six-inch pots will succeed them; some to be potted in 12-inch pots, if we can find room for them, and others to be planted out under glass protection, and covered when necessary. We shall be glad when they are all out of the houses, for, though clean enough now, a miss in watering, &c., after they have borne sometime will be apt to give them company which we would not like to see in the houses, and removing plants after thrips or red spider is seen upon them is apt to leave behind them some of these insects for future breeding. A single pot of Kidney Beans well looked after in a vinery or Peach-house may be used as testing plants at times for thrips and red spider. If one appear on the Kidney Bean plant, not only should it be carefully removed, but means should be taken by watch and ward to see that the insects do not take possession of the stationary residents of the house.

FRUIT AND ORNAMENTAL DEPARTMENTS.

In these, in which we have been busy regulating Peaches and Vines, giving the best places for securing good flavour to fine ripening Strawberries, doing a good deal of turling, potting, and propagating, the work with one exception has been so much a repetition and continuance of what was alluded to last week, that in compliance with several requests we will repeat, somewhat as stated long ago, our

Simple Mode of Managing Hotbeds for Cucumbers and Melons.

—This involves less labour than the old plan of planting in hills and earthing-up gradually afterwards. We adopted the plan at first from a scarcity of fermenting material, and the desire to lessen labour afterwards. The same mode may be adopted in its general features for a pit heated by dung, as well as for a frame. At present, however, we shall confine our outlines to frames, which are from 5½ to 6 feet in width, 12 inches deep in front, and 18 or 20 inches deep at back, at which size two-light boxes are easily moved, and which, managed as stated, are quite deep enough for Cucumbers and Melons. We have several times stated, that we never work the bulk of the fermenting material sweet enough for such beds, being content if we have a covering of from 6 to 12 inches deep of sweet hot material for the surface. For a substantial bed that is to be pretty early and stand the most of the season, we shall suppose that the bed is to be 3½ feet in height at back, and 3 feet in height in front before the frame is set on it. We mark out the space for the bed, which must be from 30 to 36 inches wider than the frame, so that when the frame is set on, the bed shall be from 15 to 18 inches wider than it at back and front. This first seeding waste will prove ultimate economy and gain.

When the bed has been neatly made, and raised by the roughest and rankest of the hot fermenting material for 2 feet in height, 6 inches of sweetish hot material are placed all over it, and then the bed is continued upwards, back and front, but leaving an open trench of 30 inches in width in the middle, keeping the best and sweetest dung next that trench, and the roughest and rankest to the outside of the bed. When the above height is reached, 3½ feet at back, and 3 feet in front, the frame is set carefully on, and each side of the trench in the bed is well beaten back and front, and a board or slab put down on each side to keep the earth that will be put in the trench from the dung. This trench will be about 30 inches wide, rather more

at the top, and from 15 to 18 inches deep. The glass is kept close for a few days until the heat has risen kindly. Then the trench is filled with suitable soil, the top of the soil being very little above the bottom of the sides of the frame. Some soil is firmly beaten round the sides of the frame inside, to prevent steam entering, and a couple of inches or so of soil is placed on the bed, between the boards of the trench and the sides of the frame, and this covering, if even the upper layer of dung, &c., is pretty sweet, will keep all noxious steam down.

By this plan the following, among other advantages, are secured:—

1st, Not much more than a third of the soil which would be wanted if the whole width of the bed were filled, need be used.

2nd, All the soil necessary is put in at once in the centre of the bed, where good-sized plants are at once inserted, and can be trained to back and front without opening the lights for fresh earthings-up, often of cold soil; and we avoid the necessary moving of the plants and exposure to cold draughts, often followed by hosts of insects, requiring much fumigation with tobacco to eradicate them. Sudden changes in temperature under such circumstances are often the most fruitful sources of an abundant supply of insects.

3rd, If the sides of the frame are well secured, it will need no moving afterwards, if the soil is 12 or 13 inches from the glass at front and 18 inches at back, for the frame will sink as the bed sinks.

4th, The soil being placed as it were in the middle of the bed, there will be no danger of an excessive, burning bottom heat to injure the roots, whilst the soil will be nicely and quickly heated from below and from the sides.

5th, The width of the bed permits of a lining being placed round the box to give a nice healthy atmospheric heat, without unduly increasing the heat at the roots.

6th, Such box-beds have been kept in good order from March to the end of September merely by topping up round the frames with litter and grass, and placing wattled hurdles or leafy branches of trees round the sides of the bed to keep the air and wind from them.

7th, and lastly for the present, such a trench of confined earth will render Melons and Cucumbers less luxuriant and more fruitful than if the roots revelled in the whole width of the bed.

The one exception alluded to had reference to

Caladiums.—These, as last year, were plunged in a nice mild hotbed of dung and leaves. We noticed for some time many of the leaves more pale than they ought to have been, but did not sufficiently examine them to find the cause, as the temperature, &c., seemed all right. Our young man on taking some out and narrowly examining them, found lots of the stems encrusted with a small green fly, myriads on myriads of them. They were carefully smoked, and next day were thoroughly syringed with warmish water, and lest any insects should linger in the soil the surface soil was removed, and a fresh surfacing given where fresh potting was not resorted to, and already the leaves are coming of their right and healthy colour. We have as yet been so free of insects this season that we never thought of the *Caladiums* being infested. If they had stood in a house we could scarcely have missed seeing them; but in a pit, without examining them carefully, we could only look at the top surface of the leaves. We have no recollection of seeing *Caladiums* so infested before. The fly seemed a kind that was very easily settled; but the vast number would soon have spoiled any plants.

Lumbago.—We have known but little of the horrors of lumbago since we tried this simple remedy—viz., wearing a band of brown paper round the loins. We will here say nothing as to how the gentle, almost constant, friction produces the desired result; but to every gardener who is a sufferer from this trouble, we would say "Try the remedy."—R. F.

TRADE CATALOGUE RECEIVED.

Louis Van Houtte, Ghent, Belgium.—*Catalogue de Plantes de Serres, et de Plein Air.*

COVENT GARDEN MARKET.—APRIL 7.

THE demand and supply are now well balanced. Grapes and forced Strawberries are both very good, and of both there is a fair supply. Dessert Pears now consist almost exclusively of Easter Beurré. Outdoor vegetables of various kinds are abundant; and consignments of

salads from the continent continue ample for all requirements, and arrive in good condition. New Potatoes come in from Malta, the south of France, and Guernsey; those from the first-named place being especially good.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples 1/2 sieve	3	0	5	0	Melons..... each	3	0	5	0
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	6	0	12	0
Chestnuts..... bush.	8	0	16	0	Peaches..... doz.	0	0	0	0
Currants, Red 1/2 sieve	0	0	0	0	Pears (dessert) .. doz.	6	0	12	0
Black..... do.	0	0	0	0	..... kitchen..... doz.	0	0	0	0
Figs..... doz.	0	0	0	0	Pine Apples..... lb.	8	0	12	0
Filberts..... lb.	0	0	0	0	..... 1/2 sieve	0	0	0	0
Cobs..... 100lbs.	0	0	16	0	Quinces..... 1/2 sieve	0	0	0	0
Gooseberries 1/2 sieve	0	0	0	0	Raspberries..... lb.	0	0	0	0
Grapes, Hothouse.. lb.	15	0	25	0	Strawberries..... oz.	1	0	2	0
Lemons..... 100	6	0	10	0	Walnuts..... bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... each	0	6	0	0	Leeks..... bunch	0	3	0	0
Asparagus..... bundle	6	0	10	0	Lettuce..... per doz.	1	0	1	6
Beans, Broad.. bushel	0	0	0	0	Mushrooms..... pottle	2	0	3	0
Kidney..... 100	2	0	3	0	Must.& Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... bushel	3	0	5	0
Broccoli..... bundle	1	0	1	6	Parsley..... sieve	2	0	3	0
Bras, Sprouts 1/2 sieve	2	0	3	0	Parsnips..... doz.	0	9	1	6
Cabbage..... doz.	1	0	2	6	Peas..... quart	0	0	0	0
Caulicums..... 100	0	0	0	0	Potatoes..... bushel	2	6	4	0
Cauliflower..... bunch	0	4	0	8	Kidney..... do.	3	0	4	0
Celery..... doz.	2	0	6	8	Radishes..... doz. hands	0	6	1	0
Cucumbers..... bundle	2	0	3	0	Rhubarb..... bundle	0	6	1	0
Celery..... doz.	0	6	2	0	Savoy..... doz.	2	0	3	0
Cucumbers..... each	0	6	2	0	Shallots..... basket	1	6	2	6
Pickling..... doz.	2	0	0	0	Spinach..... lb.	0	5	0	0
Endive..... doz.	0	0	0	0	Spinach..... bushel	5	0	0	0
Fennel..... bunch	0	3	0	0	Tomatoes..... 1/2 sieve	0	0	0	0
Garlic..... lb.	1	0	0	0	Turnips..... bunch	0	4	0	6
Herbs..... bunch	0	3	0	0	Vegetable Marrows dz.	0	0	0	0
Horseradish..... bundle	2	6	4	0					

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

FARMING ACCOUNTS (*J. Powell*).—You cannot have a better account-book than that published by Mr. W. K. Newcomb, Stamford. It is very simple, yet very comprehensive, and he would send it you by post, free, if you sent him 6s. in postage stamps, with your address.

LARGE WHITE PETUNIA.—Mr. W. Herbert, 23, South Street, Durham, informs us that he can supply this Petunia to "E. S. E. G." if the address be sent.

CHERRIES GRUB-EATEN (*Lastrea F. Mas*).—The grubs which pierce the Cherries in your orchard-house are certainly not the larvae of the Goat Moth, but of some much smaller species, probably a Tortrix. We can suggest no remedy; but the best preventive will be to destroy all the fruit attacked, and to look in the evening for the parent moths.

CHRYSASTEMUMS (*A Constant Reader*).—You will find full directions for their culture in "Florist's Flowers." You can have a copy free by post from our office if you enclose five postage stamps with your direction.

COIL-TRAINING VINES (*Vines Twisted*).—Last year Mr. Fish noticed a viney near Hitchen, in which the Vines were planted in the centre of a span-roofed house, and the Vines twisted in cork-screw fashion until they reached the apex. These Vines bore regularly from the ground to the apex of the roof, and, as was described, came down a little. The mere twisting of the stems will do no harm to the Vines. Cracking the stems and splitting them would be carrying the twisting too far. The Vines would soon recover from a little splitting here and there. If you were to cover these split parts with a little cowdung and clay, and wrapped this plaster firmly round with a cloth to exclude air and light, the cracks would soon disappear. The object of twisting was no doubt to cause the sap to circulate more regularly through the stem.

GREENHOUSE FLEA IN PARLOUR CHIMNEY.—Having read a reply at page 248 relative to one chimney for two greenhouses, and a flea not answering which communicates with the parlour flue, I write to state that I have a greenhouse at the end of my house. The parlour chimney being next the greenhouse, I took my flue about 3 feet up the parlour chimney, and made an elbow joint, no matter how short, to convey the smoke upwards, and this answers very well. A goose-necked pipe 7 or 8 inches in diameter goes through the wall, and about 6 inches up the chimney. This flue has no effect on the parlour flue, whether in or out. By this plan the flue is not seen, being below the staging.—EDWARD TODD, North Shields.

THINNING PEACHES ON TREES IN POTS (*S. L. T.*).—We would advise your leaving from 18 to 24 fruit to ripen, according to the size of the tree. As many more might remain until they were half swelled, then reduce to eighteen for fair-sized trees.

WIRE NETTING FOR PEAS (*Idem*).—We have often seen wire netting used for Peas. Stakes 4 feet in height were driven into the ground at 6 feet apart, and then the wire was fastened to each side. Very light wire hurdles with feet have been used for the same purpose. We have several times used stout stakes or sticks from 4 to 6 feet apart, and then run strings on each side at a foot from each other.

FLOWER BASKETS ON A LAWN (*R. F. S.*).—We have no doubt that your proposed plan will answer—namely, filling the two baskets on grass with Pampas Grass in the centre, Gladioli round it, and Farfugium at the outside, with Perilla between that and the Gladioli; but if the place will do for Farfugium, it might be made more gay in summer, even if a shady place, in front of the drawing-room windows. Thus, fill the centre with Gladioli mingled with large-leaved Cannas, then have a mixture of Perilla and Amaranthus melancholicus, and for the outside a broad band of Cloth of Gold Geranium or Mrs. Pollock. The Cloth of Gold will do all the better in the shade, and then you could plant the Pampas Grass in the ground farther off. Even on your first proposed plan we would have a few Penstemons to fringe the Gladioli, then the Cloth of Gold instead of the Farfugium, and a string of the Viola roots for the outside line. The worst of Gladioli is that they are temporary flowers, and the Pampas Grass is nothing until late in autumn.

CUCUMBERS THICK-ENDED (*C. H. J.*).—We would advise you to thin the Cucumbers considerably; and to make sure that the roots seldom touch the top of the tank, it would be well to have some rubble, and then some rough slates below the soil between it and the tank-covering.

CULTURE OF GASTERIAS (*A. S.*).—The Gasterias belong to the Aloc section of the Lilyworts. They are very nice plants for a succulent collection. They will do well in a house kept from 45 in winter to 60° and more in summer. They flourish best in sandy loam with a little peat and very rotten dry cowdung, and some lime rubbish and broken bricks—say two parts sandy loam, half a part of cowdung, &c., and half a part of broken bricks and lime rubbish. The chief care they require is to keep them rather dry, almost dry, when in a state of rest in winter. If the pots stand on a damp stone or damp gravel they will absorb enough of moisture in the dark months. All the title-pages and indices you name can be had free by post from our office if you enclose nine post-office stamps with your direction.

CUTTING CAMELLIA FLOWERS (*A. B.*).—When the flowers are cut by a practised person it does not interfere with the future flowering, for the blooms will only be cut from a part where the subsequent growth will not be interfered with; but when they are taken indiscriminately from every part, then the future growth and flowering are materially affected. When the plants are "cut hard" for their blooms they should be gone over after flowering, and any irregular growths removed or shortened, so as to make the shoots equally thin, and these should be regularly stopped throughout in order to secure their breaking equally at every part, the plants being afterwards placed in heat to secure a regular and free growth.

COLEUS VERSCHAFFELTI FOR BEDDING (*F. T. C.*).—The soil you employ for getting—viz., two-thirds loam, one-third leaf mould, and one-sixth silver sand, is good. The soil of the border is also good, providing you enrich it by pointing in a dressing of good loam and well-rotted manure. The top-dressing ought to be 3 inches thick. The plants should be placed 1 foot apart every way, and be well watered in dry weather. You should grow the plants to a good size, and well harden them off before planting out. Do not do this until the second week in June.

FLOWER-BEDS PLANTING (*Idem*).—Instead of edging the bed of Purple King Verbena with yellow Calceolaria, we should put the Calceolaria in the centre and the Verbena round it, or, if your bed is sufficiently large, have Perilla in the centre, then a band round it of yellow Calceolaria, edging with Purple King Verbena; and it would be better, again, if the Verbena were made a band 2 feet wide, edging it with Cerastium Biebersteini. Your plan of putting the Verbenas in the centre and edging with yellow Calceolaria is good as to contrast, but the Calceolaria would grow too tall for the Verbena. The bed of Scarlet Geranium, edged with Flower of the Day Geranium, is good, the flowers being removed from the latter.

CUTTING IVY (*T. J.*).—Removing the leaves or cutting-in the Ivy closely will cause the new shoots to come more strongly, and the foliage will be more plentiful and finer. Any time from now until the end of April is a good time to cut Ivy in closely.

TWELVE DISTINCT VERBENAS FOR PLANTING IN CIRCLES (*Idem*).—If you plant the circles in order we think they would look well. 1, Velvet Cushion; 2, Mrs. Moore; 3, Meliadres splendens; 4, Mrs. Holford; 5, Purple King; 6, Firefly; 7, White Lady; 8, Ariosto Improved; 9, Mrs. Woodroffe; 10, Snowflake; 11, Garibaldi; 12, Spark.

MANURE WATER IN THE EVAPORATING TROUGH OF A VINERY (*Subscriber*).—Now that the leaves have attained their full size you may keep the troughs filled with manure water from your stock of sheep's dung, soot, and guano. A peck of sheep's dung, the same of soot, and 2 lbs. guano should be diluted with 60 gallons of water. You may instead fill the troughs with manure water of the same strength as that used for watering plants. It acts as a check upon red spider, and invigorates the Vines.

STOPPING PEACH TREES IN POTS (*Idem*).—If the trees are as large as you wish, and you desire to keep them close and compact, stop the shoots at the fourth or fifth leaf, and at every leaf afterwards, and there will be no necessity to prune in winter; but if you wish the trees to become larger stop them at the fifth leaf, and at the third afterwards, discontinuing the stopping after the fruit has taken its second swelling. You may also allow the shoots to grow without stopping, cutting them back to a triple bud—that is, two fruit buds with wood bud between them, reducing them to 9 inches if longer, but if not so long and having no triple bud to cut back to, leaving them entire. We recommend the first practice for trees in pots, and the second for those planted out and having plenty of room to grow, whilst the third we do not recommend for trees under glass as bushes or pyramids, but only for trees on trellises and against walls.

MANURE WATER FOR LYCOPODIUMS (*Idem*).—We do not recommend anything stronger for Lycopodiums than clear water; your plants will be all the better of rain water. Ferns and Lycopodiums do as well, if not better, watered with rain water only, and to some manure water is positively injurious.

CYPERUS ALTERNIFOLIUS VARIEGATUS (*W. F.*).—Its usual height is from 9 inches to a foot under good cultivation, but we have seen it as low as 3 inches and as high as 18 inches. If placed in a saucer of water whilst growing, or in summer, the temperature of the water should be the same as that of the house. Our correspondent wishes to have the names of any semi-aquatic plants for a house having a winter minimum temperature of 56°.

GYMNOGRAMMA CHRYSOPHYLLA CULTURE (H. G.).—Your plant does not grow because the temperature is too low. It requires a night temperature of not less than 55° in winter, and a moist atmosphere without the foliage being wetted. Your plant is probably old; such plants never do so well as those which, from being very small, are liberally treated until they become specimens, after which they gradually decline. If you have now a small plant in, say, a 4½-inch pot, we would pot it at once into an eight-inch pot, draining the pot to one-fourth its depth, and using a compost of old coco-nut refuse one-half, turfy yellow loam one-fourth, and fibrous brown peat one-fourth, adding one-sixth of silver sand, the whole well mixed and broken with a spade, but not sifted. Pot rather deeply, but not so much so as to cover the crown. The plant should be set in the lightest part of the house, have room on all sides, and be not more than 18 inches from the glass. The soil should be kept moist, but not wet, until the roots are working freely, and the temperature may range from 60° to 65° by night. By day it may be 70° without sun, and from 80° to 85° with it, shade being afforded from 9 a.m. to 4 p.m., when the sky is clear, but when cloudy do not shade at all. No shade will be needed from September to April. The plant must always have the soil moist, but no water should be given until it is really needed, then afford a supply sufficient to show itself through the bottom of the pot. If your plant grow as well as we expect, it will need a shift by the end of July, or at latest by the third week in August, so that the pot may be filled with roots before winter, as it will be in six weeks after potting if a 10-inch pot be given. From this time no more water should be given than is sufficient to prevent the soil becoming dry, and if a sufficiently moist atmosphere be maintained, it will winter safely in a temperature of 60° at night, and occasionally as low as 55° or even 50°, but this degree must be seldom reached. In March you may give a shift into a 15-inch pot, and we think you will have a specimen large enough for anything by August, and it may remain good a year or two longer.

CINERARIAS ATTACKED BY BROWN APHIS (A Subscriber).—From your description of the insect infesting your Cinerarias we should think it is the brown or black aphid, and if so, it is most injurious, especially to young plants. We find the following destructive to it:—Pour one gallon of boiling water over 4 ozs. of the strongest shag tobacco, cover it over closely and allow it to stand until cool, then add 1 lb. of soft soap dissolved in a gallon of water, strain through a piece of muslin, and add three gallons of water; there will then be nearly five gallons of liquid. In this, at a temperature of 90°, the plants should be immersed with their heads downwards. A cure will thus be generally effected; if not, repeat the application.

GARDEN DESIGNS (Bob).—It is a great mistake to suppose that variety in the form of the beds contributes to the beauty of a flower garden. The simplest forms correctly planted and well balanced are the most effective.

BELLADONNA LILY (A Subscriber).—If you turn out the plants next month in a warm sheltered situation, they will flower in the end of September or early in October.

HORTICULTURAL GLASS (Miss H.).—We do not know any of the manufacturers at Liverpool, Sunderland, or Durham. You will find their names in the County Directory.

PLUNGING-MATERIAL (W. A. O.).—The safest material for plunging pots in is sand or coal ashes. Sawdust from old dried hard wood will do very well; but all fresh sawdust from green wood has a tendency to clog up the drainage-holes in the bottom of the pot, and is also liable to become a breeding-place for fungi and conifers.

SEEDS (Ignoramus, Dublin).—They are the seeds of some Pinus or Abies, but we cannot name plants from seeds.

DESTROYING RED SPIDER (A Constant Reader).—Yours appears a very bad case, and we recommend the following remedial measures:—1st, Wash the glass inside with clear water. 2nd, Wash the woodwork with a strong solution of soft soap, 8 ozs. to the gallon of boiling water, using it as hot as possible, washing it clean off and all the dirt with a flannel, but keeping the soap from the glass. 3rd, Whitewash the walls with two-thirds lime, one-third flowers of sulphur, brought to the consistence of whitewash by adding a solution of 4 ozs. of soft soap in a gallon of boiling water. 4th, Keep the evaporating-troughs full, and the floors sprinkled twice or thrice daily with guano water, made by dissolving 2 ozs. of guano to the gallon of water. 5th, Syringe the plants vigorously twice daily, morning and at shutting-up, with water of the temperature of the house. If you do this, and still have red spider at the end of ten days, then, 6th, Mix sulphur to the consistency of thick paint with the soft soap solution previously named, and apply this to the pipes, heated to 160°, shutting-up the house quite close, and coating the pipes from one end to the other. Put on the sulphur wet, and when done commence syringing gently with water at 120° until you fill the house with steam. 7th, Syringe the plants in the morning with soot water, made by putting a peck of soot in a tub, pouring over the soot 30 gallons of water, and stirring it up until it sink. Allow the whole to stand until clear, and use the clear water for syringing the plants morning and evening, continuing to moisten the floors with guano water as before, and within a week of the first coating of the pipes with sulphur repeat the process. The only danger you have to fear is not giving air by the time the sun shines powerfully on the foliage whilst it is wet. We should think that the houses have been kept as dry as dry stoves were in former times, to bring about the state of affairs described in your letter. We agree with you, that the fact of the houses not having been washed and thoroughly cleaned for a long time has been favourable to insect life; thorough cleanliness is the great safeguard against disease and vermin. The two inches of soot over the crocks at the bottom of the Strawberry pots is one-eighth in excess; that and the frequent applications of manure water in winter fully account for there being few roots in the pots of fruiting Strawberries. Liquid manure cannot benefit plants when at rest.

NAME OF PLANTS (G. H. A.).—The leaf sent is that of some Caladinn. (A. Norman).—We believe it to be only a fragment of a Moss, Hypnum proliferum.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 7th.

DATE.	THERMOMETER.						Wind	Rain in inches.	GENERAL REMARKS.
	BAROMETER.		Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 1	29.512	29.405	53	28	50	47	W.	.06	Slight haze, and damp; very fine; slight frost at night.
Mon... 2	29.414	29.398	50	35	49	47	N.	.00	Overcast; cloudy and cold; showery.
Tues... 3	29.622	29.400	50	26	48½	46½	N.	.04	Cloudy; fine throughout; slight frost at night.
Wed... 4	29.675	29.608	54	28	48	46	S.	.10	Fine; overcast; fine; frost at night; rain.
Thurs... 5	29.957	29.787	54	37	48	46	E.	.02	Foggy and drizzly; fine; overcast.
Fri... 6	30.099	29.975	55	38	48	45½	E.	.01	Partially overcast; fine at night.
Sat... 7	29.926	29.865	43	38	48	45½	N.E.	.01	Drizzly; haze, sunless, and cold; overcast at night.
Mean..	29.743	29.634	52.00	32.85	48.50	46.21	..	0.24	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

ROUP IN POULTRY.

We have felt thankful for months that we have had no pest among our poultry; but we cannot help remembering what we suffered years ago, and the recollection of it gives us hope that the sore visitation under which we are now lying, may in like manner either yield to remedies, or disappear before precautions.

When first poultry was imported in quantities from Holland, almost every bird within a week of its arrival sickened with roup of the most virulent kind, and carried it wherever it went. We have a painful recollection of turning down two Polands bought out of a Dutch lot, at a small farm where we had about a hundred good sound fowls. We heard of their being sick in about five days, in a fortnight all in the yard were so. Nearly all died. The place was whitewashed, the house new gravelled; but it was long before we got rid of the infection. Some amateurs will recollect at the first show at the Surrey Zoological Gardens, the rows of empty pens labelled "Removed on account of disease." It was in those days one of the duties of the judges to cause diseased birds to be removed. Those exhibitors who thoroughly understood the question, used to have

their fowls put as far as possible from the Hamburgs and Polands. Roup was considered to be the natural state of both these breeds. The poultry mania, as it was then called, had just sprung into existence in England. It had always existed in Holland, and when the Dutch found there was a ready sale here for anything they could send over in the way of fancy fowls, they loaded every steamer with huge basketsful of them. They were on dack, and in bad weather were closely covered with tarpauling; they had no food during the voyage; many died: the rest were landed reeking with steam, half starved, and then exposed to cold draughts and bitter winds on quays. After fasting many hours they were allowed to eat any quantity of any sort of food, and worse than all, to drink an unlimited quantity of water. Disease always, and death often, followed. So long as the loss was confined to the buyer in this country, no alteration took place; the fowls were still sent as before, but as soon as purchasers became wary, and only those parcels could find a market which were carefully packed and tended during the passage, then an alteration took place, and birds were properly sent over. From this time the disease that had raged fatally, and that had been carried wherever one of the birds went, began to decrease, and now for years past our "pest" has been a thing of the past, unknown to many, and dreaded by none. Among the fifteen hundred or two thousand pens at the Birmingham Show, there is never a thoroughly roupy pen to be seen. This is the result of a little painstaking.

RAILWAY CHARGES FOR POULTRY.

SINCE we published the last list the following subscriptions have been received towards defraying the expenses of presenting a Memorial to the Directors of the railways:—

Mr. J. D. Newsome, 10s. 6d.	Mr. S. Lang, jun., 10s. 6d.
Mr. G. H. Roberts, 10s. 6d.	Mrs. Seamons, 10s. 6d.
Mr. Stevens, £1 1s.	Mr. Pares, 10s. 6d.
Mr. E. E. M. Royd, 10s. 6d.	Miss Milward, 10s. 6d.
Mr. J. K. Robinson, 10s. 6d.	Mr. Stockall, 10s. 6d.
Mr. E. Jones, 10s. 6d.	Hon. Mrs. Arbuthnot, 10s. 6d.
Mr. J. F. Newton, 10s. 6d.	Rev. R. C. Roy, 5s.
Mrs. Welferstan, 10s. 6d.	Mr. Pomfret, 5s. 6d.
Mr. T. S., 10s. 6d.	Mrs. Hurt, 10s. 6d.

PROFITABLE POULTRY.

YOUR readers may like to know the results of a twelvemonth's experience as to the profit of keeping poultry, such as I have found it. I began at the end of March last year (after building a weather-board fowl-house, and bringing together the needful apparatus), with a lot of poultry, mostly barn-door fowls, including, however, three Spanish hens and a cock of the same breed. There have been from eight to twelve hens and two cocks (Spanish) during the year, one of the latter of my own breeding; also, I reared a quantity of Ducks and chickens. The balance sheet is as follows:—

EXPENSES.	£ s. d.	RECEIPTS.	£ s. d.
Fowl-house and apparatus	5 14 0	11 Ducks at 3s. 6d. per pair	0 19 3
Poultry and Ducks	1 18 6	4 chickens at 3s. 6d. "	0 7 0
Food	4 14 7	8 " at 4s. "	0 16 0
		1 cock at 2s. "	0 2 0
Total expenses	12 7 11	Eggs, 727, at 10d. per doz.	2 10 6
Deduct receipts	8 8 11	" 170, at 1s. 3d. "	0 17 6
		" 650, at 1s. "	2 16 8
Balance	3 18 2		8 8 11

If the cost of the fowl-house be not reckoned, neither the actual stock of poultry (two cocks, twelve hens, and three ducks), which we value at £1 14s. (not reckoning them as fancy fowls), and only the actual cost of food be taken into account, there will appear a gain of £3 9s. 10d. on the year.

I should add, that my poultry are not confined. They lay and roost in the fowl-house, where they can be shut up at pleasure, otherwise they have an almost unlimited range of grass land, with various dust and manure heaps to amuse themselves with. They are fed on barley, Indian corn, and barleymeal.—B. & W.

WIGTON POULTRY AND PIGEON EXHIBITION.

IT gives us much pleasure to report that the Show of this year, held on the 5th and 6th inst., far excelled any of those preceding it, the entries proving greatly in excess of the number at former meetings, whilst the perfection of the specimens throughout showed an advance apparent to every one. We fear, however, that the receipts for admission will tell unfavourably when tested by comparison with past years.

It has always been arranged to hold the Wigton Poultry Show at the time of the Wigton Spring Cattle Fair, as at that time the town is unusually full of visitors engaged in business transactions, and they mostly become visitors to the Poultry Show. This year, however, in accordance with the orders of the Privy Council, no cattle could be sent to Wigton; and the paucity of attendance at the Horse Fair, only, at once told how much both the local Railway Company and also the Exhibition Committee would inevitably be sufferers. We are glad to say, however, that, nothing daunted, the Poultry Committee look forward to a more happy state of things, and express themselves "as quite too plucky to think of abandoning their Show through one bad year." No doubt the cattle plague restrictions will tell most unfavourably throughout the whole coming season on those poultry shows in any way connected with agricultural meetings.

But to the Show itself. The large increase of entries this year proved unfavourable to the display of the poultry exhibited, as it necessitated the Pigeons being shown in a private room in connection with the Odd Fellows' Hall; and in the Hall itself this greater number of poultry pens, in a space lighted only from one side, caused the specimens in many portions of the Show to be very obscure. In all such cases it is the prudent course for committees to place the darkest-coloured varieties in the brightest portion of the exhibition, as the lighter-plumaged birds show to less disadvantage so circumstanced than their more sable brethren.

The Game fowls generally were very good; but as the breeding season is now somewhat advanced, the high condition we meet with in winter was very rarely attainable—a feature on which, in all varieties of Game fowls, so much depends. Referring to the awards, it will be seen that many of our best-known breeders competed. The Spanish class was by far the best ever yet seen at Wigton; and the Grey Dorkings shown by Messrs. Rowlandson and Robinson won their

laurels in a very severe competition. In *Cochins* there was only one general class for all colours, the Buffs in both instances proving the winners. The first-prize birds belonging to Mr. Henry Tomlinson, of Birmingham, were a truly magnificent pair, of a decidedly clear bright buff colour, and shown in such perfect condition that the pen proved one of the lions of the Show, and, as being marked at the low price of £10 only, would most probably change hands. Messrs. Bowman & Fearon's second-prize birds were also unusually good. The Golden-spangled Hamburgs were a very excellent class, perhaps one of the best in the whole Show, but unfortunately laboured under the disadvantage of being placed in the darkest pens in the room. Messrs. Beldou, Robinson, Wood, and Henderson were the principal competitors. The Silver-spangled Hamburgs stood next in order in the prize schedule, and, though few in numbers, those shown were of unusual merit; it is only a very rare occurrence, in fact, that such good specimens are shown at even our largest exhibitions.

We regret to record, however, a circumstance that here came to light that deserves animadversion. After the prizes were awarded, but before the admission of the public, it was discovered that the hen in the first-prize pen of Silver-spangled Hamburgs, the property of Mr. A. K. Wood, of Burnside, Kendal, had, by some one or other, been most cruelly tampered with. The extreme point of a common sewing-needle was noticed as slightly protruding near the peak of the comb, so little as to be scarcely discernible except when under pressure, and, after some considerable difficulty, it was finally extracted with pliers by the Judge in the presence of some half dozen or more of the Committee. It had evidently been forced through almost the whole length of the hen's comb, and the portion of the needle called the eye had been broken off abruptly. It is scarcely needful to remark on the evident injustice of such practices, much less to insist on the gross barbarity of thus treating an inoffending bird, for its sufferings must have been scarcely conceivable. The exposure resulted in the Judge at once disqualifying the pen altogether. Messrs. Beldou and Robinson taking the Society's premiums. On looking at the "disqualified" pen a few hours afterwards, the hen's comb slightly drooped over to the side on which the needle had been extracted.

The Golden-pencilled Hamburgs were superior to the Silver-pencilled ones, but it is getting too late in the season for exhibiting adult Pencilled Hamburgs. The Any other variety class of fowls was peculiarly good. The Game Bantams were scarcely equal to the ordinary run, but some excellent Sebrights and Japanese were shown.

In Ducks the extra class was a perfect treat to visitors; Mandarins, Carolina Ducks, Teal, Grey Call, and Wild Ducks being shown in perfection of plumage. This class proved the gayest object of attraction in the Show. The Rouens were without exception all of them faulty, the Ducks having dark slaty bills. In the Aylesburys, also, many of the specimens shown were much spotted with black on the bills—an insuperable objection, and one against which exhibitors cannot too carefully provide.

The Pigeons were a very superior collection, the Blue Owls, the Short-faced Tumblers, Nuns, Turbits, and the whole of the Extra variety class being especially worthy of the closest examination.

It has always been the custom at Wigton to give prizes for dishes of eggs, to be shown in dozens, and a capital entry generally ensues. It would be well, however, for exhibitors to pay some little attention to matching the different lots, so far as they can, for colour and general appearance, as also to avoid sending deformed eggs, however large, as weight is not the only requisite expected. The heaviest hen's eggs (a dozen), weighed 2½ lbs.; the heaviest Ducks' eggs, 2 lbs. 7 ozs.

The weather proved remarkably fine and spring-like, and the visitors appeared much interested in the proceedings. Before the time for holding another meeting comes round, we sincerely hope the drawback we at first alluded to will have ceased to exist, and that the Wigton Show will be again available to as many sight-seers as formerly.

GAME (Black-breasted and other Reds.—First, J. Bell, Wigton. Second, H. Beldou, Goitstock.

GAME (White and Tiles).—First, J. Brough, Carlisle. Second, W. Todd, Waverbridge.

GAME (Duckwing and other Greys, Blacks, and Blues).—First, Messrs. Easton & Mabon, Jedburgh. Second, J. Brough.

GAME PULLETS (Any colour).—First, J. Harris, Wigton. Second, J. H. Wilson, St. Bees. Highly Commended, T. Mandrell, Aikhead; J. Brough.

SPANISH.—First, H. Beldou. Second, J. H. Wilson. Highly Commended, H. Beldou; J. Harrison, Burnside.

DORKING.—First, J. Rowlandson, Hawkhead. Second, J. Robinson, Garstang. Highly Commended, Messrs. Gunson & Jefferson, Whitehaven; J. L. Jackson, East Ewes.

COCHIN-CHINA (Any variety).—First, H. Tomlinson, Birmingham. Second, Messrs. Bowman & Fearon, Whitehaven. Commended, Miss Aglieno, The Hollins; H. Beldou.

HAMBURG (Golden-spangled).—First, H. Beldou. Second, J. Robinson, Highly Commended, A. K. Wood, Burnside, Kendal; W. Henderson, Wigton.

HAMBURG (Silver-spangled).—First, H. Beldou. Second, J. Robinson.

HAMBURG (Gold and Silver-pencilled).—First, R. Burrow, Longtown (Golden-pencilled). Second, J. Robinson (Silver-pencilled). Highly Commended, R. Burrow. Commended, A. K. Wood.

ANY OTHER VARIETY.—First and Second, H. Beldou (Silver-spangled and Golden-spangled Poults). Highly Commended, G. H. Roberts, Preston (Dark Brahma); R. S. Jessop, Hull (Black Polish).

GAME BANTAMS (Black-breasted and other Reds).—First, C. Ashworth, Halifax. Second, I. Moulhouse, Kendal. Highly Commended, H. Beldou; T. Armstrong, Wigton. Commended, T. C. Harrison, Hull; T. Kenyon, Blackburn.

GAME BANTAMS (Any other colour).—First, Miss Aglionby. Second, R. Tato, Leeds. Highly Commended, S. H. Stot, Rochdale.
BANTAMS (Any other variety).—First, R. Burrow (Gold-faced). Second, H. Beldon (Japanese). Highly Commended, J. R. Jessop (Black and White); S. & R. Ashton, Mottram.
Ducks (Aylesbury).—First, M. Birbet, Brown Rigg, Ainstable. Second, T. Paterson, Melrose.
Ducks (Rouen).—First and Second, G. Hetherington, Curthwaite.
Ducks (Any other variety).—First, T. C. Harrison (Mandarins). Second, J. R. Jessop (Caroline). Highly Commended, H. Beldon (Grey Call); T. Dyson, Halifax (Teal). Commended, T. White, Greenwood (Wild Ducks); E. Young, Wigton (Wild Ducks).

PIGEONS.

CARRIERS.—First, H. Yardley, Birmingham. Second, Withheld.
TUMBLERS.—First, H. Yardley. Second, T. Long, Wigton. Highly Commended, H. Beldon; J. Fielding, Rochdale.
POWERS.—First and Second, H. Yardley (White and Red).
FANTAILS.—First and Second, H. Yardley. Commended, J. R. Jessop.
JACOBS.—First, R. Thompson, Moresdale Hall. Second, H. Beldon.
NUNS.—First, T. Paterson, jun., Melrose. Second, H. Yardley.
BARBS.—First, H. Beldon. Second, R. Thompson. Commended, H. Yardley.
TURBITS.—First and Second, H. Yardley. Highly Commended, R. Thompson. Commended, H. Beldon.
OWLS.—First, J. Fielding. Second, W. Towerson, Egremont. Commended, H. Yardley.
TRUMPETERS.—First and Second, I. Monkhouse, Kendal.
ANY OTHER VARIETY.—First, H. Beldon (Red Magpies). Second, W. Towerson (Black Magpies). Highly Commended, H. Yardley (Spots); J. R. Jessop (Blue Swallows). Commended, H. Yardley (Black Magpies and Isabels).

EXTRA PRIZE.—*Game Cock*.—First, W. Stobart, Middleton-one-Row. Second, H. Beldon. Third, J. Fletcher, Stoneclough. Highly Commended, R. Pickering, Carlisle. *Cockerel*.—First, J. Gelder, Kendal. Second, J. Fletcher. Third, T. Mandell, Aikhead. Highly Commended, T. Robinson, Wigton.

COUNTY PRIZE.—*Game Cock*.—First, W. James, Bolton Gate. Second, Withheld. *Cockerel*.—First, T. Mandell. Second, J. M. Armstrong. Highly Commended, T. Robinson; J. Wallas, Highmoor.

HEN EGGS (One Dozen).—First, A. Henderson, West Woodside (Cochin-China). Second, T. L. Jackson, Bust Ewes (Dorking). Third, M. E. Hopkirk, Erowhead (Spanish and Dorking). Highly Commended, Mrs. Bowman, Westfield. Commended, H. Beldon (Spanish); J. H. Wilson, St. Bees (Game and Spanish).

DUCK EGGS (One Dozen).—First, Miss Borthwick, Flimby (Rouen). Second, J. Rooke, Rosley. Highly Commended, J. Ross, Beckfieldian (Rouen). Messrs. Gunson & Jefferson, Whitehaven.

SELLING CLASS.—First, J. H. Roberts, Preston (Dark Brahma). Second, R. Burrow, Longtown (Golden-pencilled). Commended, Messrs. Bowman and Fearon (Black Spanish).

The Judge was Edward Hewitt, Esq., of Sparkbrook, Birmingham.

WHY PREFER WHITE PLUMAGE?

In the Number of March 13th, Mr. Brent says—"I am a great advocate for white plumage, it keep the birds warm in winter, and cool in summer." Is this true? As a winter covering I have no doubt white is best; but as a summer plumage, is not a dark colour better? If not, how is it that so many animals and birds become dark in the summer? The negro can stand a tropical heat where a white man cannot, and I know that white pigs blister in the sun, while dark ones do not.—JOHN WILSON.

[In reply to Mr. John Wilson's note, I beg to say my reason for believing that white plumage is best for resisting the changes of temperature, is because white reflects heat. Thus, if you lay your hand on a white surface on which the sun has been shining, you will find it comparatively cool; if, on the contrary, you were to place your hand on a black body also exposed to the sun, you would feel it very hot. I had two goats, one white and the other black. The white one seemed quite comfortable in the sun, when the black would pant and seem so much distressed by the heat, that I had often to move her into the shade. Drive a black and a white horse together on a hot sunny day; the white will remain tolerably cool, when the black is all in a lather. I think white poultry very pretty, and quite as hardy as coloured. Lastly, white feathers are more valuable for feather beds. These are my reasons for advocating and keeping white poultry.—B. P. BRENT.

P.S.—According to Mr. Darwin's theory it is quite right that birds should be white in winter, and dark in summer, because then they would assimilate to their habitation, and be less easily seen by their enemies.]

THE VARIOUS CARRIER PIGEONS.

In reply to your correspondent, Mr. W. Townshend, I will as shortly as I can explain the differences.

The English Carrier is a large, slender, handsome-made bird, one of high caste or high fancy, and bred to a standard of

properties; long beak, straight head, and a large wattle; colour usually black or dun.

The Horseman is a similar bird, but coarser, less elegant in shape, with a crooked bill, and is generally black or white.

The Dragon is smaller, shorter, and has less wattle, being crossed with the Tumbler, and it was much used for homing before the introduction of the Antwerp.

The Antwerp was a variety of flying Pigeon formerly imported from Antwerp, and is probably a cross between Tumblers and the Dove-house or Roeks.

These have been superseded by the Belgian Carriers, which are now considered the very best of homing birds. The Belgians train them to come home from a distance of 500 or 600 miles. They are supposed to have originated in crosses between the Owl Pigeon, the Volant, and Le Pigeon Camus; the Volant being the same as the old Antwerp, and the Camus very much like a Barb.

Any one of the above being of a blue colour, would of necessity be a "Blue Carrier."—B. P. BRENT.

BEEES IN THE HOLY LAND.

I AM desirous of correcting the mistaken impression respecting the Ligurian species of honey bee being indigenous in the Holy Land which is conveyed by the extract from "Tristram's Journal of Travels in Palestine," which appeared in page 266. The fact is, that the native bee of Syria is an entirely different species from that of Italy, being identical, or nearly so, with the Egyptian bee, *Apis fasciata* of Latrille. This species (like *Apis ligustica*), has bright yellow bands on the abdomen, but is of smaller size, and makes smaller cells than either *A. mellifica* or *A. ligustica*, being, moreover, distinguishable from the latter by the colour of its pubescence, which is silvery white instead of yellow. Its habits and natural history are correctly described in the extract referred to as being very similar to those of the common honey bee, but it has no yellow bands on the thorax, nor are its antennæ of remarkable length.—A DEVONSHIRE BEE-KEEPER.

A "HUNGER SWARM."

You know the proverb about "a swarm of bees in May." What do you say to a swarm of bees in March? A neighbour of mine had a swarm to-day (March 29th), about half-past one o'clock. It flew to my apiary, and simultaneously commenced entering four or five hives out of the twelve that it contains. Noticing a larger number of bees at one hive than at any of the others, I went up to it, and on the stand I saw and caught the queen in my hand. I was showing her to my gardener, when on opening my hand too far she took wing and flew away. Some fighting took place, and while I stood watching them, I saw several bees dead or dying on the ground. Some few were literally pinned together by their stings, and in the expiring effort to disengage themselves, drew their intestines out with the sting.

Do you apprehend any mischief resulting to my hives from this unexpected and unseasonable addition to them? I hope they are sufficiently well provisioned to support the surplus population thus forced upon them. The hive from which the swarm issued is about 30 or 40 yards from my apiary.

I shall be glad to hear from you or from any of your correspondents, whether it is on record that a swarm of bees has ever taken place in England on the 29th of March; or whether any has issued earlier than this. An answer in "our Journal" will much oblige.—T. R. DRAKE, *Fittleworth Vicarage, Petworth.*

[This was not what is properly called a swarm, but was, doubtless, a complete exodus of the whole of the inhabitants of the hive. Many similar instances are on record, and they are generally attributed to the approach of famine at a time when the bees are unable to find sufficient food to maintain themselves. For this reason they are called by the Germans "hunger swarms."]

BEE DYSENTERY.

As so much was said in your columns a short time since upon dysentery, and so many were inquiring for a remedy, I fear from the silence which has prevailed of late upon the subject that those whose bees were suffering from the malady have

given up in despair, thinking there is no remedy. I am, however, confident that the disease may be cured, unless indeed the bees are so far prostrated as to be unable to take the food given them; and if any practical bee-master, whose bees may be afflicted with it, will send to the under-mentioned address I will forward him the remedy gratis.—G. Thualow, *Buckland, Dover.*

FEEDING AND SHIFTING BEES.

The following is a description of the mode in which I feed my bees. It is, in my opinion, the best plan I have ever heard of, but whether it is new or old I cannot say. I make my floorboard 1½ inch thick, and then cut out a piece 3 inches wide from the back to the centre. A sheet of tin is tacked under the opening for the drawer to slide on; the drawer is made of deal to fit the vacant space cut in the floorboard, but must not fit too tightly, as the syrup makes it swell. The drawer is of the same thickness as the floorboard, with three grooves cut in it 1 inch deep and half an inch wide, the partitions between the grooves serving for the bees to stand on whilst taking their food. The way in which I move my bees a short distance, say 15 or 20 yards, is by shifting stand and all I or 2 yards each day until I bring them to the place where I want them.—A BEES BEE-KEEPER.

[We prefer feeding bees at the top of the hive.]

COMPARATIVE LONGEVITY OF THE LIGURIAN AND BLACK BEE.

A NOTE of my experience as to the comparative longevity of Ligurian and black bees may not be without interest at this time. In May, last year, I made several artificial swarms, being desirous of increasing the Ligurian strength of my apiary. This I accomplished by two or three modes, all being equally successful and substantially the same in principle. One of these artificial swarms was formed by transposing an empty Woodbury hive, containing three frames of Ligurian comb and brood, with a strong stock of black bees. Of course I expected the bees would raise from the brood a queen, which would be a hybrid or, possibly, pure, as I have one stock formed thus which has produced a perfectly pure queen. On examining the box a short time afterwards I found that the old black queen had escaped into or had joined the new swarm, but it was not convenient for me to do anything more with it, so it stood as it was. The Ligurian brood hatched from the frames duly made its appearance, and some of these bees have continued until the present time. Many of them were visible during the mild weather in January, but they now seem to have reached the limit of their existence, as only a few stragglers, very feeble and attenuated by age, remain. This would give an average age of about eight months, which is double the age that I have ever seen black bees attain by a similar test, which I have frequently had occasion to witness.

I am glad to say that the year opens very favourably, in an apian sense, with me. Last season I managed, from four stocks—one pure Ligurian, one hybrid, one black stock, and one black stock too weak to aid operations in any way, to obtain in all four absolutely pure Ligurian, six hybrid of various degrees, and four black stocks. Of these, one hybrid perished from a casualty last week, another I have given to a friend, and the rest remain healthy and strong, and hard at work, whenever weather permits. I have no doubt that I might have considerably increased the Ligurian element last season, but various circumstances prevented my being able to devote so much time to them as I could have wished. I hope this year to have twelve pure Ligurian hives in my apiary, and then I shall rest contented.

I first saw pollen-gathering in the second week of January this year. The cold weather of course suspended it, but it is now (March 23rd) general on fine days. On February 18th, I noticed several chrysalides or pupæ turned out of two hives, evidencing that breeding had commenced in them at an abnormally early period.—G. F. B., *Spalding.*

OUR LETTER BOX.

SILVER-GREY DORRINGS (*Kate*).—A cock with the feathers you enclosed cannot be a Silver-Grey Dorking.

CHICKENS DYING (*Notice*).—We should attribute much of your want of success in rearing to the use of Indian meal. It is cloying and fattening, but deficient in the necessary properties for making bone and muscle. We think it very bad chicken food. Your mode of feeding is very bad; the chickens get their mouths full of your paste and cannot get rid of it. Then they try to pick up sand or grit as a digester, and that sticks, and makes the hard substance in the beak. Take away the food. Let them be fed often with chopped eggs, bread and milk, oatmeal slaked with milk, scraps of fat chopped fine, and a little bread and ale, some pieces of potato for a change; but it is bad food. If the hen is in a confined room or house move her out, but keep her under the coop. Recollect, chickens want to be fed very often, and to pick up morsels at a time, and it is well for them to have to seek them. It is against nature for them to take a mouthful, and if the food is sticky they cannot get rid of it. For this reason the hen must also be dry-fed. Your paste has been the cause of all your failures. Even the meal you mix should be dry enough to break and scatter when it is thrown down. If you will adopt this plan you will save your chickens; but you must free their mouths from all the stuff that has stuck to them.

YOLKLESS EGGS (*C. B.*).—It is no more than a derangement of the laying organs, and will not continue. A dose of castor oil will often cure it. If the bees are debarr'd from green food cut them some large sods of growing grass, at the present time of year a most valuable poultry food and medicine.

FACE OF SPANISH COCK (*Stourbridge*).—Spanish cocks are oftentimes inconvenienced by the excessive development of their beauties, as in this instance; but although the eye may be invisible, it is seldom entirely closed. There is only one way of keeping the eyes unclosed, which is by strapping back the overlapping lids with narrow strips of some adhesive plaster. We have had many years' experience of Spanish, and have never found this operation necessary.

SHELL-LESS EGGS (*X. Y. Z.*).—Discontinue feeding on flesh; you will never have really healthy fowls while you feed on meat. Instead of chalk throw down some bricklayer's rubbish. Give them, if they are in confinement, some growing grass cut in heavy sods with plenty of fresh earth to them. Eating the eggs is far more serious than laying soft ones. Put some hard composition eggs in their nest. The soft eggs and the desire to eat them would imply temporary want of health and derangement of secretions; but as the eggs are shell-less, and as the first desire to eat them is undoubtedly from a desire to obtain that which will make shell, we cannot help thinking that they do not possess material for forming it. Road grit or scrapings are excellent for poultry-houses and runs.

CALL DUCKS WITH ROUEN DUCKS (*H. A. F.*).—We think, except in extraordinary cases, Call Ducks and Rouens may be kept in the same yard without fear of intermixture. They cannot be kept with Wild Ducks or any of the smaller breeds.

TURKEYS (*A. B.*).—The Norfolk and the Cambridge are the best breeds for the table. Eggs are constantly advertised in our columns.

GAME COCK WITH BLINDED EYE (*F. W. J.*).—The accidental loss of an eye, for instance, if it has been cut out fighting, is not a disqualification, not even a disadvantage; but a sightless eye is a disqualification. We mean an eye presenting its full volume, but dull and grey-coloured.

CREOLE AND CUCKOO FOWLS (*J. R.*).—It is easy to buy Cuckoo fowls; but we do not know where there are any Cuckoo Creoles.

VARIOUS (*A Beginner*).—For Brahma Pootras you must write to some one who advertises them in our columns, stating what is your object. Feeding in troughs or not is merely a matter of opinion. We always use troughs, as being less liable to waste. We have no objection to giving rain water to fowls if it is quite sweet and fresh. If taken from a water cask it seldom is sweet, and if not sweet it is objectionable.

IMPROVED FRAME HIVES.—"SIBERT-IN-THE-WOLD" writes to correct an error in the punctuation of the last paragraph in page 255, which should read as follows:—"The size of my boxes is also different from any other that I know of, being always of the same depth—viz., 10 inches, but, of course, varying in width, as constructed to contain from four to ten frames; as the locality in which I reside is by no means favourable for bee-keeping (the wolds of east Kent being about the same in character as the wolds in other parts of the kingdom—viz., high, windy, and open), my boxes are usually made with eight frames."

TROUT (*L. J. B.*).—As your stream flows freely there is no fear that the trout will not be supplied with food. They feed on flies, gnats, grubs, small water molluscs, and these are supplied abundantly naturally. If you place any dead animal body in the water, it will attract insects, and, the gentles bred in it would not be neglected by the fish.

QUERY (*W. W. Burton-on-Trent*).—You had better write to the secretary of the club.

ZINC IN A CHURN (*G. B.*).—If kept perfectly bright inside no injury would arise; but if it became oxidised (which in the angles of a barrel churn it would), the acid of the cream would dissolve some, forming a lactate of zinc, the medical properties of which we do not know. There is no material for a churn so eligible as wood.

TITMICE (*A Subscriber*).—You must either shoot these bee-vampires or trap them. A common steel trap of the size used for catching mice, and baited with a bit of suet, will entrap them. There is another trap made by beading a hazel rod, a loop of string, and a peg baited at one end with suet, which also secures them. It can scarcely be made intelligible without a drawing, but most boys know how to construct it.

POULTRY MARKET.—APRIL 9.

We shall have little change to note for the next few weeks. Prices will probably remain good, with little variation, until the advancing season increases the supply of poultry.

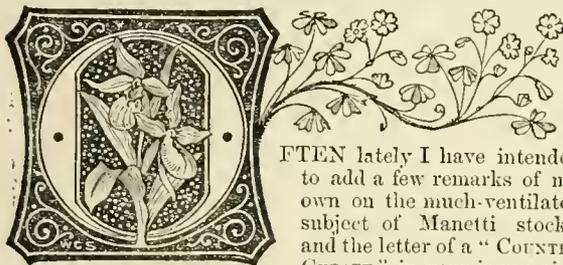
	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls	3	6	4	0	Guinea Fowls	2	6	3	0
Smaller do.	3	0	6	0	Partridges	6	0	0	0
Chickens	2	6	3	0	Hares	0	0	0	0
Geese	0	0	0	0	Rabbits	1	4	1	5
Goslings	6	6	7	6	Wild do.	0	8	0	9
Ducklings	3	6	4	0	Pigeons	0	8	0	9

WEEKLY CALENDAR.

Day of Month		Day of Week		APRIL 17—23, 1866.			Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.		
				Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
17	TU	Camellias.		57.6	35.9	46.8	14	2	af 5	57	af 6	35	6	58	9	2	0	27	107
18	W	Cinerarias.		58.6	35.6	47.1	15	0	5	59	6	23	7	5	11	3	0	41	108
19	TH	Cyclamens.		58.6	34.8	46.7	8	58	4	0	7	18	8	morn.		4	0	54	109
20	F	Chorozema Henchmanni.		60.2	34.7	47.4	14	56	4	2	7	18	9	4	0	5	1	7	110
21	S	Sun's declination 11° 53' N.		59.0	37.2	48.1	14	54	4	4	7	23	10	52	0	7	1	20	111
22	SUN	3RD SUNDAY AFTER EASTER.		58.6	37.3	47.9	20	52	4	5	7	31	11	32	1	7	1	32	112
23	M	Chorozema macrophyllum.		58.6	36.7	47.7	20	50	4	7	7	after.		5	2	8	1	44	113

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 57.3°; and its night temperature 36.0°. The greatest heat was 77°, on the 19th, 1854; and the lowest cold 22°, on the 17th, 1847. The greatest fall of rain was 0.52 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

MANETTI STOCKS FOR ROSES.



FTEEN lately I have intended to add a few remarks of my own on the much-ventilated subject of Manetti stocks, and the letter of a "COUNTRY CURATE" in your impression

of the 3rd inst. has induced me to send you the following, though I am afraid, as so much has been said by such able rosarians as Mr. Kent, Mr. Radclyffe, and others, I shall not be able to add much that is new.

First, I will begin by replying to "COUNTRY CURATE'S" question as to the form of Rose-growing best suited to his soil. I apprehend that his soil may be said to be a tenacious loam with a good deal of humus in it, and very likely, from its retaining the moisture a good deal in winter (as appears to be the case from the manner in which many of his Manetti cuttings perish), there will be a considerable amount of humic and geic acid in the soil. The nature of the subsoil, also, leads me to suppose that there is in the gravel a considerable quantity of iron, which is very injurious to the roots of all fruit trees, and of Roses also. Manetti stocks being more fibrous-rooted, and less inclined to produce tap roots than the Briar, their roots will not be so liable to penetrate into the subsoil as those of the Dog Rose. The length of shoot that "COUNTRY CURATE'S" Roses have made in one year from the bud, would lead me to think that the best form in which he could grow Roses on the Manetti stock would be as dwarf pillar Roses, encouraging a strong, or two or three strong, shoots from the bottom of the plant each year, and cutting away all old wood when it was more than two years old. He will not obtain so great a head or, perhaps, so many blooms in this way, but he will have the satisfaction of finding his blooms far finer than if he encouraged the plants to make bushy heads, and also that the strength of the shoots from the ground will each year materially increase. I have found, too, by experience, that the young vigorous shoots, when well ripened, are far more hardy than the old wood. I have suffered severely this year from a frost on the 1st of March; all my Roses up to that time had been growing, many of the young shoots expanding leaves. On the evening of the 28th of February a sleety rain was followed by 2 or 3 inches of snow, and in the middle of the night a severe frost came on, the thermometer, 4 feet from the ground, falling 12° between eleven o'clock at night and seven the next morning, when it stood at 15° Fahrenheit. This was a most severe ordeal for the Roses. Coming after such a warm winter, the consequence was every young shoot that had pushed was cut back, and in many instances the old wood has suffered too, but hardly any of the younger and more vigorous shoots. Another advantage of continually cutting away old wood and inducing shoots from

the base is, that the growth is so much stronger, that it is thick enough to supply a sufficiency of sap to obtain more perfect show Roses on one stem than by any other means, and it does not require the same tying up and support as weaker shoots do. I always allow the shoots to grow in the autumn as long as they choose, having had some Général Jacqueminot on four-year-old plants with from 10 to 11½ feet shoots from the base in one autumn; these I shorten and tie up before winter, but I do not finish final pruning till March or the beginning of April, according to season. Of course if quantity and not quality of bloom is the object desired, then more of the old stems must be kept in, and the plant trained in bush or pyramidal fashion.

Now a few words as to the propagation of Manetti. One of the chief points is to choose the right sort of wood for cuttings; for this purpose it is better to devote a spare corner to some old plants, which may be allowed to grow unrestricted to furnish strong shoots. The longer, straighter, and cleaner the shoots for cuttings the better. Cut them into lengths of from 9 inches to a foot; pick out all the bottom eyes, and cut the shoot square across at a joint. Plant them about 4 or 5 inches deep, and earth them up in rows, like Potatoes, to within 2 or 3 inches from the top. The cuttings are best put in from the second week in August to the last week in September, and should be watered for the first three or four weeks if the weather is very dry. The cuttings may be transplanted in the following autumn, and planted in the same way in rows about 3 feet apart and 1 foot from plant to plant; but some of the most forward of the cuttings will be fit for budding on the next spring where they were struck. I need hardly add that the best way of budding is to insert the bud in the stem which formed the cutting, by levelling down the ridge. I do not agree with "COUNTRY CURATE" in ever thinking it a good plan to earth up the plants again after they are budded; it is better to put a little clean straw on each side of the rows to protect them in the winter, mulching the ground with manure between. If "COUNTRY CURATE" wishes to have the buds push, so as to make plants to transplant the same autumn, he may do so by budding in July as soon as he can obtain good buds. As the part of the Manetti on which the bud is inserted is always covered with soil till the time of budding, the stem is kept moist, and is not hardened by the sun, so that the bark will almost always separate easily for the insertion of the bud. I have known stocks bud very well in the first week in July.

Next, with respect to planting Roses on the Manetti stock. Many persons used to fail by not burying the bud, but now it is universally allowed that the collar of the Rose should be covered with soil, and many persons err in the opposite extreme, and plant the union of the scion and stock from 6 to 8 inches below the surface of the ground. I have now grown Roses on the Manetti stock for twelve or thirteen years, and my rule has always been to plant about 2 inches below the surface; by this means I have never been troubled with Manetti suckers, or rather shoots; for the Manetti stock, in spite of what

the late lamented Mr. Donald Beaton used to say, never makes root suckers, and the roots of the Manetti are not buried too deeply so as to be away from the influence of the sun and air. Two inches also are quite deep enough to induce the Rose to push out roots of its own.

I cannot agree with Mr. Robson, that if the Manetti stock is merely a medium to obtain Roses on their own roots, the sooner it is done away with the better, because by budding on a Manetti and then planting, we obtain a fine bed of Roses two or three years sooner than by plants from cuttings. Moreover, in the case of a new or a rare Rose, we obtain ten plants on the Manetti to one by cuttings; the stock also imparts a vigour to weaker sorts which they would never have on their own roots. In short, I think that one of the greatest advantages of the Manetti stock is that it supplies strength to the Rose, so as to enable it to make a perfect plant on its own roots, and thereby to give it a permanency, in which the old Dog Rose signally failed. I do not mean to say that there may not be many very fine old trees found on the Dog Rose, but there are two drawbacks to it—one is that in its wild state the Dog Rose is constantly renewing itself by root suckers; every year the suckers that are sent up are stronger and stronger, and the old wood dies back. Any person may see this for himself, if he will examine an old hedge where the Dog Rose has been allowed to run wild, without being cut for many years. He will find it full of dead and dying old wood, while the tree is spreading itself with suckers. Now, by budding Roses as standards on the Dog Rose we are budding on a stem which would naturally die in thirteen or fourteen years, and is constantly seeking to renew its life by pushing out suckers, which are the constant plague of all rosarians who adhere to the old-fashioned standards. We are, consequently, fighting against Nature, and only keep up the life of the stem of the standard by cutting off the root suckers, and encouraging the growth of the head. The second drawback to the old Dog Rose is that all the head of the Rose budded on it is above ground, and is, therefore, subject to frosts. In the winter of 1860 I lost every standard that I had but two, and not a single plant on the Manetti stock. This was the case all over the north of England. Mr. May, of Bedale, did not, I believe, save one standard in every thousand out of an extensive stock of Roses.

One word about soils. The best soil for Roses on the Manetti stock is a good, rich, garden loam, not too sandy or too yellow; it is not suitable for a clay soil unless the beds are specially prepared with plenty of leaf soil and manure, and well manured both winter and summer with short manure or cocoa-nut refuse. Wherever, then, the soil is a tenacious clay it is better to adhere to the Dog Rose; and after all there is no soil that gives so much colour to Roses as marly clay. Where do we see finer colour than in the Roses shown by the Rev. S. R. Hole? Manetti will also do in light and sandy soils, where the Dog Rose entirely fails; but in these soils it is better to plant deeper, and to encourage the growth of roots from the Rose itself.

In concluding these remarks, I digress to "P.'s" letter, and agree with him, that the blooms of King's Acre, shown by Mr. Cranston at the Crystal Palace, were certainly not up to the mark; but we must remember they were cut in exceedingly hot, dry weather, and had travelled all the way from Herefordshire.—C. P. CLEAVER.

THE MANGOSTEEN.

HAVING noticed in your last Number a letter from Mr. Smith, ex-cursor at Kew, touching the mode of propagating the Mangosteen, allow me to say a few words in reply. In the first place, then, I think I ought to be a fair judge of what is and what is not the true Mangosteen, having received many trees myself from Karang and Singapore, which were selected with the greatest care by an experienced person there. A friend, too, in India, who is a first-rate botanist, has frequently sent me seeds of many varieties of Mangosteen and Platonia.

In the second place, while quite agreeing with Mr. Smith that raising the Mangosteen from seed is by far the preferable way, I feel certain that any variety may, with care, be raised from cuttings, and that the cuttings will strike in from six to eight months. Several of our largest nurserymen have, and are now, raising them in this manner. Paxton, too, in his "Magazine of Botany," speaks of Mangosteen cuttings rooting in sand under a hand-glass, and I have reason to know that he successfully raised plants in that way himself. True plants of

this fruit are not quite so rare, either, as Mr. Smith supposes, and I could name many places where the true Mangosteen tree may be seen growing.

Mr. Smith's suggestions about the carriage of the fruit and seed are most valuable, and will doubtless be acted upon by many persons, myself among the number. It is so infinitely superior a way of obtaining them to the modes now in general use, such as packing in soil, coating with wax, collodion, &c., that he deserves the thanks of every tropical plant grower.—J. H.

THE COILING OF VINES IN POTS.

I THINK I remember telling your readers that I should this season try the effect of coiling some Vines in pots. I therefore early in January last operated upon a dozen Vines, by coiling the lower part of each rod, just within the rim of the pot, so that each coil was covered from 1 to 2 inches in depth. The pots were then placed on a hot-water pipe in their usual place in my Orange-house. They seemed at first not to break so quickly as usual, but they are now growing very vigorously and showing very fine bunches.

A few days ago I was induced to examine the coils to see if they were rooting as freely as my old friend predicted they would. I found roots protruding from every portion of the coils, but more profusely from those nearest to the surface. They, in fact, have put forth more roots from these parts barely covered—i. e., covered with a quarter of an inch of earth, than from those covered 2 inches in depth. I observed, also, that the portion of coil very near the surface put forth roots earlier by a fortnight than that more deeply covered. I have thus advanced a step, and if I am spared I shall in future cover the coil with only half an inch of compost. The young fresh roots spreading themselves over the surface look so plump and healthy, with their delicate pink and white tints, that I cannot help looking at them with interest, and I cannot but think that they must give much additional vigour to the Vines. To help on this I shall very shortly give them some fresh surface food with my usual surface-dressing compost—malt dust and horse-droppings saturated with liquid manure.

Allow me to correct myself. On reading to-day (April 6th), my article which you inserted at page 237, I find that I have made an incorrect assertion, which I should have corrected if I had seen a proof. At the foot of the seventh paragraph the sentence should read, "Many of the two thousand pyramids on the Quince," instead of "The two thousand." The truth is, the plantation was commenced upwards of twenty years ago, and took some years to complete. I am this season adding to it six hundred trees, 3 feet apart. Last year I did the same, so that the aggregate will be much above two thousand trees growing in ground less than one acre in extent.—T. R.

WATER, AND THE CONSEQUENCES OF ITS IMPURITIES.

I wish some chemist would study the subject of water as it affects the plants to which it is applied in an artificial manner; for I am confident that it has more influence on their well-being than the character of the soil in which they are planted. In affirming this much, I mean the assertion to apply to that class of plants kept in pots, and of which the existence is maintained from day to day by what may be termed regular meals of water; and as the number of such is very great, it may be inferred that the class of food most relished by them is not always that which is given to them: hence disease is the consequence, or, if the evil do not advance thus far, lack of vigour or health.

Plants are created to live in fixed stations, and at such stations they are furnished with all the requirements necessary for their well-doing. The chalky hills are clothed with Yews, Junipers, and Box, and amongst the herbage we find Wild Thyme and numerous British Orchises, while such water as is to be obtained there is much impregnated with the calcareous constituents of the substratum. On the other hand, soils of a peaty character have the Scotch Fir and Birch, with an undergrowth of Heath and Whortleberry, with Ferns in greater or less variety, and the water obtained from them is widely different from that found in the other locality. It contains iron and vegetable extract. Such water is just the kind that is wanted to secure the well-being of the plants there, and they thrive with it, and the harmony which Nature presents us

with in all her works is here as well as in the former case fully borne out.

The above cases represent what water is after having been in contact with the various substances that constitute the surface, or, it may be, the substratum. The one is impregnated with substances hostile to the plants growing in the other soil. Taking the practical view of the subject, it is only necessary to step into the first garden of note where there may happen to be as many as one hundred different kinds of plants in pots, and on inquiry most likely we shall find that these plants are from districts differing widely from each other in their geological formation. The sandy plain, limestone ridge, the morass charged with ferruginous matter, and the lofty peaks of granite, have all been explored to find these plants, and, until lately, instructors in the art of plant-growing contented themselves with merely describing the soil they were to be planted in, not giving the subject of water the least attention, or rather not saying a word about the quality of that water, beyond pointing out how much water such a plant ought to have, and making similar remarks. This advice, no doubt, is good enough, when pure rain water can be had, but water is so very seldom found in that condition, that evils must arise to some of the plants to which it is applied; and, no doubt, one of the causes of particular classes of plants not doing well at certain places, is the water with which they are fed not suiting them. Taking, for instance, the case of a potted plant which receives water almost every day, it need not be surprising that where such water is of an exactly contrary kind to the soil which the plant delights in, such a mixture cannot be otherwise than injurious.

Let us take, for instance, a very common case, and one that may often be met with. A collection of Cape Heaths is formed by some skilful and attentive cultivator at a place where we may say that chalk or lime forms the substratum, and, consequently, is a component of the soil of the district. Peat, however, of excellent quality is imported from a distance, and for a time things go on well. Rain water is collected and supplied to the plants; but dry weather sets in, and the rain-water butts fail, and recourse must be had to the well at a time when the plants require more water, and all classes of plants are perforce supplied with spring water. The effects of this are not apparent at first, but a continuance tells, and some of the more delicate of the Heaths show unmistakable signs of declining health, if not absolute disease, when, perhaps, their downward career is arrested by a copious rain refilling the water-butts, and the plants are again put on more befitting food. Another dry period may, however, succeed, and the conclusion may be arrived at, that as the Heaths do not seem to thrive, there must be something wrong.

Such cases are numerous, and call for some mode of removing from water those substances which it has acquired in its contact with the earth, and restoring it to the condition in which it fell from the clouds, and that is unquestionably the best possible form in which it can be supplied to plants.

Can our chemical friends effect this by any simple, cheap, and efficacious means? Assuredly something can be done, and it is well worth the consideration of that class of experimentalists whose aim is to improve the many necessaries of the public, and this is one not merely beneficial to the vegetable world, but to animal life also.

Water cannot even remain long in contact with the vessels or substances contrived to hold it without imbibing some foreign matter from such receptacles. The difficulty of preserving rain water pure and fresh for a lengthened period is greater than may be expected. Tanks sunk under the surface are often used; but if the ground be porous, such tanks have to be lined with something that will render them water-tight. Lead is thought too expensive in many cases, and accordingly cement is used, and Portland cement, which has the reputation of being the best, certainly imparts an extreme hardness to the water at first, rendering it worse than even ordinary well water. This tendency to cause hardness goes off by degrees; but it is often years before it entirely disappears. Water from tanks having such an effect, I need hardly say, is very hurtful to plants, and it should, therefore, if possible, be avoided. Remedies of the ordinary practical sort have not yet become sufficiently known or brought into use. Some years ago it was said that a charcoal fire made in the tank before it was used would counteract the tendency to produce hardness; but practice soon discovered that such a mode was destructive to the tank, and it has only been partially adopted. With time and patience a tank will become seasoned; but three or four years are often required to do so, and this cannot always be allowed.

Much more might be added on this head, but enough has been said to prove the importance of the question; and as the surface of the earth on an average receives in the eastern parts of the kingdom about 24 inches of water in the form of rain every year, it is not too much to say that the quantity given by hand to plants in pots amounts to at least ten times that quantity, and must, as it assuredly does, convey to the plant much of its daily food. It is not assuming too much to say that far better results would follow if such food were of the same kind as supplied by Nature.—J. ROBSON.

SOWING AND AFTER-MANAGEMENT

OF PELARGONIUMS, VERBENAS, AND OTHER CHOICE SEEDS

(Continued from page 85.)

THE VERBENA.—It is often difficult to induce the seeds of the Verbena to vegetate; great caution is, therefore, necessary in keeping the soil as nearly of an equable temperature as possible after the seeds have been sown. Care must also be taken to keep the soil in the same state of moisture till after the seedlings appear above the surface, when they should be immediately pricked out into small pots or pans. If either of the above conditions be allowed to vary, the vegetation of the seeds may be prolonged to an indefinite period, and then it often happens that the seedsman falls into disrepute, although the fault is not in the seeds but in the management of them after they have been sown. Sometimes under favourable conditions Verbena seed will vegetate in five or seven weeks, and I have known it remain in the soil for more than two years before it germinated. Some of my very best flowers have been obtained from seed that has remained dormant in the soil for upwards of two years. This fact should teach us the necessity of exercising our patience when we have sown a pan of choice seeds, and, if the seedlings do not appear at the proper time, not to throw the contents of the pan to the rubbish-heap.

If the seedlings do not appear in seven or fifteen weeks, my plan is to carefully turn out the soil in which the seeds have been sown, have some fresh pans crocked, and then place the soil in these, mixing with it a little fresh soil, and finishing off with half an inch of fresh soil on the surface. I then water the pans through a fine rose, and place them again in a similar temperature to that in which they previously were. I have often found Verbena seeds vegetate very freely after having been thus treated. If, notwithstanding, I do not obtain the number of plants which I consider I ought from the quantity of seed sown, and if the seed is particularly choice, I give it a third chance. I first select a corner that is not likely to be wanted for fifteen or eighteen months. Here an old box is placed on a very gentle hotbed, some good soil is spread over the bed, the contents of the pans are turned out and levelled all over the surface, and an inch or two of good soil having been placed on the top, a good watering is given. I have often on looking over the box on the fifth or sixth day afterwards, noticed lots of the little lance-shaped leaves appearing above the soil, then with a small saucer or a leaf in one hand and a piece of wood, in shape something like a table-knife, in the other, I quickly remove them, but in doing this the piece of wood must be pushed down below the root of the plant, which should then be lifted gradually up so that it may be loosened from the soil without breaking it, for if this is not done very carefully it will be sure to snap off midway between the root and leaf. When this happens in most cases all the skill that can be brought to bear will prove of no avail; but if the plants, however small they may be, are taken up without injury to their roots, they will grow if proper care be taken in pricking them into fresh pots, or pans, of good soil and in attending to them afterwards.

I prefer pricking-out the plants round the side of the pot, and as close to it as possible. They should also be pricked into the fresh soil to just the same depth as they were at before taking them out of the seed-pau or box. If they are placed in a temperature of 75°, they will soon grow very freely, and as soon as they have made three or four pairs of leaves, they should be again pricked out into boxes, or potted singly into large 60 or 48-sized pots.

As soon as the plants have become partly established in the pots or boxes, if the seed is from very choice varieties, I take off the top of each plant and strike it. This will be very soon in flower, and the parent plant in the meantime will become stocky. By the time the latter is ready for planting out the cutting will have flowered, proving whether it is worth while to

grow on the parent plant or not. In any case, whether the top be struck or not, it should be pinched out at the time stated, in order to cause the plant to furnish itself nicely at the base. If this precaution is not taken there is some difficulty in judging of the habit of the plant the first season.

In planting the seedlings out choose a nice open piece of ground, and plant them in rows about 3 feet apart, and at 2 feet apart in the rows. As soon as the plants have taken hold of the soil all the points should be again pinched out; this will increase the number of shoots more than tenfold, and about the second week in July the plants will produce a magnificent display of bloom. When the cutting is taken off a label should be put to each plant and cutting so that no mistake may take place, and if the colours are noted down as the flowers are produced, the plants may be so placed that when in bloom their colours may harmonise in the beds, and prove more effective than would otherwise be the case; or if the seedlings are planted out on a border indiscriminately, nothing produces a more pleasing effect to the eye than the varied colours of several hundreds of seedling Verbenas in mass.

I find old seed always vegetates quicker than new; for this reason I always keep a year's seed in hand. If the seed is sown in pans or pots these should be prepared as recommended for Pelargoniums. The same sort of soil will suit the Verbena and Pelargonium, but the seed of the Verbena must be sown quite 2 inches deep.

The plants must be well watered after they are planted out. If there is a slug or a snail anywhere it is sure to find out a seedling Verbena, and the only sure way to get rid of these troublesome marauders, is to catch and kill them. The best time to do this is about 11 p.m. I then generally find them very busy enjoying their supper at my expense; and although they are not very pleasant to handle, I find the only way you can be sure of destroying them is to pick them up and drop them into a vessel containing a little hot water or lime.

I hope to produce some varieties this season that will please even "D." of Deal, who has given us his ideas on the merits and demerits of the best Verbenas sent out up to the present time. "D., Deal," is quite right in stating that of the new varieties sent out every year many do not come up to the required standard, either for bedding-purposes or for pot-culture; but he is not right in stating Purple King to be the best bedding Verbena out. Many of the varieties sent out by Messrs. E. G. Henderson during the last five or six years are equal to Purple King in point of habit and profusion of bloom. The reason mere of the Verbenas sent out do not possess the desirable habit of Purple King is, that the latter is the most shy of all Verbenas in producing seed. Last summer, however, its character was very much altered, and we may hope to see another year varieties of other colours with the habit of Purple King.—J. WILLS.

(To be continued.)

PRIZES FOR ALLOTMENT GARDENING.

I INTEND offering at the next exhibition of our local floral and horticultural society prizes for the best and second best cultivated allotment gardens, but being doubtful what the points of excellence should be, I venture to ask you for advice.

I propose that the gardens shall contain an area of not less than 200 and not more than 400 yards; that they shall have belonged to the exhibitors for at least six months previous to the show, and have been cultivated by the owners themselves, or, at all events, without paid labour.

Flowers and vegetables, of course, must be grown, and the smaller fruits also; but in this cold climate (close to the sea, on the north-east coast), other fruits, except probably Apples and Pears, are out of the question. Order and neatness must form essential points of excellence.

Will you give me your advice as to the conditions I should make?—S. I. R.

[We think the terms you propose for prizes for gardens are very good. In awarding prizes for such gardens good culture should form the first feature, bulk of cropping from the land a second feature, and neatness and good keeping the third feature. It will tend to give more satisfaction to all concerned if the number of kinds of vegetables for competition be stated—say twelve varieties; and the kinds of fruit should also be specified, or there will be heartburnings. As the result of some experience, if we gave prizes for the best cultivated and the neatest-kept allotments, we should have them judged on general prin-

ciples, independently of varieties of vegetables and fruits; but even then the satisfaction would not be so general as would follow the giving prizes for the best collection—say ten or twelve kinds of vegetables, best of fruit—say six kinds, and best of flowers. It should always be kept in mind in judging cottagers' productions that bulk of good eatable matter should be a primary consideration. A Cauliflower for a gentleman's table will be most esteemed when small and compact; for a cottager it will be best if firmish and close, though as large as a little parsnip.]

VISITS TO GARDENS PUBLIC AND PRIVATE.

PRESTON HALL, AYLESFORD, NEAR MAIDSTONE.

THE SEAT OF EDWARD L. BETTS, ESQ.

THERE does not seem much advantage to be gained by visiting a garden in the month of April, in the midst of a downpour of rain such as even in this "pluvius" season one has seldom seen equalled; and probably the vision of a respectable and more than middle-aged parson trudging through it, with umbrella overhead, and dodging in and out of houses, and peering into this or that frame and pit, was more suggestive of mental hallucination than of anything else. A long-made and often-deferred promise, however, induced me to make the attempt; and business having brought me to Maidstone, which is only a few minutes by rail from Aylesford, I made the attempt, and did it; but I thought as my little daughter and I trudged up to the Hall, Well, I dare say we shall be taken for some respectable kind of tramps, who chose such a day because they thought no one would be hard-hearted enough to refuse them. I need not say how we were looked at—we certainly were not turned away. Of this, however, I am certain, that if a garden at such a time is worth looking at, if all is in order, and neatness prevail, then you may be quite sure that things are done well, and that if you can drop in at a more convenient season you will infallibly find much that is worth noting; and such was the case here. Mr. Bradley is evidently up to the mark, and all I saw showed that he understood what was wanted, and had it done. He knew exactly what his employers wanted, and set himself to meet their wishes; and this is what I conceive is a gardener's work—not to have whims and crotchets of his own, but to study his employers, and, if they choose even to have whims and crotchets, to humour them.

Preston Hall was the seat of the old Kentish family of Milner, and came into possession of Mr. Betts upwards of twenty years ago. The present mansion is entirely new, and is a very handsome edifice, built of the finest Kentish rag, and in the palatial or Italian style. Its rooms are beautifully proportioned, and all that wealth and taste can supply are to be found in the reception-rooms, which contain, *par excellence*, some *chefs d'oeuvre* of our first modern artists. In the dining-room, a handsome oak room beautifully carved, are some marvellously fine paintings; on panels on either side is the second scene from "As You Like It" by Maclise, full of his marvellous drawing, and with less of his defects than in any of his works. The contrast between the brawny Charles, the wrestler, and the stern and supple Orlando is admirable; while Rosalind suggests the idea that he could not fail to win when her smiles favoured him. An exquisite Clarkson Stansfield, representing the port of La Rochelle, "fair city of the waters," hangs next to it—a masterpiece indeed; while on the other panel is a beautiful Cope, representing the patient Griselda claimed as the Prince's bride. On the other side of the room is a fine landscape by Creswick, "Clearing up after a Shower," which many will recollect in the Academy, the figures by Bottomley; and on the other side of the fireplace is a wonderful sketch by Maclise. The space was not filled up; and so one day, with a piece of charcoal and a bit of chalk out of the billiard-room, he drew a masterly group, which Mr. Betts with rare good taste has allowed to remain, and has had it glazed over; but perhaps the gem of the room, though hung too high up, is the magnificent painting of Sir Edwin Landseer, familiar to many from the engraving, of "The Hills above Braemar;" a magnificent stag, with some hinds, and the highland hare, displaying all the artist's masterly handling. Here are also fine portraits of Mr. and Mrs. Betts, Sir Morton Peto (Mrs. Betts's brother), and Mr. Betts's father. But here am I writing about paintings instead of gardens. Let my excuse be, that it was raining so tremendously that we were fain to keep under shelter for a while; and so my little gossip is pardonable, I hope.

Opening from the dining-room there is a very handsome conservatory surmounted by a dome, which at the time of my visit was filled with fine specimens of Azaleas in full bloom; while in the passage up to it were arranged flowering plants, Hyacinths, Lachenalias, Tulips, &c., in pots. Nothing can be more satisfactory than a conservatory like this, affording as it does a treat at all times to the lover of floral beauty—in weather when, perhaps, a person would be very unwilling to trudge down to the garden. The house is situated on a terrace, and in front is a well-arranged geometric garden, which, doubtless, further on in the season will be resplendent in those varied hues of the rainbow which the modern system is so well calculated to supply. The walk from the mansion to the garden is lined on each side with some fine pillar Roses, backed with specimens of various conifers, among which were two of the best feathered Aracarias that I have seen.

The range of hothouses and greenhouses, frames and pits, is very extensive, and they were all well at work. In the Muscat-house were some very promising bunches of the Muscat of Alexandria, looking as if they would sustain the fame that Preston Hall has acquired for its Grapes. At the other extremity of the range was another house, the Vines in which had suffered from the extreme heat of the autumn of last year. They had been pruned back in August in order to get an early start for this season; but the hot September had started many of the eyes, and hence the crop was irregular. Peaches and Nectarines were forward, as large as hens' eggs, and the trees evidently in healthy condition. In the plant-houses there was an excellent assortment of plants with fine foliage, &c., suitable for the decoration of the conservatory, &c.; while in the pits were appliances for forcing flowers of all kinds, and Camellias and Azaleas, which had already yielded their sweets, were being started into fresh growth for another season. Strawberries also were bloomed in these pits, and then brought into the houses to be placed on shelves to be fruited, Mr. Bradley preferring this plan. The Cucumber-pits were filled with an excellent crop of Lord Kenyon's Favourite, this, I believe, being generally considered the best kind for winter purposes. The fruit is not long, has no spines, but is straight and well-formed. Personally I do not think it in flavour or crispness equal to some others, although it is used here all through the year. All Mr. Bradley's plants are grown from seed, not cuttings, so that each process seems to answer when properly managed.

Leaving this portion of the garden you pass down a long shrubbery, in the centre of which is a handsome aviary, to the kitchen garden, where there is a long range of glazed walls, which, however, I find are not much in favour here; and after all, if you want to obtain flavour, richness, and size, there is, despite all that has been said to the contrary, nothing like the regular Peach and Nectarine house; and to my mind one good fruit is worth half a dozen of inferior merit. Everything in this garden seemed to be in admirable order, and I only regretted that weather and season were so against my seeing it. However, I promised Mr. Bradley I would pay him a visit again at a more propitious season; and I have no doubt that if any of the readers of "our Journal" (for we had a little chat about it, too), are in that neighbourhood, they would be cordially received. I believe that the house may also be seen on the presentation of a visiting card; and if the visitor has even a *souçon* of a taste for art, I warrant that he will not consider the time thrown away.—D., Deal.

VINES FRUITED IN ALTERNATE YEARS.

I HAVE grown Grapes in a late vinery for many years on the plan suggested by your "CONSTANT READER," page 255—viz., the Vines are planted 2 feet apart, and fruited alternate years. The Vines which bore fruit last autumn were cut down to the ground about Christmas, and are now making new rods for fruiting in 1867.

The plan answers well. I had upwards of five hundred bunches last year, many large, out of a house 30 feet long by 12 feet wide. These rods of last year's growth are now showing two and three bunches of fruit from each eye. The sorts are Black Hamburgh and Muscadine, or Sweetwater.—ROBERT WARNER, Broomfield.

SIZE OF PEACHES.—In your Number of the 3rd inst. I see Mr. Snow, of Saltram Gardens, speaks of having seen Peaches that were grown in an orchard-house measuring 9½ inches

round. It may be interesting to know that I had some fruit on trees in my orchard-houses last season that measured 11½ inches in circumference.—RICHARD SMITH, Nurseryman, Worcester.

TOBACCO CULTURE IN ENGLAND.

UNDER the title "Growing Tobacco," page 263, in answer to a correspondent, "J. H. M. R.," there appears the following reply—"It is not illegal to grow Tobacco for your own use." Now, it seems to me that this statement is too broad and ought to be qualified, and my reason for saying so will appear more plainly if the Acts which prohibit the planting, setting, or sowing of Tobacco in England, Scotland, or Ireland are referred to. 1 & 2 William IV. c. 13 (1831), seems to be the last Act on the subject, and at the end of section 1 of that Act the following passage occurs:—"And that it shall not be lawful to plant, set, improve to grow, or cure either in seed, plant, or otherwise, any Tobacco in any part of the United Kingdom, save and except in the places and in the quantities and for the purposes in the said Acts mentioned and allowed."

The first Act, referred to in the Act of 1831, is 12 Charles II. c. 34 (1660), which was passed for prohibiting the planting, setting, or sowing of Tobacco in England or Ireland. Section 4 of that Act contains a saving clause—"Provided always, and it is hereby enacted, that this Act nor any thing therein contained shall extend to the hindering of the planting of Tobacco in any physick garden of either University, or in any other private garden for physick or chirurgery only, so as the quantities so planted exceed not one-half of a pole in any one place or garden." This Act, therefore, last quoted confines the growth of Tobacco to certain limits, to certain places, and for certain purposes in England or Ireland.

The same saving clause occurs in 15 Charles II. c. 7 (1663), also referred to in the Act of 1831. So much, however, of the two Acts of 12 & 15 Charles II., which prohibited the planting of Tobacco in Ireland, was repealed by 19 George III. c. 35 (1779).

The Act of 1831 was passed to repeal the Act of 1779, and contains in section 1 the following passage:—"And whereas it is expedient to repeal the said recited Act of the nineteenth year of the reign of his said Majesty King George the Third, and to revive in and extend to Ireland the said recited Act of the twelfth year of King Charles the Second, and of any other Acts since passed for prohibiting the growth and culture of Tobacco, be it enacted," &c.; and at the end of the section appears the passage above quoted, ending with "mentioned and allowed."

Another Act, containing in the 13th section the same saving clause, was passed in 1670 (22 & 23 Charles II. c. 26), to continue in force for nine years. This Act was continued by 5 George I. c. 11, sec. 19, so long as 12 Charles II. c. 4 (1660), should continue; and by 22 George III. c. 73 (1782), the Acts prohibiting the culture of Tobacco in England were extended to Scotland.

Now, there is no doubt in my mind but that the question of "J. H. M. R.," was suggested when reading the article on "The Growth and Manufacture of Tobacco for Fumigating-purposes," which appeared in your Journal (page 137). On seeing that paper I myself was surprised that no mention was made as to the quantity allowed by English law to be grown on English soil or elsewhere, and my curiosity was aroused into a search for the "Tobacco Acts," when the reply appeared to "J. H. M. R.'s" question at page 263. In Tobacco culture it is best to be careful; for section 4 of the Act of 1831 provided (subject to the above-mentioned saving clauses), "That if any Tobacco the growth of any part of the United Kingdom, manufactured or unmanufactured, or mixed with any Tobacco of foreign growth, shall be delivered to, received by, or found in the possession of any manufacturer, dealer in, or retailer of tobacco or snuff in any quantity whatsoever, or if any such tobacco shall be delivered to, or received by, or be found in the possession of any other person or persons whatsoever in any quantity exceeding 1 lb. in weight, . . . the person offending in any of the cases shall forfeit the sum of £100." Is there not then some limit to the growth of Tobacco for private use? Can any of your readers throw any light upon the subject?—X., Surrey.

[You are quite correct in observing that our answer was too broad. We intended to reply that any one might grow a few plants of Tobacco for his own use for gardening purposes. Even this may not be strictly legal, but would not be visited

by any penalty. It is quite certain that no one must grow Tobacco in England either for smoking, or to sell for any purpose.—Eos.]

ROYAL HORTICULTURAL SOCIETY.

SECOND SPRING SHOW—APRIL 12TH.

On this occasion there was a brilliant and effective display in the conservatory archedes, the principal feature being gorgeous masses of Azaleas from Mr. Turner and Messrs. Lane. Those from the former, especially, were perfection as regards blooming, and the pyramidal training, it may be remarked, was not so close and stiff as in past years. Messrs. Lane's specimens, though not so large as Mr. Turner's, were also wonderfully fine, notwithstanding the comparatively small pots in which they were grown.

In the class for nine Mr. Turner was first with Louise Van Baden, Queen Victoria, Belle Gantoise, Perryana, Union, being Etoile de Gand and Variegata superba on the same plant, Roi Leopold, Duc de Nassau, Magnificans, and Enlaid Van Geert. Messrs. Lane were second with Hofordi, Souvenir du Prince Albert, Rosa alba, Advance, Souvenir de l'Exposition, President, Secretaire Claus, a beautiful variety, Perryana, and Enlaid Van Geert. Most of the above had already appeared at the Regent's Park on the previous Saturday, and were noticed in the report of that Show. For six Mr. Turner was again first with Flower of the Day, white, flaked with red; Prince Jerome, Brilliant, Magnifica flore pleno, rosy purple, and Magnet, with large rose-coloured flowers. Messrs. Lane were second with Cheloni, Violaena superba, a very showy rosy purple; Magnificent, Peltoniellora, Conspecta purpurea, and Enlaid Van Geert. For a single specimen Mr. Turner was first with Criterion, a handsome pyramidal plant, about 5 feet high, and densely covered with bloom; Messrs. Lane second with Reine des Blanches, a fine large-flowered white variety; and Mr. Young, gardener to R. Barclay, Esq., Highgate, third with a large plant of Indica alba, but not sufficiently in bloom. In the Amateurs' Classes some plants in good bloom were shown by Mr. Todman, gardener to R. Hindson, Esq., Clapham, and Mr. Young, the former receiving first prizes for six and three plants, and the latter a second prize for three. Among the best were Roi Leopold, Concinna, purplish, with lilac crimson spots; Semi-duplex maculata; The Bride, white; and Coronata. Messrs. Lane likewise exhibited a collection of twenty-eight plants, which were very even in size, and in excellent bloom. Madame Ambroise Verschaffelt, Reine des Blanches, and several others of the varieties were noticed last week. Two new varieties, called George Eyles and Fire King, were exhibited by Mr. Turner. The blooms were about 3½ inches in diameter, orange scarlet, in the latter conspicuously spotted with dark crimson in the upper petals, in the former more lightly spotted.

Cinerarias, it must be confessed, did not constitute an effective portion of the display, although several of the plants were in good bloom. They came from Mr. Fairhair, gardener to the Duke of Northumberland, Sion; Mr. Clarke, Whittin; Mr. James, gardener to W. F. Watson, Esq., Isleworth; and Mrs. Hoole, Fulham, to each of whom prizes were awarded. Among the varieties exhibited were Captain Schreier, blue; Bob, Lord Elgin, Favourite, and Aimée, shades of rosy purple; Charles Dickens, Annie, Bertie, and Densa, broadly edged with the same colour, the last of compact growth, with the flowers close above the foliage. Of Calceolarias, half a dozen plants in good bloom were shown by Mr. James, and a like number of Amarillids by Mr. Young, who also contributed a tray of Camellia blooms. Cyclamens in charming bloom came from Messrs. E. G. Henderson, Mr. Wiggins, Mr. Fairhair, and Mrs. Hoole; and fine pots of Lily of the Valley from Mr. William Paul.

Leaving the Roses, which alone constituted a beautiful display, and the Auriculas, and their kindred flower the Polyanthus, in the able hands of "D., Deal," we now come to the miscellaneous subjects.

Among these was a collection of Rhododendrons from Messrs. Lane, ranging from 18 inches to 2 feet in height, and in profuse bloom. From Mr. Fairhair, Sion, came an excellent collection of flowering and fine-foliated plants, consisting of Camellias and Eriostemon nerifolium in excellent bloom; Phajus Wallichii, Foxbrush Acrides, Phalenopsis grandiflora, two fine plants of Lataina borbonica, Pothos acutis, with shining green leaves from 18 inches to 3 feet long, and 9 or 10 inches broad; narrow-leaved Croton, Caladiums, Asplenium bulbiferum, and half a dozen pots of the pretty Selaginella apoda. Messrs. Lee likewise contributed a very effective group, comprising six standard Azaleas, several fine Camellias, standard Fuchsias, Hedera fuchsoides, Heaths, Tremandra cricifolia hirsuta, a pretty, compact, lilac-flowered plant; Cyrtocidium maculatum with five good spikes of bloom, Dendrobiums and other Orchids, and fruiting Acaucas. Mr. Bartlett, Hammersmith, contributed four groups, one of which consisted of Roses, Cinerarias, Polyanthus, &c.; another of Dielytra spectabilis, Tulips, and Hyacinths; a third of Hyacinths; and a fourth of Narcissus surrounded with a row of Hyacinths. These groups were very tastefully arranged on four tables in the front of one of the archedes, and edged with Isoplepis gracilis. An effective group was likewise furnished by Messrs. F. & A. Smith, of Dulwich, and consisted of several Acaucas in excellent bloom, Eriostemons, Azaleas, Heaths, Apelexis, Cinerarias, Dracenas in bloom, and a few Orchids. Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, and Mr.

Young also exhibited mixed groups, comprising Pelargoniums, Rhododendrons, Azaleas, Epacris, Cytisus, Dracenas, Tulips, &c. Mr. Reeve, Ladbrooke Nursery, Notting Hill, whose admirably bloomed specimens of Deutzia gracilis have been noticed in previous reports, again produced plants of a similar character; Messrs. Paul & Son again exhibited cut Roses, and Messrs. F. & A. Smith new Zonale Geraniums and Cinerarias, including Perfection, described last week. From T. Lascombe, Esq., Combe Royal, Kingsbridge, came blooms of Rhododendron arboreum and of Sikkim species and hybrids; also of Camellias, all of which had been grown in the open air in the mild climate of that part of Devonshire; likewise a basket of Oranges, Limes, Lemons, and Citrons, and fruit of other members of the Citron tribe, produced there without the aid of glass or artificial heat, and with only the protection of reed frames. Several of the fruit were very fine.

Of new and rare plants, Mr. Bull again brought forward a numerous collection, comprising Arucearia Rulei, Maranta splendida, with beautifully marked dark-green foliage; Psychotria macrocephala, with fine heads of white flowers; Aspidistra Sieboldii, Imantophyllum miniatum, of which Mr. Bull possesses an excellent variety; the beautiful Sonerila margaritacea, Bignonia argyrea violescens, Dracena Cooperi, Cyrtopodium villosum, Trichopilia suavis, &c. Messrs. E. G. Henderson sent Gemista prostrata, a plant of pendulous habit with showy bright yellow flowers; a promising variety of Ceanothus Dampieri, in which the standard is scarlet, but the heel whitish, tipped with scarlet; and Hedera japonica argentea, a small-leaved Ivy, distinctly variegated with white. From Mr. Turner came a variety of the well-known Kerria japonica, or Corchorus, with single flowers and the leaves variegated with white, and which, if equally ornamental when in an older state, will be a useful addition to hardy variegated plants. Kæmperia ovalifolia, a plant which, though not new, is rarely seen, was exhibited by Mr. J. Murdell, gardener to J. C. Pickersgill, Esq., Coudson, Surrey. Its white and purplish lilac flowers are produced before the foliage, and though only enduring for a day or two, are thrown up in succession from the Caladium-like roots for a period of about five weeks.

As on the last Show, Mrs. Mitchell, Angelsea Terrace, Battersea, exhibited various flowers modelled in wax, as Lilliums, Magnolias, Roses, Pelargoniums, and Mignouette. Though not forming a part of the Exhibition, we may add that one of Beard's patent glass houses, a span-roof, upwards of 30 feet in length, has just been put up, so that those who may be desirous of seeing this new system of construction, will have an opportunity of judging for themselves. The house, although not yet stocked with plants—in fact, barely completed, has a light and elegant appearance.

A list of the awards will be found in our advertising columns.

The display of Roses in pots was exceedingly good, and much interest was attached especially to the class of new Roses in pots, inasmuch as it was distinctly stated for those of 1865 and 1866. At the same time it must be borne in mind that in this state we do not see them always in their true character. There were, for example, two plants of John Keynes: in one collection it was rough, ragged, and unpleasant-looking; in the other it was a beautifully shaped flower. Again: Roses which are somewhat difficult to open do not display their beauties so well in this method and time of showing. Souvenir de la Malmaison, for example, was by no means what it would be some time later; and often in colour we should fail to recognise many of our older friends at this time of the year. I now give the Roses as they struck me, and must again premise that I only speak of them as they were there, not as to their general merits, except where so distinctly stated.

Mr. Wm. Paul took the first place with a very beautiful collection, comprising Général d'Hautoult; Jean Rosenkrantz; Joséphine Beauharnais, like Louise Peyronny; *Gloire of Waltham, a large fine-coloured flower—"d'un grand effet," as our neighbours say; *Mademoiselle Marguerite Dombain, exhibiting a difficulty of opening, it appeared to me; Madame A. Verschaffelt; *Dr. Lindley, fine; Madame Moreau, excellent; Achille Goud, coarse; Charles Margottin, showy crimson; Prince Eugène Beauharnais; John Keynes, rough; Triomphe des Français, well-shaped, rose; Marcelle Niel, fine; Mademoiselle Amélie Hulphen, fine and full; Marella, light pink; and Souvenir de Bernardin St. Pierre. Messrs. Paul & Son were second, and exhibited Xavier Olibo, fine rich crimson, good petal and shape; *Pluie, promising flower; Général d'Hautoult; Madame Moreau; Dr. Andry, fine crimson; Duchesse de Caylus, fine; Duchesse de Medina Celi, poor; Elizabeth Vigneron, rough; Duke of Wellington, splendid rich colour, fine flower; Madame Roussel, bright lively pink; Souvenir de Wm. Wood, very dark; Marguerite de St. Arnaud, rough; Rushton Radclyffe, full; Belle Rose, rough; and Souvenir de Bernardin St. Pierre. Mr. Charles Turner, of Slough, had John Keynes, very beautiful; Madame Hermann Stenger, rough; Madame Moreau, fine; Madame Fillon, rough; Madame Eugène Appert; *Mademoiselle Marguerite Dombain, very full, like her mamma La Reine, and having, I fear, her defect; President Mas; Abraham Lincoln; Madame de Pontbriand, not open; King's Acre, inclining to be coarse; Dr. Andry, very brilliant; Joséphine Beauharnais. I have marked with an asterisk the very new ones.

In the class of nine Roses in pots, Mr. Charles Turner was first with some beautiful plants of Madame William, Jules Margottin, Souvenir de la Malmaison (not quite open, and rough), Souvenir d'un

Ami, Gloire de Dijon, Général Jacqueminot, Victor Verdier, Le Rhone, Alba rosea (very beautiful). Messrs. Paul & Son were second with good plants, also, of Mademoiselle Julie Daran, John Hopper, Souvenir d'nn Ami, Madame Damaizin, Anna Alexieff, Lord Raglan, Charles Lawson, Virginal, Madame Villermoz. Mr. William Paul had some large plants of Madame Clemence Joigneaux, Madame Alfred Rougement, Jean Goujon, Beauty of Waltham, Souvenir d'nn Ami, John Hopper, and Le Rhone, and also a fine single plant of President. Finally, Messrs. Paul & Son had some boxes of cut blooms, very beautiful, comprising most of the old favourites—Pierre Notting, Charles Lawson, Semateur Vaise, Gloire de Dijon, Maréchal Vaillant, Anna de Diesbach, Charles Margettin, Charles Lefebvre, Madame Charles Crapelet, Lord Clyde (very good), Marechal Niel, Duchesse de Medina Cœli (very fine), David Pradel, Virginal, Gloire de Dijon, Louis XV., Eugène Desgaches, Madame Charles Weed, Maurice Bernardin.

Notwithstanding the mild winter, there is evidence on all sides that we are having a late spring; and hence Auriculas, which will not submit to forcing by any means, were shown in limited numbers, there being but one competitor in each class. Mr. C. Turner had, as usual, excellent plants. In his twelve were Lightbody's Fair Mail, Maclean's Unique, Lightbody's Admiral of the Blue, Taylor's Glory, Page's Champion, Traill's Florence, blue self; Traill's General Niell, somewhat foxey in colour; Gaines' Lady Richardson, paste a little too thin; Lightbody's Countess of Dunmore; and Read's Miss Giddings, rough. Mr. James had Conqueror of Europe, Smith's Mrs. Smith, Smith's Ann Smith, Oliver's Lovely Anne, Lizzie Stuart (like Lovely Anne), Taylor's Glory, Warris's Union, Sims's Eliza. Of Alpines the display was equally small. Mr. Turner had Brilliant, Emperor, Star, Attraction, Ilector, and Cuspiscula, all seedlings except the last. Mr. James had Beauty, Leigh Wilson, Brilliant, Lilac, and Novelty.

Polyanthes were also exhibited, but not named.

Pansies were also exhibited by Mr. James, and comprised Black Douglas, Mrs. H. Hooper, Rev. H. Dombain, Father Gavazzi, Seedling (poor), Mrs. White, Perfection, Ladyburn Beauty, Alexander Tait, Beautiful Star, Mr. J. Ramsay, Czar, David Inglie. They were not very fine, and out of twenty-four blooms there were sixteen dark selfs, most of them very much alike.

Roses formed one of the chief features of the Exhibition, and attracted a large number of admirers as usual. It gave one a taste of coming pleasures, and showed, too, what I suppose pleases all of us—that one's judgment as to the roses of past seasons was not very far out—as well as could be gathered from flowers grown under glass. We shall see more of them as the season advances, and then be better able to "make our book."—D., *Deal*.

WEEKLY SHOW, April 14.—There is a more than usually extensive exhibition this day, which was attributable to the presence of Mr. William Paul's beautiful pot Roses and Mr. Turner's magnificent Azaleas, which had been let from the spring meeting of Thursday. The classes for which prizes were offered were—First, for eighteen bulbs in flower, the first prize being taken by Messrs. Cutbush & Son, and the second by Mr. Bartlett, while an extra second was awarded to Mr. Young. Second, for miscellaneous plants in flower, Messrs. Cutbush received the first prize, and Mr. Young an extra first. An extra first was also awarded to Mr. William Paul for his collection of Roses in pots, which were still in fine condition. There were also collections of miscellaneous plants exhibited by Messrs. J. & C. Lee, of Hammer-smith, which received an extra first, and by Mrs. Hoeke, of Fulham, and Mr. Bartlett.

At the usual fortnightly meeting to be held this day, we are informed that *Dendrobium MacCarthus* will probably be exhibited. This beautiful species is found pendent from the trunks of large trees in the forests of Ceylon, where it is known to the natives by the name of "Wis-sak-mal," the signification of which is Rainy-month Flower, or May Flower. A plate and description of it were given in "*Curtis's Botanical Magazine*" in 1855.

AMARANTHUS TRICOLOR.

In reply to a query put by one of your correspondents (page 257), I beg to say that in 1863 the gardener of Count Borromeo, of the Isola Madre, Lago Maggiore, gave me some seeds of the *Amaranthus tricolor*, which, sown in pans and placed at first in moderate heat, made strong plants about a foot in height, and remarkably effective from their brilliant foliage. Last summer the heat and want of rain caused the plants to lose their colour more quickly; but with shade and water they may be kept bright late into the autumn.—W. C. W., *Saltford*.

THE HORTICULTURAL DINNER proposed to take place during the week of the International Horticultural Exhibition continues to progress favourably, and the following names have

been added to the General Committee—viz., Dr. Masters; Messrs. Bull, Barnes, Barr, Fleming, McKenzie, T. Osborn, Standish, and Turner. At a meeting held on the 9th inst. it was resolved to secure St. Martin's Hall for the dinner.

ENTOMOLOGICAL SOCIETY'S MEETING.

THE March Meeting of this Society (in the absence of the President), was presided over by W. W. Saunders, Esq., F.R.S., one of the Vice-Presidents. Amongst the books presented to the library since the last meeting, was a valuable memoir on the Neuropterous insects of Spain, by M. Pictet, jun.

A very remarkable and extensive collection of Beetles, Butterflies, and Moths, was exhibited by Mr. Stevens, collected at Hakodadi, in Japan, a great number of which could scarcely be distinguished from the common English species, the whole having a very European character, there being but a very few exceptional species of the Indian type. Amongst the Beetles there were only representatives of two genera not European.

Mr. Tegetmeier also exhibited a collection of Lepidoptera, from Nagasaki, in Japan, but this series was composed of larger-sized species, much more oriental in their character than the former.

Mr. S. Stone sent for exhibition some nests built by workers of *Vespa sylvestris*, after the original nest, with the queen, had been removed. These nests were very bungling and irregular in their form, showing that the workers needed the superintending attention of the queen, or master builder. A curious fact had been observed by Mr. S. Stone in connection with these nests—namely, that the cells contained eggs. Mr. Tegetmeier stated that the same fact had been also well ascertained to be the case occasionally with the workers of the hive Bee, but the eggs were laid irregularly, several in a single cell, and they always produced male insects. The physiological cause of this strange fact, as also of the power of the queen Bee to deposit male or female (*i. e.*, workers), eggs at will, was explained by Professor Westwood.

Mr. McLachlan exhibited a twig of Mulberry collected at Sanger, in India, by Captain Alexander, on which were arranged, in three rows, about sixty eggs of a species of *Ascalaphus* (a genus allied to the Ant Lion), from which some of the young larvæ had been hatched. Geoffrey had stated that a female of this genus had deposited several large eggs, but he had not obtained the young from them. The preparatory states of the genus had, however, been more recently published by the late Rev. L. Goulding, and by M. Brauer.

Mr. Pickard Cambridge, exhibited an extensive collection of insects of all orders formed by himself in Syria, Palestine, the Styrian Alps, &c., and which were intended for publication in the work undertaken by Mr. Tristram, on the Fauna and Flora of Palestine, as part of the great work projected by the Palestine Exploration Society.

A valuable Memoir, by Mr. Edward Saunders, was read, containing the description of a considerable number of new species of Buprestidæ, collected by the late M. Monhot, in Siam.

A note from Mr. Groser was read, confirming, on the authority of Rev. Leonard Jenyns, Mr. Doubleday's statement as to the noise made by the Death Watch. A conversation took place relative to the insects found in amber, copal, &c., founded upon Dr. Welwitsch's recent communication to the Linnean Society.

TEMPERATURE-RECORDING APPARATUS.

(Continued from page 244.)

I HAVE a few more remarks to make on the above-mentioned apparatus which more particularly concern those who, possessing a maximum thermometer, find that the mercury does not always divide uniformly at the obstruction *o* (see page 243), but separates sometimes above, sometimes a little below, the compressed portion of the tube. Should any person possess such an instrument, and be unwilling to have it altered so as to cause the mercury to divide with accuracy at a given point, which alteration can be very easily effected, I will show him how he can learn with certainty the maximum temperature between any given times, though he himself be absent. Instead of arranging the thermometer in a vertical position, as shown in *fig. 1*, page 243, the instrument must be suspended exactly as it would be placed by an observer should he wish to know the maximum temperature—*i. e.*, in a horizontal position. When the alarum weight descends the mercury runs down to the end of the tube (see *fig. 2*), and thus the greatest temperature of the greenhouse between the time of setting the alarum and the descent of the weight, say midnight, is learnt in the morning. The temperature-recording apparatus would also, I believe, be of some service to those who wish to keep a register of maximum heat, or of temperature at any fixed time, but who are, perhaps, unable to be present at the usual time for observation.—X., *Surrey*.

PLEROMA ELEGANS CULTURE.

The fine, purple-tinged, yet intensely blue flowers of this plant render it interesting and valuable, as it furnishes flowers of a colour much wanted in greenhouse plants. It is not exactly a greenhouse plant, nor will it thrive in a stove, but requires a warm greenhouse. In a cool greenhouse it acquires a starved, brown, sickly aspect, and in the stove it grows too straggling, and being kept continually in a state of growth the wood does not ripen sufficiently for blooming well. The flowers are produced on the wood of the previous year, and to have that well ripened is the greatest point of all; for unless the previous year's growths are well ripened the flowers at their points will be few.

It is propagated by cuttings, and early in April is a good time to put them in. Side shoots are the best; they should be 3 inches in length, brown and firm at the base, and the points green, or in the condition of the wood when about three-parts ripe. They are to be cut transversely below the lowest pair of leaves, which, as well as the next pair, should be removed. The cutting pot having been half filled with crocks, and a little moss placed over these, the remaining space should be filled up with sandy peat, with a layer of silver sand at the top. Insert the cuttings round the sides of the cutting pot, and place it inside one of larger size, keeping the rims of both level, and filling up the interval between the two with crocks to within an inch of the top, and then to the level of the rims with silver sand. Give a gentle watering, and place the cuttings in a bottom heat of 75°, covering with a bell-glass when the leaves become dry. Shade from bright sun and that only; tilt the bell-glass a little on one side, or, better still, take it off at night, replacing it in the morning. Avoid the necessity of watering the cuttings by keeping the atmosphere moist, but the sand must be kept just moist. Continue this treatment until the cuttings are struck, then gradually expose them to light and air.

The cuttings having been struck pot them off singly in small pots, draining well, and using a compost of turfy sandy peat three parts, turfy light loam one part, and one part of silver sand. After potting they should be kept close, and shaded for a few days until established, giving a gentle bedewing of water morning and evening, but avoiding watering as much as possible. When established remove them to a cold pit, giving the plants a position near the glass, and where they can have abundance of air. They should be housed in good time, and have a light and airy situation in a house having a temperature of 45°, and not exceeding 50° from fire heat. In April they should have a shift into pots 4½ inches in diameter, and now, unless very carefully watered, they will not take to the new soil kindly; a gentle syringing will be better on sunny afternoons than too much water at the root. Unless the plant grow up without showing side shoots it should not be stopped; but if it grow up with a single stem take out the point of the shoots a fortnight after potting. This will induce side shoots, and unless feathered at the bottom it is best to throw the plant away. The side shoots, if inclined to grow erect, should be tied down, and when the leader has broken choose the most likely shoot for a new leader, and let it make six joints, then take out its point. The strong side shoots are to be stopped at the third joint, and so on repeatedly until August, when stopping is to be discontinued, the plant exposed to more air, and less water given at the root. This treatment will assist the ripening of the wood; for, though the plant is not expected to bloom the following year, it will winter better, be more healthy, and shoot more strongly and regularly, than one kept too warm and moist, and allowed to become large and straggling before being stopped.

The plants will by the following April be stiff and bushy, such as can be had from a nurseryman in 4½ or 6-inch pots, at a much less cost than any gardener can propagate them. The plant should be potted early in April from a 4½-inch pot into one 8 inches in diameter. This is certainly a large shift, but we must bear in mind that our plants are young and strong, and that they are impatient of either small or large shifts. It is well to give a good shift and nurse the plant afterwards, for if small shifts are given it follows that the plant must be nursed for a time after every shift, no matter how small. Drain the pot to one-fourth its depth, and on the crocks place from one-half to three-quarters of an inch of pieces of charcoal about the size of a pea, and on this again a very thin layer of moss. The pot, bear in mind, must be clean inside as well as outside, and not hardburnt. The soil to be used may consist of three parts sandy heath mould, one part yellow loam from rotted

curves a year old, and one part of pounded charcoal not larger than a pea, with the dust sifted out, and silver sand in equal quantities. The peat and loam should be broken tolerably fine, but not sifted, and the whole should be well mixed. Before turning the plant out see that the soil is thoroughly moist, but not newly watered or very wet; turn out the plant, pick away the crocks, and loosen the sides of the ball a little in order that the fibres may the more readily lay hold of the fresh soil. Pot with the compost neither wet nor dry, keep the neck of the plant slightly elevated in the centre of the pot, and press the soil pretty firmly around the ball. After potting give a gentle watering, and until the roots are working freely in the new soil afford slight shade from bright sun, and sprinkle the plants overhead two or three times a-day in place of frequent waterings at the root. Just keep the soil moist and no more until the roots are working freely in the fresh soil. The temperature now should range from 50° to 55° at night, and if there is a late Peach-house no better place could be found, for, from the air circulating constantly and the moisture kept up by syringing or otherwise, it will cause the plants to grow freely and strongly.

When the plants begin to grow freely stop the strong shoots to three joints, but let those which are weak remain untouched. Commence training the plant at once by tying or pegging-down the shoots, so as to have it well furnished quite down to the rim of the pot. The stopping is to be continued up to August, for the plant is not intended to bloom in the following year. We will, therefore, if the roots have reached the outside of the pot, shift the plant into a 12-inch pot by the middle of June, proceeding as before, with this difference, that it is to be placed in a cold pit and kept rather close, shaded, and frequently syringed overhead until the roots are working in the new soil, when more air should be admitted, continuing syringing overhead on the evenings of hot days up to the end of August. By this time the plant will have made short little shoots from the last stopping; to harden them more air should be given, and the supply of water diminished, but never so much as to affect the foliage. Water, whilst the growth is forming, will require to be plentifully given. The plant should be housed by the middle of September.

If two plants or sets of plants can be grown, they may be treated differently. One plant or set of plants should not be potted in June nor stopped after that time, and should receive a syringing on bright afternoons up to the end of July, when a cold pit will be a more suitable place. Tilt the lights back and front, and by the end of August lessen the supply of water, and this, with air and light, will ripen the small shoots, and by the middle or end of September the plant will need to be placed in its winter quarters. If the wood be well ripened this plant or set of plants will bloom in the following year, and the other, potted in June and stopped up to August, may do so also; but this will depend on the wood being ripened and the shoots not being stopped in spring. If the plant is not wanted as a specimen for summer shows, or is not required to bloom until the following or fourth year as a plant (the fifth from the cutting), we have to pot it in a 15-inch pot. At this potting use peat and loam in equal portions as the staple of the compost, with one-fourth of charcoal and silver sand in equal parts. With the same treatment as given the year before, the plant will grow freely; stopping must then be commenced, and it should be continued up to the end of June, syringing overhead daily to keep down thrips, to which the plant is liable. In June, if the soil quickly becomes dry, which shows the pot to be full of roots, clear, weak liquid manure may be given once or twice a-week from that time up to the end of July. The plant should then be set in a cold pit, the syringing discontinued, and air given back and front, and by the end of August the supply of water should be gradually diminished, so as to reduce it to a minimum by the third week in September. Remove the plant then to a light and airy part of some house where there are no creepers overhead, and no plant so near as to crowd it and prevent its receiving light sideways. Give air plentifully, but avoid giving it in front when the external atmosphere is frosty, affording at such times a change of air by opening the back lights instead. The temperature should be 45°, and not exceeding 50°, from fire heat, and as to the watering, confine that to giving enough to wet the soil when it exhibits signs of dryness.

As to training the plants, I have an inclination for cones or pyramids, and to secure these it is necessary that the plant have a leader, which will involve a change in the system of stopping. The shoots at the upper part of a plant are invariably the strongest, and if these be stopped as closely as those

lower down they will always be strongest. Now, to check this, the upper part of the plant should not be stopped beyond four or six joints at a time, shoots midway up the plant to three, whilst those near the rim of the pot will hardly need stopping at all. All weak shoots are not to be stopped unless they become straggling or otherwise interfere with the formation of an evenly-balanced specimen. The shoots will need tying down and regulating so as to have every part furnished. It is well, however, for those shoots tied horizontally if the ends curve upwards a little, for horizontal shoots do not grow nearly so strongly as those more erect.

In April an increase of from 5° to 10° by the end of the month will tend to encourage the swelling of the buds, water being given corresponding in amount to the increase of temperature and solar heat. When the plants are in bloom their beauty will be prolonged by placing them in a cooler temperature, and shade from sun is indispensable.

After flowering let the plants have a fortnight's rest by keeping them cool and dry, then prune or cut back the growths all over the plant rather closely, leaving, however, enough of the last year's growths for new shoots. If the plant is to bloom in the following year it must not be cut-in much; the pruning should, therefore, in this case be confined to removing or short-

ening irregular shoots. Subsequently, growth should be encouraged by a close and moist atmosphere, and shading from bright sun. Pot, if necessary, at once if the plant is not cut-in much, but not until the growths have attained an inch or two in length if the plant has been cut-in hard, it being then shaded and syringing overhead until the roots are working freely in the fresh soil. Afterwards admit air and light, exposing fully (still keeping the lights on), in August, and housing in good time for the winter.

For old plants use a compost of equal parts of turfy peat and loam, well turned and aired, chopped with the spade; and to this may be added one-third of leaf mould, old rotten manure, and bits of charcoal, in equal proportions, and one-sixth of silver sand. During growth, and when the flower-buds are showing and swelling, manure water may be given at every third watering; but not when the wood is ripening and in winter. The great point is to have the young wood well ripened. To have very fine specimens it is well to have two sets of plants, so as to allow one year's rest for preparation, whilst the other is brought on for blooming.

If aphides attack the plant fumigate with tobacco; and if thrips appear syringe freely when growing, fumigating with tobacco when syringing cannot be practised.—G. ABBEY.

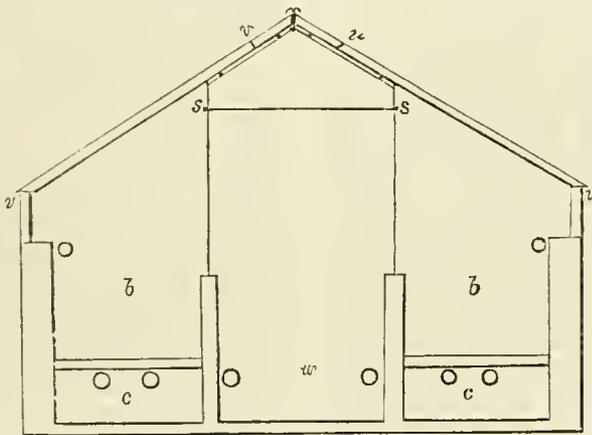
WINTER CUCUMBER-HOUSE.

Your correspondent, Mr. O'Donnell, has given in your last Volume, page 524, a description of a winter Cucumber-house, and as he thought it would be beneficial to some of your readers to have a description of other houses, I shall proceed in a simple manner to give the particulars of one that has been erected about five years, and has afforded me great satisfaction.

It is a span-roofed house, as will be seen by the accompanying section, and is 48 feet long by 11½ feet wide. The height is 8½ feet to the ridge. There is a bed on each side, with a walk in the centre. I have a partition in the centre, which divides the length into two parts, which gives me the advantage of growing Cucumbers all the year round. In the summer I grow Melons in one part and Cucumbers in the other.

It is heated by a large square boiler, of which I will give a description at some future time. There are four four-inch pipes for top heat in each house, two flows and two returns, and one four-inch flow-and-return under each bed for bottom heat. In each house there are four evaporating-troughs attached to the pipes to give moisture when required. Air is admitted at the top and sides by ventilators 18 inches wide by 1 foot deep.

The plan I have sent is on the scale of a quarter of an inch to the foot. The pipes are represented by small circles; *b b*, beds; *w*, walk; *c c*, chamber; *v v*, ventilators; *s s*, iron stays to support the centre of the roof.



In reading your Journal for the last eight or nine years I have at different times come across inquiries made respecting the construction of trellises. I have adopted a plan which may not be new to your readers, it is simply Barnard and Bishop's galvanised wire netting (commonly used for the purpose of making sheep-folds), strained on frames made of small round iron.

The mesh is sufficiently large to allow the hand to pass through for the purpose of training the plants. This netting is stretched about 15 inches from the glass on small crooks fastened on eyes, which are screwed to the rafters. This is very convenient, as the netting can be removed at any time when the house requires cleaning or painting. I think this preferable to wooden trellises, which are adopted in a great many houses.

Mr. Veitch, of the Royal Exotic Nurseries, Chelsea, saw my Cucumber-house in January, 1865, and said that the Cucumbers were the best

he had seen for the season, some being 18 inches in length or, I may say, even more. I think it is more economically constructed than the house described by Mr. O'Donnell; but still I must allow that that has one advantage over mine, which is the inner door and partition at the entrance, which excludes the cold draughts on the outer one being opened.—W. HALLETT.

GRAPE BUNCHES BECOMING TENDRILS—VINES BLEEDING.

THE Vines from which the enclosed specimens were taken are Muscat of Alexandria and Canon Hall Muscat. They have only been planted about seven years, I believe, and I think they have been heavily cropped, as I found on taking charge last summer that some of them were carrying seventeen or eighteen bunches, and scarcely any of the Vines are more than 1½ inch in diameter, some not more than 1 inch. They are in a good-sized well-constructed house, heated by hot water. The house was closed in the end of January, heat applied on the 1st of February, not much, and the temperature kept at about 45° at first, and gradually increased, with plenty of moisture; the highest it has ever been since starting was 73°. I give these particulars in order to make it plain what sort of treatment the Vines have had for the last few months.

Among other Vines in a lateinery we have two West's St.

Peter's. One day in February, when the Vines were being cleaned, one of the St. Peter's was left hanging, partly tied to the rafter, and the end resting on the floor all night. In the morning seven or eight of the topmost spurs were bleeding profusely. I crushed the ends with my teeth and bound them tightly up with a bit of fine wire, which stopped the bleeding at once. There has not been any heat on the house since the last Grapes were cut in January, only enough to keep out frost, in fact, it was so all winter. The buds are pushing now 1 or 2 inches long, and about a fortnight ago almost every Vine in the house commenced bleeding. I give a little heat now, so as to bring them on quietly after the first house. I do not know what sort of borders they are in, but am told these were well made. In the early house the Vines are planted inside the house; in the late one they are planted outside. Both borders

are covered with litter; in the early one with a thickness of 7 or 8 inches, in the late one of 4 or 5 inches.

Will you give me your opinion in the next Number as to what is the cause of the bunches running to tendrils in this way; and also what is the cause of the first bleeding of the St. Peter's, and the later bleeding of the whole lot?—E. VINEY.

[You have, apparently, acted quite right with the Vines. The cause of the bunches running to tendrils is most likely previous over-cropping and the roots being too deep, or having too much moisture in this wet season. We have some on two Muscats, though we had lessened the heads considerably; but they had borne immense crops for a number of years, and not received much countervailing nourishment. If the roots are not too deep the Vines will most likely recover themselves in another season. If you think the roots are rather deep, the Vines will require extra firing in the autumn. As to bleeding, we do not think in the case of the West's St. Peter's it was owing to the top of the shoot being bent near the ground. We attribute it and the bleeding in the late house to the mild winter, and the rather active state of the roots in the border. As a general rule, the sooner Vines are pruned after the fall of the leaf the better. In the case of very late Vines, where we could not prune owing to the Grapes, it is a good plan to cut out all the buds not wanted, before one is able to prune. This matter of bleeding is referred to in "Doings of the Last Week."]

WORK FOR THE WEEK.

KITCHEN GARDEN.

As soon as the principal crops are in the ground, and the supply of dung to serve for the season has been wheeled on to the principal quarters, proceed to make good any part of the Box edgings, either by taking the whole up and replanting, or filling up such blanks as may have occurred during the past year. Thrift and other similar edgings require taking up and replanting every two or three years. Although Box edging looks neat and helps to set off a kitchen garden, yet on account of its harbouring slugs and the annual repair which, even with the greatest care, it always requires, we prefer stone or earthenware for bordering, which though more expensive in the first place, will in a few years repay the additional outlay, besides the appearance of stability which the stone or earthenware edgings give to the walks. After the edgings are put in order, turn over or regravell the walks, and after rain let them be well rolled till they again become firm; the garden will then present through the season a clean well-regulated appearance. The minor paths or alleys to be kept in an equally tidy state, for which purpose place scrapers at each intersection of the paths or walks, or, in fact, wherever they appear likely to be required. *Beans*, make a sowing of Taylor's Large Windsor, to succeed those sown in the end of last month. *Bræccoli*, if a sowing of Snow's Winter White, the Walcheren, and Knight's Protecting has not yet been made, it should be done without delay. *Brussels Sprouts*, make a good sowing for winter use. *Cabbage*, a sowing of the Champion Early Dwarf should now be made to produce plants for winter and spring use. *Cardoons*, the seed may now be sown in trenches where the plants are to remain. When preparing the ground the manure to be covered with about 3 inches of soil. Place three seeds together, 14 inches apart. Only one plant, however, must be allowed to remain at each spot. *Cucumbers*, keep the shoots well regulated, as on this particular their fruitfulness in a great measure depends. Seed should now be sown to produce plants for ridges. *Mushrooms*, in making beds to produce through the summer, a portion of loam should be mixed with the dung to give greater solidity to the bed. *Nasturtiums*, sow. The seed if gathered when quite young and pickled in the usual way forms an excellent substitute for capers. Trained against trelliswork the plant is highly ornamental. *Potatoes*, if the main crops are not yet in, lose no time in planting them. *Savoys*, another sowing may be made for a late crop. *Turnips*, make another sowing.

FRUIT GARDEN.

A portion of the protecting material should be removed from Peach, Nectarine, and Apricot trees. Do this gradually, that the bloom may not suffer by a too sudden exposure. When canvas screens on rollers are employed, of course they are rolled up by day, and let down each night. If the nights, however, are warm, they need not be lowered quite down, as a little extra air by night will be more beneficial than otherwise to the bloom. Where spray or netting is used, and which could

not conveniently be removed daily, a part may be taken off at once, only keeping it on hand in case a return of severe weather should render its use again necessary.

FLOWER GARDEN.

Showery weather should be taken advantage of to complete the planting of deciduous trees and shrubs without delay, and likewise of any evergreens left unplanted from the autumn, as from the present time to the end of the month is the most suitable season, next to the autumn, for removing most kinds of evergreens. In planting avoid exposing the roots to the sun or drying winds. Mulch immediately after planting, to prevent undue evaporation from the soil as well as to save watering. A good watering overhead with the garden-engine on the evenings of bright days will prove of great use to newly-planted evergreens, and when the plants are large, the stem and some of the principal branches should have haybands tied round them, which, being damped once or twice daily, will keep the bark moist and facilitate the flow of sap. Proceed with the planting of hardy climbers against walls, trellises, and verandahs. Select some of the most showy species, such as Caprifolium, Wistaria, Bignonia, Clematis, Tecoma, &c., and introduce amongst them some of the strong-growing Noisette, evergreen, and hybrid climbing Roses. If it is desirable to hide some disagreeable object from view, we would strongly recommend the following Roses—Rampant, Donna Maria, Triomphe de Bolwyller, Madame d'Arblay, Garland, Queen of the Prairies, and Baltimore Belle; these are in every respect suitable for this purpose, being rapid and strong growers and abundant bloomers.

GREENHOUSE AND CONSERVATORY.

In watering pot plants, great care should be bestowed, as it is an important process; too much, too little, or an injudicious mode of application being equally fatal to high cultivation. Very many plants are seriously injured at the periods of shifting or potting off, by improper watering. A very fine-rosed watering-pot, and slight applications of water, at intervals, soon after potting, constitute the best way, as a general maxim, to penetrate the mass, and to cause the particles of soil so to arrange themselves, that the atmospheric influence shall be somewhat modified, but by no means intercepted. There is, however, no good reason why all plants should be watered immediately on shifting them. When a plant has no ball of earth, the water should, of course, be made to penetrate the whole mass, in order to prevent desiccation, which would sometimes ensue through extreme porosity in the new soil. When, however, the subject is a plant with a hard ball, a steeping overhead in water for an hour is a preferable course. After this, frequent syringings or waterings with a fine rose will be the soundest policy for a week or two. Proceed at once with the staking and tying-out of plants requiring such assistance. Turn each plant frequently round, that it may not become one-sided. Epacris and spring-flowering Heaths will bear close pruning after flowering is over. Correas that have been flowering during winter should now be rather closely pruned, and kept in-doors all summer, when they will take the place of Fuchsias after September. The cuttings we advised to be struck for a stock of winter-flowering plants will now require potting off. As it is not desirable that these should be grown to a large size, keep them rather short of pot-room, a hot-water pit will answer best for growing these and similar plants. The plants can then be brought close up to the glass, and by a little attention will form stout, bushy subjects, with well-ripened wood by the autumn, and they may then be brought into bloom at pleasure.

STOVE.

Pay due attention to the watering, shifting, stopping, &c., of stove plants in general. Make cuttings as they can be obtained in a young state of Geissoneria, Plumbago, Eranthemum, Justicia, Clerodendron, Vinca, Euphorbia, Brugmansia, Begonia, Thunbergia, &c., in order to keep up a succession of clean young stock. Syringe freely in fine weather; shut up early with solar heat, give air freely, and fumigate with tobacco in due time.

PITS AND FRAMES.

Cultivate plenty of Heliotropes, Aloysias, and the sweet-smelling Pelargoniums. Part the roots of *Eriogonum macrocarpa*, or by-and-by cuttings of the shoots may be made when about 3 inches long. They soon root if put in a little heat. Increase Gladioluses and Lilies, as they are very useful in relieving dark masses of foliage. *Cistus* and *Helianthemum* should also be had in abundance.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

VERY much the same as last week, the heavy rains making the ground too soaked to do much. Prepared for fresh beds of potherbs, and sowed such kinds as Basil, Sweet Marjoram, Ice-plant, &c., under glass. Sowed also in a mild hotbed Capsicums, Tomatoes, pickling Cucumbers, Vegetable Marrows, &c., and put in some cuttings of Cucumbers, as we are always rather short of desirable seed. Turned a lot of Kidney Beans from five-inch into ten-inch pots, and put a row of them in the orchard-house, where we think they will be safe. Planted more in five-inch pots, five Beans in a pot; they will be turned out after they are some inches in height, and be protected with a few laurel branches. We find, even if the ground were more suitable, it would be of little use planting them out of doors, as the pheasants are so keen in looking after all fresh-stirred ground that we might just as well have forty fowls brought to the kitchen garden from the farm.

Planted-out more Cucumbers, as detailed last week. Those in our earliest three lights, though healthy, are showing the effects of hard early cropping. Early Cucumbers are an object, and hence the first crop is frequently injured by heavy cropping. When it is desired to keep the same plants long in bearing, they should produce but sparingly, until the vines of the Cucumbers pretty well fill the space allotted to them in the frame or pit. Like almost everything, if they bear heavily before they have made plenty of growth, they are apt to produce but little for some time afterwards. Amateurs should also recollect that a large Cucumber, from 16 to 24 inches in length, at an early period and from young plants, will injure the plants more than four or half a dozen Cucumbers crisp for the table at from 7 to 8 inches in length. To ease young plants we frequently cut the stalk of the Cucumber half way through, or more, as then it keeps more crisp than when cut, and injures the plant less, though when covered with leaves of Broccoli or Rhubarb Cucumbers will keep well some days in a cool place. Particular people like them best cut only a short time before they are used. When the most fruit possible is wanted from young plants in an early frame or pit, it is advisable to follow with another bed from which little shall be cut until the plants are established, and then, when they are in full bearing, either give a rest to or renew the first bed with fresh plants. This will explain how some persons find their Cucumbers standing still after yielding fruit from small young plants. They must have a few weeks' rest to recruit their energies, and then most likely they will do well enough. "W." has a deep pit, plenty of bottom heat and top heat, but his bed is 5 feet from the glass, and he thinks that would not do for Cucumbers. We have not a doubt of its doing first-rate, and without setting up the plants on reversed pots. We would advise growing the plants in pots, and without stopping, training them to one stem until they were nearly 4 feet in height, then to turn out the plants into the bed, and in a few days stop the plant by picking out its point. All the buds on the stem below the trellis should be picked out, and the shoots trained as they break, to a trellis 15 inches from the glass. Such plants are more easily kept from woodlice, &c., than those grown on a bed, and, as a general rule, they will be more fruitful.

Cucumbers and Vermin.—The strong plants in the frame that were eaten and spoiled did no more good. The process resorted to, as detailed some weeks ago, seems as yet to be successful with the fresh plants turned out, which now half fill the box, and are showing fruit. We may as well repeat the process. Earth was beaten firmly all round the inside of the box, and from 4 to 6 inches above the level where the box rested on the dung-bed. This was to prevent any steam or smell coming in from the outside—a good plan where fresh rank material is used for linings. This done, the lower part of the box outside, and the bed on which it rested, were smeared with coal tar, and a little was sprinkled farther down on the bed. Litter was then placed over it, so as to cover the box considerably outside. When mice and rats find their way into such beds, they seldom go much lower down outside than the bottom of the box. The heat of the linings would keep the tar there in a moist state, and so long as it is so none of them will willingly go near it. At any rate, they have not meddled with this bed since. We would, however, strongly urge upon any who would try this preventive to make sure that none of the fumes of the tar penetrate into the frame or pit, or that will be as dangerous as the rats themselves. A keen amateur, to make assurance doubly sure, plastered some tar inside of his frame, after reading our previous notice, and

was inclined to lay the blame on us for the unfortunate results, though then, as now, we were particularly urgent that no fumes from the tar should pass inside.

Moles and Tar.—Moles have been wonderfully plentiful and active this season. In fields, in pastures, pleasure grounds, kitchen garden, and in slight hotbeds for Radishes, Carrots, Potatoes, &c., they have been hard at work. In common fields and pastures we doubt very much if they do not do more good than harm. They put out of the way lots of worms, wire-worms, &c. Their deep runs help to drain the land, and so long as their galleries are deep they do little or no injury to vegetation, and several times in our experience, when they have so taken possession of a little meadow, as pretty well to cover it with their heaps, the spreading of these has acted as a valuable surface-dressing in spring, and the interfering with these heaps is apt to give the mole offence, and he decamps for a while, until it would be advantageous to bring some of the subsoil to the surface again. In pleasure grounds he does interfere with high keeping and neatness, and more especially when the runs are just under the surface, the whole rendered visible by a slight rounded ridge, underneath which you may safely calculate the roots of grass are so cut as to prevent you with narrow, withered spaces in summer, if you do nothing to prevent it. Well, having tried in our hotbeds gentle deterrents which would not keep moles out, if already comfortably nestled there, we were obliged to trap some in the usual way, and the less of the scent of the hand there is about the trap the more easily will the mole be caught. As respects the pleasure ground and gardens, however, we were alike kind enough to the moles, and selfish enough as regards ourselves, merely to desire them to shift their quarters, and let others trap them who were fonder of the job, and this object we think we have effected by making openings with a trowel, in the shallow runs especially, pouring into the openings a little tar, and then shutting them up. We have scarcely observed a new run since. The mole is such a cleanly creature, that the scent and touch of tar are too much for his delicate sensibilities.

Peas, Pheasants, and Tar.—This will almost appear a tar article, but the simple hint may be serviceable to some. Until this season we suffered comparatively little from pheasants. From a small quarter of winter Greens it has not been uncommon lately to start twenty in a morning, and they managed to obtain more of the hearts of Brussels Sprouts, &c., than those for whom they were intended. We knew of old how fond they were of Peas and Beans. We began to think we should have to go through the labour of raising all such crops in various ways, and planting them out when 6 or 9 inches in height. We know very well what would stop them—a rather close-meshed wire netting, in a somewhat semicircular shape, the open base a foot in width, and from 9 to 12 inches in height to the dome of the arch. If the mesh were more than 2 inches across the pheasants would reach the Peas and the young growth through the meshes. If it is from three-quarters of an inch to an inch, there is the risk that they would get their head in and not get it out again. Such wire guards could either have iron feet to go in the ground, or be fastened to stakes; and the wire if galvanised would last a long time, be useful for many purposes besides Peas, and could be put away in little room when not in use. Common cord netting with meshes not less than an inch across are less useful, as the pheasants will tear them, and find their way underneath and, what is a more serious matter, will often hang themselves. We could have used common netting, but we have a vivid recollection of seeing half a dozen beautiful cock birds that had committed involuntary suicide in a net thirty years ago. The gardener and the keeper wisely kept the matter to themselves; and the latter, being an obliging man as well as a faithful servant, turned out every morning early for a week, and made the pheasants so uncomfortable close to the garden, that they went farther afield for their chief feeding grounds. The recollection of this hanging in the nets kept us from using them, and until the last sowing a fortnight ago not a single Pea or Bean was left of all the previous sowings out of doors. We had sowed in the usual way, only covering with rough ashes as being disagreeable to small birds and mice; and then we laid firmly along the rows branches of larch, &c., pretty close in texture, which we meant to remain until the Peas were several inches in height. The pheasants saved us all that trouble, uniting their strength to turn the branches aside, and then clearing the rows as they went.

Our last sowing, a fortnight ago, has as yet remained undisturbed. We based our operations on the proud cleanly

character of the bird, and resolved that he should meet with enough of nastiness before he reached our Peas. We sowed and covered as formerly, placed the branches along the rows, then stretched a stout string about a foot above the rows, fastened pieces of paper and rag to the string, smeared the string, paper, &c., with tar, and shook some tar, with a brush, over the branches, scattering a little on the ground along the rows, the tar being heated over one of the furnaces to make it shake easily from the brush. This will smell strong, and keep rather soft and liquid for a considerable time at this season, and if we find it necessary we can run the brush again along the string. By the time the Peas are up the little tar on the ground will have become rather dry and comparatively scentless, and will not at all affect their growth under such circumstances. The next morning at half-past four o'clock there were the pheasants at their old feeding-ground, chuckling defiance, just as if from wall or tree they had seen the fresh seed put in the ground. It was very amusing to see them strut and stare, march and run up and down and round these rows of Peas and Beans, not able to nurse their wrath, but giving free vent to their indignation, as, what with the filthy string above the row and the spattered branches and ground immediately over it, they could not find a comfortable spot on which to employ either bill or claws. During the whole time not a single hole in the rows has been made, and so disgusted did the birds seem on account of being foiled that they almost left off their attentions to a quarter of Broccoli near at hand, where they were not only reducing the leaves into threads, but had pecked the heads in the centre. As tar is cheap enough, something like 1d. a-gallon at most gas-works, and as heating it will cause it to go a good way, it may be useful for keeping off more enemies to the gardener than pheasants.

Would like to give more air to Peas in pots in the orchard-house, which would cause them to swell and set faster; but in these stormy days we like to bring the one orchard-house on by giving much less air, and this, so far, makes the haulm of the Peas grow more strongly than we care about. That row in pots will yield a fine lot of gathering, and standing as the plants do close to the back wall, they are much stronger and earlier than those planted-out nearer the front, where they do not receive quite so much sun heat.

Sea-kale.—Trenched and enriched some ground for planting-out the roots taken up to be forced. The crowns will be all planted by themselves, and the pieces of roots without buds, from 6 to 8 inches long, will also be planted by themselves. These seldom make such good plants as young plants a year or two years from the seed, and they do not do so well from forced plants as those pieces of roots that are taken up from the open air. All the roots forced, except the latest ones put in, have been standing in dry earth in a shed, so as to harden them off well before placing them in the open ground. We shall get what we want in a week or ten days in the open ground. Here we have an example that litter keeps heat out as well as keeps heat in. We covered some time ago a couple of rows with common pots, filling up the hole in the bottom, and merely covered the pots with litter to protect them and make all dark; but though a few plants are coming on nicely, as a rule this piece covered up is not so forward as other rows fully exposed to the weather. The warmish rains and a little sun have rendered the exposed ground warmer than that merely covered with pots and litter. Of course if there had been any heat in the litter it would have been different. Being deficient of pots we have covered a couple of rows with old wooden hurdles. Pots some 10 inches in height were set along the sides of the rows, on which the hurdles with some branches drawn through them were placed; the spaces at the sides along the pots on which the hurdles rested were packed firmly with litter to keep the light out; and some litter and rough hay were thrown over the hurdles for a similar purpose. The hurdles can be easily held up on one side to cut the Sea-kale as wanted. Plenty of Sea-kale enables the gardener to keep the table well supplied in winter. That which is to be forced should not be cut too late in spring.

Rhubarb will now come fast enough out of doors to dispense with forcing. It is generally plentiful in the markets in this neighbourhood, brought from the south of the island, a fortnight or three weeks before we can have it in the open ground here. Roots, taken up for forcing, when divided and planted-out, will generally be fit for raising again after they have had two summers to grow. Now is a good time to sow, either at once in light land, or under protection, and then to be planted-out in the case of heavier and later soils.

FRUIT GARDEN.

A peas of other matter has prevented us getting on with nailing as we wished. In the outside border of the late vinery which is now breaking and growing fast, independently of our efforts to keep the *Vines* back, we removed the little stubble from the border, and scraped off and wheeled away all the black surface soil, chiefly decayed dung, which had been left on all the winter. Then slightly forked the border, as the roots were near the surface, and gave a top-dressing of fibry loam, with a fair dressing of lime and soot, and covered with a couple of inches of horse-dung, chiefly droppings. We expected to have renewed a portion of this, and other borders, but could not get at them, nor yet the material in time. Young Vines planted the other year, intending to take them up again, are coming on very strong, so that for this season or more they will take no harm. It is no such easy matter to procure the necessary material for a Vine-border, when made as it ought to be, and though wonders are often seen without drainage or border-making, as at Messrs. Lano's, at Berkhamstead, still it would not do to depend on such modes when the gardener can do better. As a general rule, in all cold, stiff soils, in addition to cross and front drains, we should like the most of the border to be above the ground level, and in addition to concreting the bottom, we would like a foot of rubble between the concrete and the soil, and rough material for this purpose is very scarce in some neighbourhoods. We have done nothing but give a little top-dressing to our old borders for many years, with a pinch of superphosphate or guano at times, the superphosphate being the safest to use; but such dressings we look upon as just serving a temporary purpose.

For various reasons, we generally used to tie the Vines of this late vinery horizontally along the front of the house, and we think they not only broke very regularly, but broke a week or so later, which we were rather anxious to secure, as the house being crammed with a number of bedding and other plants, tier above tier, as soon as the Grapes were cut, we wished to use hardly any fire in this house, except when the bunches approached the blooming period. As the sun was becoming strong by that time, the chief help in fine weather was derived from sun heat, as the house could be kept pretty close after all the hardier plants were removed. For two or three seasons, instead of bringing the Vines down to the front of the house, and tying them lengthwise there, each rod when pruned and washed was suspended at from 20 to 24 or more inches from the glass, and they have uniformly broken very regularly; but, as stated above, rather earlier than when tied along the front pretty close to the glass. This might be owing to the two circumstances, that the Vines close to the front air were in the coldest part of the house, and we could make them cooler still by whitewashing the glass roof immediately above them. For early forcing we think the Vines break more regularly when placed horizontally, or lengthwise along the front of the house. The late vinery above referred to has scarcely ever had a dash from the syringe, except one good washing immediately after the fruit has set. During spring, if for no other reason, it would not have been advisable to have used the syringe on account of the plants growing in the house, some of which do not like to have the sun on them whilst the leaves are wet or moist. *Pelargoniums*, for instance, should scarcely ever have wet foliage presented to the sun's rays.

In earlier vineries proceeded much the same as in previous weeks, stopping, tying, and regulating shoots, and drawing the hand over bunches of Muscat and Sweetwater in bloom. Tied roughly Fig shoots in low pit-house, thinned and stopped. Tied Peach shoots in the Peach-house, and left the best-placed fruit. Disbudded in the first orchard-house, or rather removed the fore-right shoots, and took away and stopped a great many more, not making the trees too bare, however, at first. The fruit has set excessively thickly. No buds dropped from this house, but if more than half of them had fallen there would have still been more than enough to give plenty of thinning as they grow. The bloom has hung a very long time this season. In our early Peach-house we never knew the bloom last such a short time. There was an unusual day's sun shortly after the flowers were open, and in a few days the bloom began to fall; but the fruit set very well notwithstanding, but nothing was required in the way of thinning in comparison to what will be wanted in the orchard-house.

The Vines planted-out in the orchard-house are just moving, the most forward buds being from a quarter to half an inch in length, and just as in vineries and Peach-houses, unless where care is taken to keep them late, they will incline to come earlier

by a little every year. This leads us just to notice "AN OLD FRIEND'S" case, who has neglected to cut back his Vines planted last season in the orchard-house, and which are not very strong, but which he meant to shorten by 5 feet at least, yet he never thought of it until he saw the buds bursting, and now he is afraid to cut back. We have no doubt that Thomson's styptic might even suit his purpose if the Vines were cut back, otherwise they would bleed very much, and be much weakened in consequence. If he do not choose that mode he may manage pretty well in this way:—Begin at the top of the shoot, and as soon as the buds are from half an inch in length rub them off roughly with the finger, going down the stem until you come to the shoot or shoots you wish to leave. When this selected shoot has grown from 20 to 24 inches in length, then, if you choose, you may cut off the old naked disbudbed shoots or main stem. If you rub off these short bud-shoots, there will be no bleeding; if you cut them off with a knife there will be plenty of bleeding, in fact, almost as much as if you had cut the shoot in the usual mode of shortening.

Vines Bleeding Unexpectedly.—We have known this take place several times when fresh borders of fibry turf had been made with a good mixture of lime rubbish, boiled bruised bones, &c., which, with a little protection on the border, caused a mild heat all the winter to the roots from the decomposing turf, &c. The Vines were pruned at the fall of the leaf in the usual way, and showed no appearance of anything peculiar until they began to ooze and bleed from every cut about three weeks after they were pruned, and some six weeks before it was considered suitable to begin to start them for forcing. Whenever from the peculiar circumstances such a result may be expected, it is advisable to keep the roots dryish until six weeks after pruning, and immediately on pruning to daub every cut with a thick paint made of white lead chiefly, and a little linseed oil and turpentine. Burning the cut parts and daubing the places with various paints was of little use after the sap began to flow. No doubt styptics would have been used if they had been to be had. What surprised us most was the fact that, with one or two exceptions, the great bulk of the Vines that we last saw under such circumstances, after weeping in this way for fully six weeks, broke, and grew seemingly as strong as if they had never dropped the smallest quantity of their sap. Of course in this and the previous case of neglected pruning alluded to, whenever the leaves expand there will be no more bleeding from the Vine.

ORNAMENTAL DEPARTMENT.

Our work here has been very varied, and some of it, such as moving shrubs, turfing, &c., had often to be left, owing to the weather. On the front border of the earlier vineries, to which heat has been applied, and which was protected by leaves and litter just slightly warm, a bank was made of the litter back and front, a few hot leaves added, a narrow board placed lengthwise well on the ridge, and on these boards old sashes were laid back and front. Under these were placed a great many scarlet Geraniums potted from boxes into small pots; they were watered, plunged, and the pots covered with leaves, as no more water at the roots will thus be needed until the pots are full of roots. Lots of hardier Geraniums were turned out into an earth-pit, though not so dry as we should have liked the soil to have been. Calceolarias in a pit are now suffering from not being removed, wanting sadly to be from 4 to 6 inches apart instead of 1½ inch. They are a perfect thicket, and have been pretty well exposed of late. Auriculas, showing trusses nicely, should be defended from cold rains and east winds, and if manure waterings are given not a leaf should be touched.

Finished pruning Roses. It is well to defer the tender sorts until late, as then if the most forward buds are injured no harm is done. We have seen all the forward buds of unpruned Roses blackened in March, whilst the buds just swelling nearer the base of the shoot suffered not at all. If these Roses had been pruned in winter, and the lower buds pushed, they would most likely have been ruined for bloom that season. We hear of a good many so injured this season. This is certainly one advantage of not being able to overtake our work as we would wish to do. Planted out lots of Hollyhocks, and divided some of the larger stools. Stools that are too large may have the shoots thinned out when from 4 to 6 inches long; and, with a piece of the older stem attached, if these are planted thickly in a warm place they may be lifted again in early summer, and will bloom late the same autumn. Hardly one will fail in light soil, even in the open air. Potted young Pelargoniums for late blooming, picked Orchid-baskets, potted Gloxinias, and Begonias, and shook Gesneras out of their pots, and set them in

shallow boxes just to begin to move, as the sooner they are started after this the better they do for autumn and winter ornaments. When too wet for general work, mended old sashes and atraw covers, made tallies and washed pots, tied up plants, and picked and fresh arranged plant-houses.—R. F.

COVENT GARDEN MARKET.—APRIL 14.

THE demand is but moderate, and last week's quotations have barely been maintained. Dessert Apples are confined to Golden Knob and Non-pareils; Pears to Easter Beurre and Ne Plus Meuris. Pines and hot-house Grapes continue sufficient for the demand. Vegetables are abundant, and of Potatoes there is a heavy supply. New ones bring from 4d. to 6d. per lb.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons..... each	3	0	5	0
Apricots..... doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries..... lb.	0	0	0	0	Oranges..... 100	6	0	12	0
Chestnuts..... bush.	8	0	16	0	Peaches.....doz.	0	0	0	0
Currants, Red ½ sieve	0	0	0	0	Pears (dessert) .. doz.	6	0	12	0
Black..... do.	0	0	0	0	kitchen..... doz.	0	0	0	0
Figs..... doz.	0	0	0	0	Pine Apples..... lb.	8	0	12	0
Filberts.....lb.	0	0	0	0	Plums..... ½ sieve	0	0	0	0
Cobs.....100lbs.	0	16	0	0	Quinces..... ½ sieve	0	0	0	0
Gooseberries ½ sieve	0	0	0	0	Raspberries.....lb.	0	0	0	0
Grapes, Hothouse.. lb.	15	0	25	0	Strawberries..... oz.	1	0	2	0
Lemons..... 100	6	0	10	0	Walnuts..... bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... each	0	6	0	0	Leeks..... bunch	0	3	0	0
Asparagus..... bundle	6	0	10	0	Lettuce..... per doz.	1	0	1	6
Beans, Broad.. bushel	0	0	0	0	Mushrooms... pottle	2	0	3	0
Kidney.....100	2	0	3	0	Must.& Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... bushel	3	0	5	0
Broccoli..... bundle	1	0	1	6	Parsley.....sieve	2	0	3	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips..... doz.	0	9	1	5
Cabbage..... doz.	1	0	2	0	Peas..... quart	0	0	0	0
Capsicums.....100	0	0	0	0	Potatoes..... bushel	2	6	4	0
Carrots..... bunch	0	4	0	8	Kidney..... do.	3	0	4	0
Cauliflower..... doz.	2	0	6	0	Radishes... doz. hands	0	6	1	0
Celery..... bundle	2	0	3	0	Rhubarb..... bundle	0	6	1	0
Cucumbers..... each	0	6	2	0	Savoys..... doz.	2	0	3	0
pickling... doz.	0	0	0	0	Sea-kale..... basket	1	6	2	6
Endive..... doz.	2	0	0	0	Shallots..... lb.	0	8	0	0
Fennel..... bunch	0	3	0	0	Spinach..... bushel	5	0	0	0
Garlic..... lb.	1	0	0	0	Tomatoes.... ½ sieve	0	0	0	0
Herbs..... bunch	0	3	0	0	Turnips..... bunch	0	4	0	6
Horseradish.. bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

INDEX (E. A. P.).—You can have the Index for the last half year if you enclose four postage stamps with your direction, and repeat what you want.

PRONUNCIATION OF BOTANICAL TERMS (G. N.).—Henslow's "Dictionary of Botanical Terms" shows where the emphasis in each is to be laid.

GUANO LIQUID MANURE (H. M.).—Half an ounce of guano to a gallon of water is quite strong enough for watering flowering plants. For kitchen vegetables it might be made fully twice as strong. If you enclose four postage stamps with your direction, and order "Maures, or Muck for the Many," you will have the book sent to you free by post. It contains ample directions about making and using all sorts of fertilisers.

FLOWER-BEDS IN LAWN (L. E. S.).—We cannot depart from our rule not to detail the flower-planting of beds or gardens we have never seen. If you will state how you propose to plant the bed we will readily point out anything in your plan which we think would be objectionable.

SEEDLING AURICULAS (X. Y. Z.).—There is nothing remarkable in your seedling Auriculas. They are, as Alpines, very pretty, but deficient in quality as florists' flowers. The centres of the flowers are not sufficiently bright and circular.

DAISY KNIFE (J. A.).—There is a description and drawing of it in No. 113, New Series, of this Journal. You can have it free by post from our office for 4d. Any blacksmith could make one.

JASMINE NOT EXPANDING ITS FLOWERS (S.).—We think if the plant were to have abundance of air and light, with a position near the glass, plentiful supplies of water, and occasionally applications of weak liquid manure, that the flowers would open another year.

BOILERS (J. Warell).—We have no doubt that the boiler (saddle-backed), is a very good one; but neither in shape nor setting do we see any difference from those usually employed, except in the two metal plates that pass from the boiler through the flue into the arched brick-work. Such boilers if set low enough will burn any fuel that is presented to them. We no doubtful if the metal plates are of much advantage. If anything happened to the boiler it would be more difficult to take it out.

SALT TO ASPARAGUS-BEDS (M. H.).—It is best applied to the beds during the period of the growth of the Asparagus—that is, from March to September. Wood ashes are chiefly valuable as a manure for the salts they contain, which are washed out if the ashes are exposed to rain. Turnips, Peas, Beans, and lawns are benefited by them if used at the rate of forty bushels per acre.

FLOWER-GARDEN PLANTING (This One).—We think your simple planting will look well, but we would omit the Asters, as they will not keep on with the others.

SOWING IVY BERRIES (A Subscriber).—The leaf sent, we think, is an Aucuba leaf, and not a Laurel leaf. The berries of the Ivy will be shrunk or shrivelled by the middle of May, when they may be sown at once. Birds, &c., care little for them after the pulp is gone; but unless for some particular purpose, why sow the seeds at all, when cuttings a foot long would root so soon in a moist shady place?

VINES (A Young Gardener).—The Froc de la Boulaye, which you have, is the same as our Profic Sweetwater, an early white variety, ripening its fruit well in a cool vivary. Its fruits are more readily than that of the old Sweetwater. Your Chasselas de Fontainbleau is our Royal Mascadine.

CUCUMBER (A Constant Subscriber).—For your own use, grow in your heated the old Long Pickley. None excels it in proficiency of good fruit.

AMATEUR'S FORCING PIT (B. Gooch).—Your plan is a very good one, and a much finer and costlier affair than Mr. Atwood's, but furnishing you with the great pleasure of doing everything inside, and in any weather. We presume the ground is solid on which you build your flues, otherwise we would not have raised it, as the stems of the Cucumbers can easily be taken up to the trellis, and a bed for various purposes is most easily managed when the side walls are not too high against the person of the operator. Now, for what we think would easily improve your little house.

We approve of your two upright drain-pipes communicating with the tank between the pipes, but we would have more of them to let the heat into the atmosphere of the house without too much heating the soil. The soil, also, at present seems to rest on the flues, as well as the slate covering of the tank, and the roots that touch the flues will be apt to be injured. A very simple plan would be to cover the flues likewise, 3 inches or so above them, with slate or open rubble, allow the vapour from the tank to pass over the flues, and have a small drain-pipe—say 1 to 1½ inch in diameter, with its open end fastened in this chamber, and the other end standing up close to the side wall—say one back and front every 4 feet—and the upper end furnished with a plug, to let a moist heat into the atmosphere of the house at will. This is merely a little matter, and if you adopt it, we should like to know with what result. Both you and Mr. Atwood have dissipated the prevalent idea that Portland cement would not stand dry heat. Mr. Robson used to have houses heated by round pipes, so formed of cement.

AMATEUR'S PIT (Ardent Lover of Flowers).—The Amateur's pit, page 222, as you observe, one chiefly for first economy and confined utility, but, of course, like all mere pits, it does not afford the means for the proprietor working inside. Your proposed little house, 6½ feet high at back, and 4 feet in front, with a bed 3 feet wide, and a path 3 feet wide, will enable you to walk comfortably at the back; but if you can either raise your wall or sink the pit to make the back wall 7 feet in height, it will be still better. Your new house for propagating Cucumbers, &c., will stand at right angles with your present potting-shed and greenhouse. In your case we would place the flow-flue and return-flue beneath your bed, so as to have no obstruction in your path. If the wall of the flue next the path is made of brick-on-bed, you could continue the wall of your bed above it. For giving you moist as well as dry heat, see the plan suggested to Mr. Gooch, in making a tank between the two flues. You could do so easily by placing your two flues a little nearer each other. With such a contrivance you could always command dry and moist heat, and if the bottom of your bed were covered with slate, about 4 inches from the flue, you would always have plenty of bottom heat; and if you had drain-pipes set on end, one end open into the chamber, and the other end open above the soil or plunging material, and that end furnished with a plug, you could let heat up as you liked. Even on the proposed arrangement of your section, without tank or anything of that kind, you could always obtain plenty of heat for the atmosphere of the house, by having a wooden brick made like a plug, every 4 feet, to place in the side wall of the chamber next the path, which you could pull out or put in at pleasure. Some mode of having a tank, however, would be useful. You could easily heat your two houses from the same shed, but we think you would do it most economically by two small fireplaces, as the greenhouse would need little fire except in frost. If your iron boiler is sufficient, there is no difficulty in joining the one-inch, which you now have, to three-inch pipes. The best way is by sockets to fit the three-inch pipes, and with inch holes in the socket to receive the one-inch pipes. The simplest mode where there is little pressure, is to insert a plug of wood in the three-inch pipe, and take the one-inch pipe through it secured by white lead. This will not impede circulation. We agree with you, that hot water is the best mode of heating; but we contend that for heating a small place the flue is the more economical. We, therefore, have given such prominence to the pit of Mr. Atwood. The grafting will do very well if scion and stock are joined on one side. That is one of the quickest and best modes of grafting.

HOURS OF EMPLOYMENT (A Subscriber).—It is common when a man has a particular charge in a garden, when he has his Sunday out, to see that all is right before he goes, give suitable directions as to air, shade, &c., to the man left in charge, and see that all is right when he returns home. If he feels an interest in what is committed to his care, he will do all this without any specific agreement. Were he compelled to stay at home to see another man do the necessary work, he would have no rest or change on the Sunday. It is always best to have a clear understanding, and not to trust even to the use or custom. We have known cases of foremen who scarcely ever had a Sunday to themselves; but it told badly on all concerned.

FLUE HEATING (J. Pryor).—You surprise us by stating that in a house 20 feet by 12 feet, and heated by some 60 feet of flue, 14 inches deep, and 7 inches wide, you cannot have a higher temperature in a frosty night than 35°, though high enough for a vivary when you go to bed. If you consult a coal merchant he will tell you that some coals will make even in a common fireplace, and go out if the poker is not used, and that others will fall as they burn, and need no touching until they are burned out. The latter would suit you best. With the good draught in your flue you would burn anything in it, and trouble ourselves very little about the kind of fuel. Such a length of flue ought to retain the heat a long time, even after the fire is out. Wet cinders and ashes should be used for banking up at night, but to prevent caking, and the fire going out, you must lessen or prevent air passing through the bars from the ash-pit door, as that is the chief cause of the fire going out and leaving a cake of unburned coal above; and if even that do not answer, you must widen your furnace 6 inches without using more bars for the flooring. Mr. Fish recollects a case in point. He, and another young man, had to attend to the fires of a stove in the evening, and the foreman attended to them at other times. During his comrade's week of firing there was always grumbling that the fires were out in the morning, though the heat was generally about the mark. He raked the bars before putting on the fuel for the night. Having made sure of the heat Mr. F. patted down the live fuel on the bars before putting on the fresh coal, with its covering of ashes, and there was always plenty of fire in the morning, with a good clinker for the foreman to draw out. It was one of the cases in which doing the less was attended with the desired result. The patting down the live fuel on the bars prevented the air passing through them, and combustion was much more slow. We think that such a mode, and keeping the ash-pit door close at night, will help to keep the fire in; but, even now, with 2 feet in depth of fuel, and all burned out, we can scarcely reconcile how the fire should become so cold during the night.

VINES FROM LAST AUTUMN'S CUTTINGS FRUITING (S.).—Vines, cuttings last autumn, rooted in January, and showing a good appearance of fruit now, are not at all common. We have seen and done such things as experiments, by taking long pieces of the severed stems, or shoots, of a Vine, and causing the lower part to root before the top moved much in the part above ground; but the result in general was not equal by any means to that obtained from Vines treated in the usual way. Perhaps we do not quite understand your statement.

HARD WATER FOR PLANTS (W. H.).—The water of which you sent us a sample is hard, and probably from containing much lime and magnesia, kept suspended in it by carbonic acid gas. You can render it fit for watering conservatory plants by exposing it for a considerable time to sun and air, or adding to it a little soda, such as is used by washerwomen, or potash. By exposure to the atmosphere and heating it at the same time, the softening—that is, the depositing from it of the calcareous salts, would be hastened. You will see what Mr. Robson says to-day about water. We knew one very successful gardener who always mixed peat soil with the water he intended for his American and Heath plants, some hours before using it.

DOUBLE VIOLETS BECOMING SINGLE (Prospera).—The Violets you planted last spring as double-flowered were certainly single at the time, though you did not know it. It is rare that double flowers become single, but it is not unusual for single to become double-flowering.

HEATING BY HOT AIR (A Constant Reader, Stockport).—Heated air, pure, free from smoke, will answer all the purposes you want, if the dryness is sufficiently neutralised. We believe you may carry out your plan if you superintend the working yourself, but we should be doubtful if the working were left to others. Besides, we much doubt if the air from the retort will heat 100 feet of such piping, and also doubt if it would be sufficient to heat the different houses. We also fear that unless you have a chamber round the retort, the sheet-iron pipes will rust but a short time, and the having three of these pipes, one two-inch and one four-inch inside of an eight-inch pipe, makes it rather intricate. What is chiefly in your favour is the gradual rise in the 100 feet. We must say that we are doubtful of the successful heating of so many places by such means, one large place is so different.

WASHING VINES—PRENING (B. & W.).—The best time for washing Vines is immediately after they are pruned, and the best time to do this is immediately the leaves turn yellow and fall. No better mode for doing this exists than to remove merely the loose bark with the fingers, and then scrub the stems with soap and water, and then when dry daub them all over with a paint made of water, sulphur, and clay. If the stems are well washed twice with soap and water, the clay daubing may be dispensed with. Its chief use is to imprison any eggs of insects that may be left. As your Vines will now be budding, you must give up all idea of such washing for this season, and the best plan you can adopt is to mix a good deal of sulphur with the limewash you use for washing the walls, &c., of your greenhouse. As respects the Vine on which you have left two shoots, and one of which you would rather have cut back, do not think of cutting it now, and resorting to any mode to prevent bleeding, but just wait until the buds have pushed to an inch or more in length, and then simply rub off with your fingers all the buds above that near the base which you wish to leave. The rubbing off will not be attended with bleeding. Cutting off the buds will cause bleeding.

CYCLAMEN NOT GROWING (R. F. Wheeler).—The pots of C. coum and C. europeum should be plunged in ashes in a cold frame, and be kept there with the soil moist until the foliage decay. C. persicum should be kept in the greenhouse until June, and then be placed out of doors, returning it in-doors in September, by which time it will be pushing new growths, and may then be repotted. C. coum may be potted in the end of August or early in September, and C. europeum will then be showing for bloom. It is hardy, and may be planted out on rockwork, covering the corn 3 or 4 inches with light friable soil. If it have a position shaded from the midday sun all the better. It is not unusual for Cyclamens to grow indifferently the first year, in consequence of their being deprived of their roots by taking them out of the ground, but they recover in a year or two.

ROSSES FOR POT CULTURE IN GREENHOUSE (Idem).—Tea-scented—Doventiensis, Gloire de Dijon, Barillet Deschamps, Saffrano, and Niphetos. Noisette—Miss Gray, Polonie Bourdin, Celina Forestier, and Triomphe de Rennes. Bourbon—Baron Geneffa, Emotion, Reveil, and Souvenir de Malmaison. China—Madame Bréon, Triomphe de Gand, Archduc Charles, Mrs. Bosanquet, Henri Cinq, and Infidélité de Lisette.

GUANO FOR ROSES (F. J.).—Two applications of guano on the surface are sufficient for one year, if the plants have been well manured in winter; but your proposed weekly application of guano water is not too much, we have given it as often with good results.

PEGGING DOWN MOSS ROSES (Idem).—The shoots to be pegged down in place of the weak old shoots after they have flowered should, if they interfere with the effect, be pegged down loosely until the blooming is past; then, removing the old shoots, train in their place the new ones, but do not peg down closely until autumn.

ACUCBAS (J. H. Hutchinson).—There is no particular treatment required for a male *Aucuba* in bloom, farther than applying its pollen to the female flowers. We are not aware of a cross between *Aucuba japonica* and *himalaica*. If in bloom at one time, that crossing could easily be tried.

NAMES OF PLANTS (J. Sude).—You were correctly informed. It is popularly known as the Artillery or Pistol plant, the anthers discharging their pollen in miniature explosions. Its botanical name is *Pilea muscosa*. (*John Baker*).—1, *Malvastrum capense*; 2, *Pilea muscosa*. (*Sophia*).—A form of *Asplenium adiantum nigrum*; but not the common English one. (*N. W.*).—1, *Aponogeton distachyon*; 2, *Zenobia floribunda*; 3, *Cassandra calyculata*; 4, *Illicium floridanum*. (*C. Ford*).—1, *Hymnum triquetrum*; 2, *Dicraeum scoparium*; 3, *Hymnum proliferum*; 4, *H. dendroides*. (*A Twelve-years Reader*).—1, *Pernettya mucronata*; 2, *Narcissus incomparabilis*. (*T. Shaw*).—The pieces of fronds sent are nearly all of them insufficient for naming, and we name only six at one time. 3, *Salaginella Martenaii*; 8, *Onychium japonicum*; 10, *Cyrtomium falcatum*; 11, *Nephrolepis exaltata*; 13, *Pteris cretica* (?).

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 14th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 8	30.019	30.007	55	40	48	45½	E.	.00	Foggy; overcast; cloudy and dull; overcast at night.
Mon... 9	29.950	29.798	49	36	49	46	N.E.	.21	Overcast; cold rain with N.E. wind; showery.
Tues. 10	29.805	29.782	56	37	49	46	S.W.	.00	Overcast; overcast, damp and sunless; overcast.
Wed. 11	29.665	29.290	57	42	49	46½	S.	.25	Hazy, overcast; showery, constant rain; wet throughout.
Thurs. 12	29.788	29.673	58	48	49	46	S.W.	.02	Cloudy; fine; overcast at night.
Fri. 13	29.858	29.818	60	30	51	47	S.W.	.02	Densely clouded; fine; slight frost.
Sat. 14	30.068	29.936	55	34	51	47	S.W.	.08	Very fine; heavy showers, 12—1 P.M., hail; very fine at night.
Mean..	29.879	29.758	55.71	38.14	49.43	46.29	..	0.58	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RAILWAY CHARGES FOR POULTRY.

We have at various times adverted to the great trouble and annoyance which exhibitors of poultry suffer from railway charges and railway neglect. It seems strange that any body of men should act so suicidal a part as do the directors of some lines in this country. Possibly all this may be done in ignorance, and the minor officials may be the chief parties to blame, but in any case we can very well understand why many exhibitors should determine on relinquishing a fancy that even if they are successful in prize-taking is often a positive loss to them. Moreover, it is not every individual who likes to have his digestion impeded by the presentation of a "railway bill," that on the face of it looks like an imposition.

We return to this subject again at the present time, because it would seem that the great body of exhibitors appear disposed at any rate to make their grievances known. An Englishman is said always to have some satisfaction in grumbling. Let us hope that some better result than grumbling will attend the present efforts. We are informed that the Poultry Club are intending to bring the difficulty before the various railway companies. Our columns of late have been much occupied with the subject, and, as many of our readers are aware, one of our contributors is endeavouring to find out by application to all the leading exhibitors their views on the subject, and we have already published three lists of exhibitors who are willing to sign a requisition to the various companies; we shall publish another shortly, and we apprehend that when the roll shall have been completed very few of the names of the leading poultry exhibitors will be absent, and, most probably, if absent it will be because the names are attached to the Poultry Club memorial. We cannot ourselves see any objection to an exhibitor signing both memorials; their object is the same, and there ought not to be any rivalry in the matter.

The railway companies themselves would appear to have no regulations at all to guide them. If they had, surely the curious charges complained of by Captain Heaton at the Poultry Club meeting and by Mr. Manning in our columns could hardly happen, and we sincerely trust that this effort may be the means of settling the question and fixing some regular but moderate rate of carriage that shall apply to all lines. There can be no question that these exhibitions very greatly increase the passenger traffic; as some return for this the companies may well afford to carry the specimens at a more reduced rate. We believe that this moderate rate, below the usual parcel rate, both ways, would meet the views of exhibitors more than a "free" return of the unsold poultry, many exhibitors believing that this means their being "free" to wait about at any station for an indefinite time. It is hardly possible that any change can be for the worse.

Our contributor "Y. B. A. Z." will soon have communicated with all the leading exhibitors; and we would remind those whom he may have overlooked, and those who have not yet replied to his communications that they can do so, as his address has been given in our columns.

THE DISQUALIFIED PEN AT WIGTON POULTRY SHOW.

No one regrets more than myself the necessity of your reporter's remarks on my Silver-spangled pen shown at Wigton, and reported in your last impression. I desire to say that I am as entirely ignorant of how the needle got into, or who put it into, the comb as those who saw it pulled out, and am prepared to make an affidavit to that effect. I never knew about the matter till I heard from a friend, who detailed the circumstances under which it was found; but this, even, not until I had found a "disqualified" card, and written to the Secretary to know what any pen of mine was disqualified for, being perfectly assured in my own mind that there was some mistake about the matter. I fetched the hen myself on Tuesday evening at seven o'clock from her run, and put her into a pen with the cock that was going with her, and I put them both into the hamper myself on Wednesday morning, and am positively certain that she was not trimmed in any way for the Show. Until I took her off her perch I did not know which I should send, and I only chose her as I thought she was in capital condition.

How long the needle had been in the comb to me is, therefore, a problem I am unable to solve. I am sorry to see your reporter's concluding remark, as it seems to hint that it had been put in to keep her comb straight. I have repeatedly been to see her since this, to me, unpleasant affair has happened, and I confess I cannot see that her comb droops on any side, and I scarcely think the Judge would deny that the pen was the best even after the needle was withdrawn. Do not misunderstand me: I do not complain of losing the prize under the circumstances, as, of course, the Judge and Committee would not be aware of my ignorance of the needle's presence. —A. K. Ween.

SOUTHERN POULTRY SHOWS.

I AM delighted to see that Mr. Lang, of Redlands, has fallen in so willingly with "WILTSHIRE RECTOR'S" proposal that a poultry show shall be held at Bristol, and has expressed his readiness "to work with all his heart in getting it up." If two or three can be found who will take the matter up with equal energy and determination, there is no reason why we should not have a first-rate show at Bristol. I for one, as a breeder of poultry, will give all my support, and doubtless numbers will come forward from the surrounding counties, to

say nothing of these at a distance, and encourage and help the undertaking. Mr. Lang asks breeders to propose a time which will least clash with other shows. I have been looking through last year's Numbers of "our Journal" and have come to the conclusion that in or about the first week in November would be a very suitable time for holding the Bristol Poultry Exhibition.—A. K. C.

DRAGON PIGEONS.

I AM pleased that my previous remarks upon Dragons and the little controversy between Mr. Percivall and myself have called forth the opinions of some fanciers and questions from others, and may be the means of bringing about a settlement of a subject which would appear to many of your readers of trifling moment, but which is of great importance to the fancy. For this reason I was, in the first instance, desirous of promoting a discussion upon the respective qualities of the two sorts of Dragons under notice, in order that the merits of each might be laid before those of your readers interested, and that these might judge for themselves whether or not it was folly for Mr. Percivall to exclaim "without reason or argument" against white-rumped Dragons, which have long been acknowledged, and ought to be admired, for the superior colour "they unquestionably possess" over those of Mr. Percivall's choice.

Again, Mr. Percivall comes forth without any argument, simply reiterating former declarations without one iota of evidence in support of his fancy, or a word to refute what I have said in favour of the birds he would discard. I do not wish Mr. Percivall to infer, as he does, that because the white-rumped birds form the great majority they should necessarily be the best; nor do I allow that because those of his fancy are so few that such should go in their favour. I ask any fancier to test for himself by placing one of each sort side by side, and I think I can safely say he will agree with my views. It does not require the educated eye of an artist to decide which is the better colour; for, as a rule, the superiority of the white-rumped birds is obvious to the casual observer. I do not feel satisfied to remain a silent reader of such prejudiced notions as those of Mr. Percivall, and by that silence sanction any crotchet or foible until such is acknowledged at the sacrifice of some of the best Dragons that can be bred. Blue Dragons are understood to be white-rumped, it is the exception to obtain them otherwise of a good blue colour, and, therefore, I think it unjustifiable for Mr. Percivall to persist in calling them worthless, and to wish to force his opinions on others, which, instead of making out the points of Dragons more clearly, would only cause the judging of them to be more complicated, and would necessarily lead to discussions as to whether they were white-rumped or not, as there are white-rumped ones, blue-rumped ones, and the various gradations of shades between the two; and as a matter of course, the nearer they approach Mr. Percivall's choice the more dowdy is their colour, and the less attractive and beautiful are they as aviary birds, and consequently it is an essential point against them.

Although Mr. Percivall does not flatter me in some of his observations, it serves his purpose in lieu of argument, and does not offend me. He has, however, given me credit for being wise in withholding my name; which, if that constitutes my wisdom, is a virtue I have no wish to retain. Having no desire to be an anonymous correspondent, I append my name and address to this letter, with the request that it may be published.

Mr. Percivall says, I may be a Dragon breeder, but certainly not a Dragon fancier. Not so certain, I say. The Pigeons I keep (solely for my own hobby or amusement), consist chiefly of Dragons, so Mr. Percivall may term me a breeder, fancier, or anything he likes. He has been bold enough to call me ignorant of what I have not attempted to describe—viz., the properties of a Dragon. As yet I have merely pointed out the difference between the birds under notice, although I flatter myself, my delineation of a good Dragon would be of service to Mr. Percivall, though I should feel it presumptuous in me to describe in your Journal what to many is so well understood. Mr. Percivall says he has for many years been a member of a society for the improvement of every kind of Pigeon. I cannot think the members of that society would say that white-rumped Dragons and Owls are worthless, and ought to be excluded from prizetaking. That birds which for years have so frequently occupied the most prominent places upon the prize lists of our exhibitions, and yet possessing such glaring defects, should have passed the notice of such a society, seems

strange. I know of one pair of white-rumped Dragons which have been shown at most of the exhibitions in England, and have been successful in taking upwards of fifteen prizes, so that they must have been closely scrutinised many times, and most likely have passed through the hands of those whose opinions are valued.

Mr. Percivall has thought proper to so far misconstrue my meaning relating to the black ticks, which I say so often appear upon the upper wing-coverts of the blue-rumped birds, as to call them "Chequers." I think I understand the meaning of chequers, and, had I thought proper to describe the small ticks in the exaggerated sense, I should have used the word Mr. Percivall suggests; but I think my meaning would be understood by those who have had experience with Blue Pigeons. The ticks, or specks of black I allude to, resemble those upon the tail feathers of Pile Game fowls, or the wings and tail of many of the Dun Antwerp Pigeons, and are not proper chequers, but graduated stippling of black from the top portion of the bar downwards; and again I say such are generally to be found upon blue-rumped Pigeons, and the darker the hue the plainer they are to be seen.

In your Number of March 20th a correspondent signing himself "AN AMATEUR" suggests the names of Mr. Hewitt and Mr. Esquilant, whose opinions, "he says," would carry great weight; for my part, I think the more opinions we obtain the better, the majority of which I think would endorse my views. Mr. Percivall selects from "AN AMATEUR'S" suggestion the name of Mr. Esquilant to whom he would refer. Why he omits that of Mr. Hewitt I can only surmise. In my opinion this last-named gentleman has shown himself of keen perception and good judgment when his decisions have come under my notice, and, therefore, I hope we may hear from each of the gentleman named.

I see Mr. Percivall noticed the remarks of "WILTSHIRE RECTOR," and in one particular, singular to say, I agree with Mr. Percivall, when he says that because white-rumped Dragons have been successful at Birmingham that that is no criterion. It does not necessarily follow on that account that they are perfect; but their beauty will recommend them, and they must be acknowledged, and when placed with others, and judged upon their merits, at the discretion of good judges, will be found, if not at the top always, still amongst the winners. As Mr. Percivall appears not to have noticed Mr. Brent's observations, I would recommend him to refer to the Number of March 20th, where that gentleman describes in a few pithy lines what is part and parcel of the true blue colour—viz., "the white rump." Mr. Brent has gained celebrity by his writings on Pigeons, and as I consider his opinion is of importance I take this opportunity of offering him my thanks.

As an ardent admirer of all kinds of Pigeons, and especially Dragons, I ask that those who read this controversy and are called upon to officiate as judges, may not be biased by what Mr. Percivall has said, but that they will exercise their own discretion in the awards they may make.—A DRAGON BREEDER (J. W. LUDLOW, 96, Edward Place, Vauxhall Road, Birmingham).

THE SALISBURY MEETING OF THE BATH AND WEST OF ENGLAND SOCIETY.—It will be seen by an advertisement in another column that, in order to meet the convenience of numerous Exhibitors, the time for entering poultry has been extended to the 1st of May.

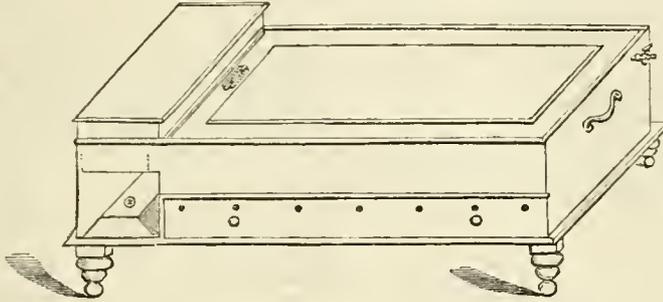
COOKING AN OLD HEN.—The *Massachusetts Ploughman* gives the following directions for "serving up an old hen so that she shall manifest, to mortal palate, all the delicacy and tenderness of youth:—"Just cut her up into joints, taking care to go by the joints so that you do not get in any splinters of bones. Pick up all the bits of meat you have in the house, bones too if there is any meat on them, any odd pieces of ham or bacon, leg or shoulder of mutton, and a slice of salt pork, and cut a few slices of fat bacon and some bread. Take an earthen vessel with an earthen cover, with a bit of a hole in it, the cover, we mean, and put a layer of bread at the bottom of this vessel, then a layer of bacon, and then fill in with all the scraps and joints you happen to have—they must be sweet and clean of course—till the vessel is full. Then fill up the hollows and cracks with water, and tie down the lid. Put it at night in a very warm, not hot oven, and let it stay till morning. Take it out at your leisure and put it in a cool place, and when perfectly

cold, you will eat with gusto either for breakfast, luncheon, dinner, or supper, and you will find it not only tender, but juicy, and delicately flavoured, and highly nutritious. The water that

you put in will have turned into jelly, and the whole will cut like a red-veined marble. There is no way in the world you can work up an old fowl so economically or so splendidly.

BRINDLEY'S INCUBATOR.

This incubator is an oblong wooden case resting on four feet; the apparatus for thirty-six eggs being 2 feet long, 1 foot wide, and 7 inches deep. At the left-hand side, enclosed in wood, is a metal boiler, attached to which is metal tubing, which goes round inside the incubator, between, but not touching, glass. This space between the two glasses forms a chamber for the hot air. In a drawer at the bottom of the incubator the eggs are placed on a tray fitted with spiral springs covered with flannel, one for each egg, and by means of thumb-screws they are pressed so as to lightly touch the lower glass, which glass is to be kept at the heat of a hen's body. The heat is greatest at the top of the eggs. The necessary moisture for the eggs is drawn by the heat above, from water placed in the bottom of the drawer, which is metal. The thermometer is placed between the two glasses, and may be seen, as also may the eggs, without opening the drawer. The lamp is neatly enclosed directly under the boiler, and is easily removed for trimming, which is required twice a-day, and if the best colza oil is used there is little or no smell from it. There is not the slightest danger of any part of the woodwork taking fire.



When putting in the lamp-case, or removing it from under the boiler, do so quickly, otherwise the woodwork may scorch.

The loose flannel cover is for the glass outside, it keeps in much heat. Cover the bottom of the drawer with cold water, say half an inch deep, place the eggs, one on each spring, on the tray over this water, and, when the drawer is shut, screw it up so that the top of the eggs shall lightly touch the lower glass. The eggs do not require sprinkling, the necessary moisture for them is drawn by the heat above from the water below; as this water wastes it should be replenished. Keep the thermometer up to 110°; no harm will be done should it rise or fall a few degrees from this, but a temperature of from 105° to 110° should be maintained as far as possible. If too high, the ventilator opened and the loose flannel cover removed will soon lower it.

The eggs should not be put into the incubator until it has been working several hours, has acquired the proper heat, and

is in working order. Turn them once a-day. In four or five days it may be ascertained whether or not the eggs are birded by their being held before a candle in the dark; if alive, the veins may be seen moving. If it appears certain that they are not birded they should be replaced by others. Eggs may be added any time. The date of putting in should be pencilled on each egg. When the chicks burst the eggs the thumb-screws must be lowered to give them plenty of room, and they should be kept in the incubator a few hours; they require nothing but the requisite warmth for the first twenty-four hours after hatching.

Should the temperature of the incubator by accident fall very low or rise too high, it may not follow that the vitality of the eggs is thereby destroyed; get the heat right again as quickly as possible, and keep the incubator working on. The top may be screwed off when it is required to clean between the glasses.

BEE'S RECOLLECTION.

THE following particulars show the recollection which bees retain of locality after nearly six weeks' absence. On May 12th, 1863, I had two swarms within an hour of one another, both of which settled on a Deodar tree on my lawn, a favourite place, by-the-by, for settling, for two out of three of my swarms. It is my almost invariable rule never to remove swarms to their destined locality until the evening of the day of swarming. This was done, but the next day began with a drenching rain with high and cold winds, such as was prevalent during that unfortunate summer. Some of the bees coming out and, of course, going to the Deodar, were at once chilled with the cold, the hives not being there. This was too much for my philosophy, and I accordingly replaced the swarms where they had pitched. The next day was as bad, and the next not much better, the bees going out a little during gleams of sunshine in the afternoon, when I was absent in the city. The result was, that I was afterwards afraid to remove them to their intended stands, and resolved when the weather settled to send them to a friend's house a mile and a half away, to cause them during a five or six weeks' absence to forget their domicile, and then place them where I originally intended, without causing that puzzling and often loss of bees, which result from removals to short distances. This was done, and though this is not the point of my letter, I may add that the next day, notwithstanding they were a mile and a half removed, I saw ten

or twelve bees hovering round and sticking to the old places showing that at this distance in fine weather bees will find their way back.

In about six weeks' time I had them back again, and then, feeling sure that they must have forgotten where the swarms had pitched, I placed them on the site originally intended. To my utter astonishment, the next morning I saw fifteen or twenty bees again flying round the old places on the Deodar where the swarms had originally settled, this being about 50 feet from where the hives were now located. These bees continued at this off and on all day, and, I believe, never went again to their proper place.

All swarming was long since over with me, so it could not have been from any other hives, and all my bees were at that time busily engaged with the Lime blossoms, so abundant in Blackheath Park and the vicinity.

Having been a bee-keeper for more than a quarter of a century, I like to remember these and other traits of my special favourites, and could give you, also, other proofs of their peculiarities from my own personal experience which might interest you. I am rather an enthusiast upon the subject, but can hear a joke consequent thereon, notwithstanding that I am—A BLACKHEATH'AN.

[We shall be glad to hear again from you.]

IMPROVED FRAME HIVE.

THE suggestion in page 265 respecting bars with projecting ends, is, doubtless, a good one for those who are commencing with bar-and-frame hives; but the alteration would be found exceedingly troublesome to make by those who have already adopted another pattern. Moreover, the projection cannot be used in a bee-house, when it is necessary for the front of the hive to fit closely.

Having experienced the difficulty referred to in handling heavy frames, I have used a couple of square hooks—if the bull may be allowed—that is, the hook simply bent at a right angle, and not returned. This I often find useful when the frames are tightly fastened in, especially in a house where the front of the hive is not easy to reach. Of course, the frame is first loosened, and the hook inserted sideways between the comb is merely used for lifting out.—F. H. WEST.

OUR LETTER BOX.

EGGS NOT HATCHING (S. T. H.).—We fully sympathise with you, after paying 28s. for nineteen eggs, and these having to travel only about thirty miles, you were entitled to expect more than two chickens. At the same time you have no claim against the vendor. He is an honorable man, but, if he had no contrary reason, we should have expected he would have sent you a dozen as a compensation.

LACING ON WINGS OF SPANGLED HAMBROUITS (J. P. F.).—Lacing has been decried because it is difficult to obtain. It should belong to Spangled fowls, and always did. Look at the wings of Silver-spangled Poland. It is effectual in those classes. Every breeder of Spangled birds knows how difficult it is to breed colour into one part of the body and out of the other. It is difficult to obtain the spangled breast and barred wing with a clear tail. We can recollect the time when all had barred wings, but they had not clear tails. Lacing is a serious difficulty, but it is anything rather than a defect.

POULTRY FAILURES (M. C.).—You do well in all things except chickens, and there is no reason why they should fail. We have a dozen Brahma hens with chickens, and they have never done so well as this year. Our loss is not 5 per cent. We are great admirers of the Brahmas for their sitting properties and their maternal virtues. Your feeding is good, but if you can find any miller who will grind your oats into fine flour, without taking anything from it in the shape of bran, you will find it very profitable, more so than whole oats. Indian corn is good for a change, but it does not make good chicken meal. You do not seem to require any other knowledge, as success is a fair test, and you are successful. Let your sitting hens have plenty of room. When they break their eggs it is generally because they are cramped for room; and when they crush the chickens it is because their ribs are too small. We have ours 24 inches each way.

DUCKS LAYING SOFT EGGS (A. C.).—Aylesbury Ducks, like hens, will sometimes lay soft eggs. This arises from the lack of that which forms the shell. In Ducks the care for soft eggs is generally to feed for a few days on oats put in some vessel, with gravel and a sod of growing grass. Cochins often lay very early after hatching their chickens, but seldom at the end of a month. The hen in question must supply the breakfast eggs. The chickens are too young to be left, especially at this season of the year.

BUTTERING EGGS FOR EXPORT (Mrs. Talbot).—We think it would spoil eggs for hatching if they were buttered. That is a process used for keeping them fresh for the table, but it is an unnatural process for hatching, and we follow Nature in these things as nearly as we can. We think eggs might go safely to South America packed in a basket with dry moss, each egg being rolled in it. They should be kept in a cabin, or some place where there is air. Eggs will keep a long time and yet hatch—certainly a month.

DEFICIENCY OF COCKS (S. P.).—You have too many hens for two cocks. You should have at least four. Last month, and earlier in the year, five for your fifty hens would not be too many. Sometimes cocks are reconciled by being placed in pens where they can see each other through wire netting or other open work without being able to get at each other. Our own idea is to let them have their quarrel out, care being taken that they shall not fight to the death. We always adopt that plan. If you object to that, do as follows: Take a long rod 8 or 9 or more feet long; to the end of it tie an empty bag, such as an old pillow-case. When the cocks are sparring, and intent upon it, they will allow you easily to come within reach. Measure your distance, and buffet them right and left with the bag. They will be astonished, and will desist for a minute or two. They will then begin again. Repeat the operation, and after two or three applications a cure will be effected. If the covered runs are to protect the chickens during the night, use them by all means; but if they are for the day, discontinue them. Let the hen be under her rip, but let the chickens have free course through the bars. Choose a dry (if possible), and a somewhat sheltered spot, and if the rats are troublesome place a board in front at night; but you must recollect that chickens want their liberty at daybreak.

GIDDINESS IN FOWLS (B. G. H.).—Your chicken running sideways and turning its head has the "gids," and will never grow up to be a good one. We advise you to kill it, and thus save the food it will eat without making any return. It is the sort of chicken kindly little girls take to as a pet, because it is so funny. If your Cochins were Dorkings or Hambroghs we should say they had roup; but as Cochins are not subject to it we believe it is only a cold, which may be removed by feeding on bread and ale for a day or two.

SPANISH FOWLS (A Mechanic).—You will find plenty of Spanish fowls and eggs advertised in our columns. The Spanish fowls as originally imported had white faces. We have known one cock sold for £80, and two pens containing each a cock and two hens sold at Liverpool for £200. Your garden is large enough for a Spanish run. Eggs hatch well after travelling.

GOOSE LAYING MANY EGGS (B. B.).—If the Goose in question is a Toulouse Goose she will not sit; if she is not, she will. One of our Toulouse Geese last year laid forty-five eggs.

ERECTING A HEN-HOUSE (A Reader).—You may make an excellent house with the space you mention—viz., 6 feet in depth and 18 feet in length. Brickwork is not necessary; boarding will do perfectly well. Let the house be at least 6 feet high; if higher so much the better. Have a wooden, slate, or tile roof. As the length is three times the depth, and as light is very essential, you must have an opening or window at the end, near to the roof—one that can be opened or shut as the season may require. The door should be at one end, the perches within 2 feet of the other, running across the house; the laying-boxes facing the door. The water should not be in the roosting-house. Recollect, the larger the run you can allow your fowls the better they will do, and nothing is so good as grass and shrubs. The flooring of the house should be gravel on earth, the latter well rammed down and the former loose on the surface. The mortar and rubbish may form the foundation of the floor, but there should also be a heap of it in the run. They dust in it, and the hens find the material for the eggshells among it. You will not have room to rear chickens in the smaller space; they should be in the larger place where you propose allowing the fowls a run once a week. Wire netting will make all secure, and the covering at top will depend on the breed you keep. We do not recommend Dorkings for confined spaces. The best breeds are Cochins and Brahmas. These are not wanderers, and will remain contented without any covering at top. Another advantage of those breeds is, that their chickens are hardy and easy to rear. We should advise the purchase of useful birds of either of those breeds, and that you buy some good eggs to put under the hens as fast as they become broody.

AYLESBURY WITH CAROLINA DUCKS (An Inquirer).—There would be no risk of any evil consequences if Carolina and Aylesbury Ducks ran together, but we are bound to tell you it would be incongruous. Aylesbury Ducks are large, heavy, and common-looking; foul feeders, and thriving best in a yard where they forage in search of food. Carolina Ducks do well in a small pond in a flower garden, where they can always be seen and fed, becoming tame pets. The peculiarity of the latter is, they will not make a nest, but will lay their eggs about, taking no note of them unless they are provided with a proper place for nesting, which should be exactly like a small dog-kennel fastened above the water to a pole in the middle of the pond, and having a plank to reach the water. Small ridges of wood must be nailed across this plank to give the Ducks foothold. The back of this kennel should be lower than the front, and there should be a bead to prevent eggs from rolling out. Carolina Ducks are very hardy, as much so as common Wild Ducks. We believe their price varies between 50s. and 70s. per pair. We do not think the eggs are to be had.

GOLDEN PHEASANTS (Idem).—They want no particular management. They will thrive and lay well in a small place. Their food is barley, with a little bread at times to keep them tame, and to attach them to their feeder. There is risk in allowing them to run wild in a garden. Golden Pheasants cost about 60s. per pair. Their eggs are to be purchased, but we do not know the price.

RUSSIAN BANTAMS WITH CRÈVE CŒURS (J. F.).—We do not know the size of the Russian Bantams. If they are larger than the Sebrights, which weigh 17 ozs., and if the Crève Cœurs are small, there is risk. As a rule we do not consider Bantams dangerous among fowls of a large breed.

SILVER HAMBURG EGGS UNFERTILE (Done For).—We believe your suspicion to be correct, and age is the cause. You can easily ascertain by examining some of the eggs that have been under the hen. If they are not impregnated they will be apparently as fresh as when they were laid.

COCHIN-CHINAS NOT LAYING (A. F. W.).—The continual wet is bad for the condition of poultry, and that which takes from their condition interferes with their laying. Feed on barley and good oatmeal, with Indian corn only for a change. We think with finer weather you will have more eggs. We do not understand why the hens should lay about. If they eat their eggs you must lay some hard composition ones about, they will peck at them till they are tired and will give up the habit.

TICKS ON CHICKENS (Idem).—Our experience is that chickens have done well this year. We have not before heard of any ticks about poultry. Wood ashes mixed with black sulphur, nineteen parts of one to one of the other, and small dust of any kind laid about the haunts of chickens, are considered effectual in removing parasites of any kind, as the chickens dust freely in them, and thereby get rid of the parasites. If by "warmly" you mean that you employ artificial heat, discontinue it. It never does any good in the long run.

MANAGING LIGURIAN BRES (A. B. C.).—You must either super your Ligurians or let them swarm. If you decide on the former plan the super should be put on towards the end of this month; if the latter, you had better get a couple of hives made at once, after the pattern of the frame gives you already possess. The probability is that your black colony is defunct, and the Ligurians have been plundering it.

PREVENTING SWARMS ASCENDING (A New Beginner).—We cannot tell you how entirely to prevent the loss of natural swarms. All that can be said is, that with trees and shrubs in the immediate neighbourhood of the apiary they generally cluster in them and submit to be hived. A strict watch should, however, be kept during the swarming season, and we should certainly give chase with the view of recovering an errant swarm, instead of merely watching its departure in solemn silence.

PROSPEROUS BEES (B.).—You can do nothing more to advance the prosperity of your bees. Even feeding may be an evil, if carried to excess, since if all the cells were choked with food the queen could lay no eggs in them, and breeding would be checked, if not entirely stopped. Your bees will fill their hive with comb as soon as they are numerous enough, and then the super may be put on. A bee which is licked by others has probably been soiled with honey or food.

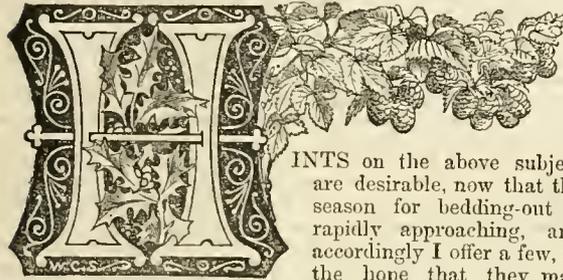
WHICH IS THE BEST BEE HIVE? (Prospera).—All depends on the degree of skill possessed by the apiarian. For those who never advance beyond the wisdom of their forefathers, the old-fashioned bell-shaped straw hive is the best and most convenient, whilst those who go a step farther and put on an occasional super will be contented with the same kind of hive improved by one or more orifices in the top; but for the true bee-master frame hives are far superior to all others.

WEEKLY CALENDAR.

Day of Month		Day of Week	APRIL 24—30, 1866.			Average Temperature near London.			Rain in last 39 days.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
24	TU	Cytisus filipes.	58.3	40.8	49.6	15	48	4	8	47	44	1	33	2	9	114
25	W	St. MARK. PRINCESS LOUIS OF	59.4	37.3	48.3	16	46	4	10	7	49	2	58	2	10	115
26	TH	Dielysia spectabilis. [HESSE BORN.	59.6	35.9	47.8	17	44	4	12	7	53	3	23	3	11	116
27	F	Daviesia angulata.	58.2	35.6	46.9	16	42	4	13	7	57	4	48	3	12	117
28	S	Daviesia juniperina.	60.2	35.6	47.9	16	40	4	15	7	59	5	11	4	13	118
29	SUN	4TH SUNDAY AFTER EASTER.	58.4	37.7	48.0	13	38	4	17	7	1	7	36	4	0	119
30	M	Abelia floribunda.	61.4	39.5	50.5	16	36	4	18	7	1	8	3	5	15	120

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 59.3°; and its night temperature 37.5°. The greatest heat was 81°, on the 23th, 1840; and the lowest cold 18°, on the 29th, 1861. The greatest fall of rain was 1.40 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

SOME HINTS AS TO THE ARRANGEMENT OF FLOWER-BEDS AND BORDERS.



HINTS on the above subject are desirable, now that the season for bedding-out is rapidly approaching, and accordingly I offer a few, in the hope that they may

prove useful to the readers of the Journal.

Any of the following arrangements will look well if the beds are surrounded by grass.

No. 1. Centre, Verbena Velvet Cushion, about 2 feet wide; next, a band of Geranium Manglesii, 2 feet wide, with the flowers kept on; this Geranium, however, will require to be kept pegged, so that it may well cover the space of ground allotted to it; between it and the grass put an edging, 1 foot wide, of Viola cornuta. This would make a magnificent bed.

No. 2. Centre, Iresine Herbstii; 2nd row, Viola cornuta; 3rd row, Cerastium tomentosum. The centre in this arrangement should be 2 or 3 feet wide, and each of the other rows about 15 or 16 inches in width.

No. 3. Centre, Purple King Verbena; 2nd row, Geranium Bijou, with the flowers picked off; 3rd row, Lobelia speciosa; 4th row, Arabis lucida variegata.

No. 4. Centre, Geranium Flower of the Day, with the flowers left on; this should be 3 feet wide. Next to it plant 2 feet of Verbena General Lee, then 18 inches of Viola cornuta, finishing off next the grass with a margin, a foot wide, of Geranium Golden Fleece.

No. 5. Centre, Centaurea candidissima; 2nd row, Colcus Verschaffelti; 3rd row, Cerastium Biebersteini.

No. 6. Centre, Mrs. Pollock Geranium; 2nd row, Lobelia speciosa; 3rd row, Cerastium tomentosum. This should be kept pinched-in very closely, so as to form a very close and compact edging.

No. 7. Centre, Amaranthus melancholicus ruber, 3 or 4 feet wide; next to this a row of Golden Fleece or Cloth of Gold Geranium, 2 feet 6 inches wide; then a band of Lobelia speciosa, 18 inches wide; finishing off with a nine-inch margin of Variegated Alyssum.

No. 8. Centre, Verbena Ariosto Improved; 2nd row, Geranium Christine; 3rd row, Verbena Ruby King.

No. 9. Verbena General Grant. This is a very large pink flower, of fine shape and substance; next row, Viola cornuta. This was one of the finest beds at Oulton last summer.

No. 10. Centre, Geranium Cybister; 2nd row, Verbena Mrs. Holford, or Snowflake; 3rd row, Amaranthus melancholicus ruber.

No. 11. Centre, Calceolaria Brown Prince of Orange.

This should be planted pretty closely together, some small pieces of wood being stuck around each plant to prevent its being broken by the wind; if nicely put in the sticks will support the plants all through the summer, and the foliage will soon hide them. A good margin, 2 feet wide, of Mimulus eprensus would look well, and if the bed is situated in a shady part of the garden it will not easily be surpassed for beauty all through the summer months.

No. 12. Centre, Calceolaria Victor Emmanuel; 2nd row, Geranium Flower of the Day; 3rd row, Verbena Claret Queen; 4th row, Lobelia Paxtoniana.

No. 13. Centre, Geranium Christine; 2nd row, Geranium Spread Eagle; 3rd row, Geranium Queen of Queens.

No. 14. Centre, Geranium Bijou; 2nd row, Purple King; 3rd row, Golden Fleece.

No. 15. Centre, large bed, twelve large plants of Canna discolor, covering a space of 4 or 5 feet; next a band of Cineraria maritima, 3 feet wide; then a two-foot band of Iresine Herbstii; finishing off with a margin, 1 foot wide, of Viola cornuta.

No. 16. Large bed. Centre, seven good plants of Humea elegans; these occupy 6 feet, let the tallest and best plant be put in the centre, and plant the other six in a circle round it; then plant Verbena Maonetti Princess Victoria between the Humeas, and allow it to cover the whole surface of the bed between them, allowing it to extend about 9 inches or a foot outside of the circle formed by their stems. Next put a two-feet-six-inch band of the true Lobelia speciosa, dotting this band alternately with two rows of Cloth of Gold or Golden Fleece Geranium about 18 inches apart. These, however, should be very nicely-shaped little plants, and must not be allowed to grow too large; they can be easily kept within their proper bounds by frequently pinching them in. Finish with a good margin of Cerastium tomentosum, a foot wide, next the grass. This would be a magnificent bed.

No. 17. If it is desirable to have a pair of large circular beds similar to No. 16, the centre of 17 should be planted the same; but the two-feet-six-inch margin, instead of being planted with Lobelia speciosa, may be planted with Cerastium, and dotted with neat little plants of Iresine Herbstii or Colcus Verschaffelti, using Lobelia speciosa for the outer foot margin.

No. 18. If Nos. 16 and 17 form a sort of triangle with No. 18, the latter should be planted as follows:—Use three good Humeas for the centre, fill up the space between them with Verbena Velvet Cushion, let 6 feet of the centre be covered with Verbena Velvet Cushion, using a row of Fuchsia Meteor outside the Humeas. These should be kept nicely pinched in, so that they may form handsome-shaped plants, and they must be planted alternately. Next plant 2 feet 6 inches of Geranium Manglesii, allowing the flowers to remain on, and finishing off with a foot margin of Viola cornuta. The effect of these three beds planted and situated as above described would be very fine.

No. 19. A bed planted with Lobelia speciosa, and dotted with nice little plants of Fuchsia Pillar of Gold, would look well. This bed may be improved by edging it with Lobelia Snowflake.

No. 20. Centre, Stella Geranium; 2nd row, Calceolaria Anrea floribunda, with an edging of Lobelia speciosa, would look well.

No. 21. An entire bed of Mrs. Pollock Geranium, with a simple edging of Viola cornuta, would be very effective.

No. 22. A bed of Lobelia speciosa, margined with Lonicera aureo-reticulata, would also look well.

No. 23. A mixed bed of Verbenas planted indiscriminately is always very effective.

No. 24. Mignonette and Intermediate Stocks, with a margin of Jenny Lind Stock next the grass, are always looked upon with great interest by almost every one having a taste for simplicity and sweetness.

No. 25. A bed filled with some of the choice hybrid Pyrethrums, Dianthus, Pansies, Mignonette, and Carnations, is always very interesting and sweet.

No. 26. Nothing is more beautiful nor more highly appreciated than a good bed of Clove Carnations.

No. 27. Tropæolum Elegans makes a good bed edged with Mentha variegata.

28. Verbena Scarlet Cushion. This will produce one of the most dazzling effects that can be imagined. For small beds or front rows in a ribbon-border this is the finest Verbena ever brought before the public, offering the greatest depth of colour and substance of flower. No one would think that a plant of so dwarf a habit could produce such wonderful trusses of bloom in such profusion and of such substance. It is one of my latest productions, and belongs to a race of hybrid Verbenas originated by me, and which, I believe, are destined to supersede the greater portion of Verbenas at present such favourites for bedding-purposes.—J. WILLS.

(To be continued.)

CULTURE OF VINES IN POTS.

(Continued from page 275.)

FRUITING.—To have fruit ripe in March and April, forcing should be commenced in the middle of October; to have it in April and May, in the middle of November; to have it in May and June, in the middle of December; to furnish ripe fruit in June and July the Vines should be started in January, and in February for the same in July and August. The Vines not started until March, and only assisted by a little fire heat in damp, cold periods, will afford fruit in August and September; whilst for fruit to ripen in the latter month and to hang till Christmas, the Vines should not have any forcing, but be allowed to come on in a cool house, employing a little fire heat in autumn only, to dispel damp and assist ripening. For fruiting at the first two periods the canes should have the wood ripe—brown and hard—by the beginning of August, and the leaves should be off, or be in a fit state to be pulled off, by the end of the month. The best Vines for early crops are those two years from the eye. For forcing in and after December, those from eyes of the current or previous year will do if of sufficient strength, the eyes plump and round, and the wood brown and hard.

PRUNING.—Considering that the best eyes are invariably situated at the upper part of the cane, and that the eyes for a foot or more at bottom do not generally show fruit, it is well not to reduce the canes too much. I allow from a foot to 18 inches of the lower part of the cane to go for nothing, leaving 5 or 6 feet of sound, well-ripened, plump-eyed cane above that, and thus reduce the canes to 7 feet in length, a few inches more or less. On that length of cane there will be a sufficient number of good eyes to give as much fruit as the Vines will carry. If the Vines are to be trained to the roof, the length of cane required to reach the roof must be counted as non-producing, and there should then be a length of bearing cane which need not exceed 7 feet, nor be less than 5 feet. The cane should be reduced to the length required for early forcing as soon after the leaves become ripe as practicable, for though it may do to pull off the leaves when they become yellow, to prune, and to force the Vines at once, still they will not be so liable to bleed, and they will do better if allowed a rest. It is not desirable to commence forcing the Vines until they have had at least six weeks' rest; thus, for starting in October the canes should be denuded of leaves and pruned in the end of August; for starting in November, by the end of September; and for starting in December, in the end of October or early in November. For starting in January prune in the end of November or early in December, and for starting in February prune about the middle

of December, and Vines for later crops by the beginning of January.

The laterals should have been removed when the vigour of the Vine has been controlled by lessening the supply of water, and when the ripening of the wood warrants it. In no case ought they to be left on until the time of pruning, for their removal at an earlier period is essential to the ripening of the cane, and left on until the time of pruning, their removal then is only making cuts that may bleed, and this close to every eye along the cane. Bleeding may not induce a bad breaking of the eyes, but it does materially weaken the strength of the shoots.

Though I would always have the canes trained 16 inches from the glass, it is not always practicable nor desirable; but I am convinced that Vines never do so well as when trained to the roof with the shoots producing fruit carried to the right and left of the rod; their ends, or where the fruit is situated, being 3 inches nearer the glass than the rod. Nevertheless, the canes are sometimes, I might say commonly, coiled round stakes from three to five in number, put in round the pot, and these may be 2½ or 3 feet out of the soil, and be so far thrust in as to be firm. The stakes should therefore be 3½ or 4 feet in length. The canes are coiled round the outside of the stakes and fastened thereto, care being taken not to twist or wrench them, otherwise they will assuredly bleed. The only merit this system may have, at least the only one I ever observed, is that the eyes break well from bottom to top. The best bunches are those at the upper part of the coil, these receiving the most direct light. The canes for coiling should not be less than 7 feet, nor more than 9 feet in length. Sometimes, but rarely, the canes are trained upright, and the side shoots tied to side stakes put in for the purpose. The canes in this system are never suffered to become so long as those trained to a roof, but are kept stopped to 3 or 5 feet, depending on the laterals for the strength of the rod. Beyond removing the laterals, the pruning is confined to cutting away the stoppings at the upper part down to a good eye.

The Vines being pruned and in their fruiting-pots, the drainage should be examined, and if not good it must be rectified. If not in their fruiting-pots the Vines should be put into them at once, loosening the roots a little around the outside of the ball, but not to any great extent. If not potted, remove as much of the surface soil as can be done without injuring the roots, and replace it with fresh. I find turves, cut 2 inches thick, and laid up in alternate layers with sheep's droppings, an inch thick between each layer of turves, form an excellent top-dressing after having lain twelve months and been turned over twice. The compost previously advised for the last shift will answer admirably, adding to it one-sixth its bulk of bone-dust. As abundance of water will be required, the drainage must be good. After the Vines have been pruned the soil should be kept dry, but not dust dry, and as cool as possible—merely protected from frost. A few degrees of frost will do the canes no harm; but the pots must be protected by a covering of hay or dry litter in frosty weather.

FORCING.—If the Vines have been fresh potted it is essential for their well-doing that they have the benefit of a mild hot-bed of well-fermented dung or leaves, in which the pots can be plunged to the rim. Its temperature should not exceed 70°, nor be less than 65°. Where a bed of leaves or well-fermented dung can be made, whether the Vines have been repotted or not, I would strongly advise the pots being plunged in it at least two-thirds their depth for a fortnight or three weeks, by which time the heat will have declined, but not until the roots have been excited and become active. With a good root-action there will be no difficulty in making the eyes break freely and strongly in the dull autumn and winter months. The pots may remain plunged in the bed of fermenting materials, and the roots striking into it will contribute to the vigour of the Vines. If the bed sink considerably at the end of a fortnight, it may be raised by the addition of fresh fermenting materials, so as to bring the pots to the required distance from the glass. If rooting into the bed is not desired, the pots must be removed before that takes place, and the heat of the bed should be so reduced as to be equal to the temperature of the house. The top heat, whilst the pots are plunged in the hotbed, should for a fortnight not exceed 40° from fire heat. This fortnight is over and above that usually allowed.

The house for the reception of the Vines should be thoroughly cleaned, the glass washed with water, and the woodwork with soft soap and water, taking care to keep it off the glass, the walls whitewashed, and the flues swept and put in good order. A good limewashing of the flues is excellent for stopping up

cracks. The pots having been placed in the position they are destined to occupy, each cane should be tied to the rafter at the point immediately over the pot, and there only, the cane being allowed to fall from that point, the end on a level with the rim of the pot. If it will not do this of its own accord, or through its weight, it must be fastened thus low by a stone at the end. This will cause the eyes at the bottom of the cane to break well, raising or lowering the cane as the eyes seem disposed to break at the lower or upper part. The main point is to secure their breaking equally well from top to bottom. If trained to the rafter at once the canes will only break half a dozen eyes at the upper part, and the highest of these will be the strongest, and they will be so, even after measures have been taken to prevent it. When the eyes have broken well the rod should be fastened to the rafter.

TEMPERATURE.—To start Vines in autumn a higher temperature is required than in spring. For the first fortnight the temperature should, therefore, be 45° to begin with, increasing to 50° at night by the end of that time, and in another fortnight it should be gradually increased to 55° at night. By the end of the third fortnight the thermometer should read 60° from fire heat at night, and this should be the maximum night temperature until the Vines are in flower, when it should be increased to 65° at night. The night temperatures are to be counted from the readings of the thermometer at daybreak, when the minimum is attained. From that time the temperature should increase gradually until 1 P.M., and it should then be 5° higher than the night temperature on dull days, 10° on those which are cloudy with clear intervals, and from 15° to 20° on bright days. After the fruit is set the night temperature may be 65°, and not less than 60°, though it is well to have it 5° lower, rather than 5° higher, than the necessary night temperature. An excess of 5° in the night temperature will do more harm than 5° too little. The day temperature after the leaves are fully formed may be allowed to rise to 85° or 90° on clear days, these extremes of temperature being from sun, and not promoted by increased fire heat. When the Grapes change colour the night temperature may fall 5°, or be 60°; they will colour much better in that than in a higher temperature. The Grapes fully ripe, a lower degree of heat will keep them more fresh and brisk in flavour; the temperature may, therefore, be 55°, or as low as 50° by night.

ATMOSPHERIC MOISTURE.—At the shutting-up of the house on starting the Vines, they should be syringed morning and evening with soft or rain water always of the temperature of the house, until they are in leaf, when, if the weather be cold and dull, they should not be syringed more than once a-day, and that in the morning; but if the day be clear so that air can be admitted, then they should be syringed in the morning by 9 A.M. (I am speaking of winter, from November to March), and again in the afternoon at the time of closing the house. In addition to syringing the Vines, the floors, walls, and those parts of the flues which are not very hot, should be kept moist by wetting them in the morning, at noon, and in the evening, and this must be continued until the Grapes change colour. If the day be dull, then a thorough wetting of the paths, walls, and other available surfaces will be ample provision for keeping the air moist; and this should be done in the morning or early in the afternoon. It will be well on such days to dispense with the syringe, but whenever the weather is mild and the days clear, then the syringe must be used twice a-day until the Vines are in flower, then discontinue its use as regards the Vines, but still keep the house moist by wetting the floors, walls, &c. When the flowering is over syringe twice daily—in the morning and at the time of shutting up the house, or very soon afterwards. The water should be directed at the foliage, so as to strike upon it like a brisk shower of rain, and it will fall upon the bunches like a refreshing shower. It must not be directed against the bunches so as to strike them on the under side, or upwards, for that injures the bloom, but coming down upon them it does not. The scorching of Vine leaves is often attributed to syringing the foliage, but I have practised this for many years, using clear rain water. I have no attacks of thrips or red spider, and I can recommend gently syringing the foliage at all times, except when the Vines are in flower, and after the Grapes have changed colour for ripening. Heavy syringings seldom given, like heavy rains, are not desirable; they break and injure the foliage, and it is better not to syringe at all than do this.

After the Grapes change colour leave off the syringing, but keep the floors and walls moist so that the berries may swell well, diminishing the supply of moisture, however, so as to

discontinue it altogether by the time the Grapes are ripe, after which keep the atmosphere dry, no water being allowable if the Grapes are expected to hang.

WATERING.—At starting the soil should be no more than moist, and clear water will do until the eyes have broken, and for a time until the Vines are in leaf, then more copious supplies should be given—thorough wettings, and not dribbles. Weak liquid manure may be applied once a-week. No water should be afforded until the soil has become so dry as to render a thorough watering necessary—one that will reach the bottom of the pots; but it will not do to wait until the leaves flag. When the Vines are in full leaf they will require thorough waterings daily; vigorous Vines once, twice, or thrice, according to the weather. Liquid manure may be applied twice or thrice a-week in not too strong but yet in good doses, for though strong ones are injurious, very weak and frequent applications do not seem to do much good. A most excellent liquid manure for pot Vines is made by dissolving a peck of sheep's-dung in thirty gallons of water; let it stand half a-day, then stir it up well, and after it has been allowed to stand half a day more, stir well up again, and then strain through a coarse bag or cloth. One pound and a half of Peruvian guano to thirty gallons of water, and treated in the same manner, will form an excellent liquid manure. A good watering with either once or twice a-week will be found more efficient than frequent waterings with weaker solutions.

Copious waterings are to be continued until the fruit is ripe, when water is only to be given in sufficient quantity to maintain the foliage and fruit fresh. All water used should be heated to the mean temperature of the place in which the Vines are grown—for instance, if the temperature by day be 75°, and that of the night be 60°, the water should have a temperature of 67° or 68°.—G. ABBEY.

(To be continued.)

THE MANETTI STOCK FOR ROSES.

In compliance with the wishes of "COUNTRY CURATE" (page 253), I will join the mite of my contribution with those of Mr. Kent, and others. I am amused with his description of his shallow soil. He describes it as not being more than from 2½ to 3 feet deep. I have no such depth here. At my future residence at Okeford Fitzpaine, I shall have a strong rich soil 3 or 4 feet deep. I dare say I shall have to learn and unlearn much. I should say from his description of the dying of his fruit trees, that it is occasioned by iron in the land, the very land for the British Queen Strawberry. I recommend him to keep the perpendicular roots cut back, and to encourage the horizontal roots. As his soil is strong, it will cause strong succulent Rose wood on the Manetti stock, and he will do well to root-prune, or remove the Roses annually, and prune the roots tolerably severely. Perhaps I shall have to do the same. If he can grow Broccoli and Cabbages to perfection, he ought to be able to grow Roses on either the Manetti or the Briar.

As regards budding the Manetti stock, he may bud it as early, or late, as the stock will run. Early in the year the bud need not be fully developed; but late in the year, both for Briar and Manetti stocks, I think a full, ripe bud would be more likely to stand. In the sultry season much depends on the quickness with which the operation is performed, and also on the "tie." A bud will fail from opposite causes—from being tied too tightly, or not tightly enough to exclude the air. I do not practise raising Manetti stocks, nor do I bud many. I put the novelties on Briars, because it is more agreeable.

I believe that Manetti cuttings should be about 10 inches long, with a leaf at the top, and that one-half should be buried, and the ground trodden tightly. September is the best time for striking cuttings, because the earth is then hot, and the air is cold. I saw in September, 1860, at Mr. Keynes's, a quarter of Manetti for budding, consisting of, probably, 10,000 stocks. Not one in a hundred had failed. They were planted in September, 1859, and when I saw them they were strong trees, nearly up to my chest, with wood as strong as one of my fingers. As "COUNTRY CURATE'S" land is strong, and probably the Shropshire air in winter is cold, he would do well to scatter leaves amidst the slips, or horse-litter, or straw, all of which are excellent "frigi domos." I know two good propagators of Manetti Roses. One plants the slips in a shallow trench, and the other on the flat. They both bud from 2 to 4 inches above the radius of the roots. I recommend "COUNTRY CURATE," if he bud in either fashion, and wish to protect his buds, to put

on leaves or litter before he returns the earth against the stock and bud. When he cuts away the stock, and the shoot grows, he may then close the soil carefully against the shoot, covering the point of union at least 2 inches. Nine inches from slip to slip, and 2 feet between the rows, are sufficient room for simple propagation. The closer the plants are together the better they grow in hot, dry weather. In the autumn they can be removed.

As regards the scarcity of the Manetti stock, I believe that to be a fact. Some years back Mr. Cranston told me, "I have 20,000 Manetti Roses. I want 100,000 stocks. If I had them budded I could sell them." In these parts Manetti Roses have entirely superseded the Briar Roses. I hear from Mr. Taylor, of Fencote, Yorkshire, who lives in the fine vale of Mowbray, that the Manetti Roses beat the Briar Roses. Of course, I know that the Briar fails oftentimes from persons being ignorant of its requirements, and that in first-rate Briar land. The same may be said of Manetti Rose failures. I believe, at present, there are very few real rosarians. The fact is, they are general florists, and take care of nothing. Their floral establishment is a "curiosity shop." For strong, deep, muctuous, well-drained clays, and rich deep loams, the Briar is still a first-rate stock. For careless and ignorant people, in any kind of land, the Manetti Roses are the best, for if they are free growers they will make a better fight against ignorance, neglect, and the various shocks of time.

I have no prejudices on any subject. My future garden is suited to Briar Roses, and I have just planted 120 stocks. In autumn my Manetti Roses, Briar Roses, and Roses on their own roots, will be moved into that land, and, of course, I do not expect my experience to remain exactly the same; but, whatever the alteration may be, I shall make it public.

I would advise all the readers of this Journal to keep their stocks well watered before budding, if the weather is hot. Then the hotter the weather is (I tie a leaf over the bud) the quicker is the union. Early in the morning, or in the evening, in hot weather, is the best time. I sometimes after budding pour a little water over the bud. I budded my Briars this season in intense heat, and hardly any failed. I think people cut the slits for the reception of the bud unnecessarily long. Half an inch is long enough.—W. F. RADCLIFFE, *Tarrant Rushton*.

THE COILING OF VINES AGAIN.

I HAVE been interested with the recent discussions on the coiling of Vines. When two such mighty gladiators as Mr. Rivers and Mr. Thomson cross swords it must be on some important matter, and some important facts must be elicited in their discussions. One scarcely knows which the more to admire, the home thrust of the one or the skilful parry of the other. There is a possibility of both being right, and I as an on-looker think so. In offering an opinion, however, I know how dangerous it is for pigmies to interfere in the battles of cranes for fear of utter annihilation, or at least a fillip of chastisement; and a young practitioner of a score years' standing ought to think before indulging an opinion, lest a ponderous piece of experience of four score, with its accumulated inertia, should send him with one bound back to begin a second novitiate; but fools sometimes step in where angels fear to tread, and I do so on the strength of one piece of experience which I have to produce, since the opinions of others seem to be invited.

Last year, in February, I had ten excellent pot Vines left of different sorts, with canes 6 or 7 feet long, in 10-inch pots, with fine plump eyes on the 3 feet at top. I determined to have them fruited to stand on the table: so the pots were plunged in a spent bark-bed near the glass, the rims just covered, and about 3 feet of the stems laid down on the surface of the tan, and just covered over for the sole purpose of hiding that part of the stem and pot. The top 3 feet was passed through the hole of a six-inch pot, which was made to stand on the surface of the tan, the pot filled with soil, a stake with cross pieces applied to the Vine to keep it upright, and so the Vines were started. Throughout the summer many were cheated into the idea that the Vines were growing entirely in the six-inch pots until undeceived. The Vines broke well, and showed well for fruit, and all went well until about the second swelling, when away went the Vines into strong growth, the berries ceased to swell satisfactorily, and they were long in ripening; in fact, they became useless for our purpose, they continued to grow so determinately and so gross. They were, however, cut over at the surface of the bed, and removed with

the small pots. The 10-inch pots, with the 3 feet of layered stem, were left in the bed until this spring, when, on removing them, the cause of the gross growth of last year, though well known, was doubly apparent. The whole length of the stems was found to be densely fringed with roots striking horizontally into the old tan, and when drawn out resembled immense centipede; the old roots in the pots did not seem to have made any further progress, and really seemed as if they had been dormant. I think when these new roots from the layered stem came into action in their unlimited pasturage, that then the Vines started into woody growth, and the old and fruit-giving roots were superseded, and the successful finishing of the fruit completely frustrated.

Now, although the layering of the Vine in the tan may at first sight seem analogous to the coiling of the Vine in a pot, still the result might have been different. Had the Vines been merely coiled round the surface of the large pot they would have rooted centipede fashion, but would have only had the original potful of soil to root and feed in; still I should be shy to allow the new roots to interfere with the action of the old in perfecting the crop of fruit. This is, however, the point where it will be interesting to know the result of Mr. Rivers's experiment.

In my case the Vines rooted freely all along the stem, but then they were only just covered with the tan, and I am satisfied that they would not have done so if covered 8 or 10 inches. I think there is no doubt but the contact with the influence of the atmosphere was the cause of their rooting so profusely. It is often seen in striking Roses or Geraniums, or even Willows, that the part in the soil may die or damp off, but a whorl of roots is produced at the surface, and this invariably happens when the soil is too wet or close, so as to exclude the air; heat has, apparently, not by any means so much to do with the matter.

I am interested in this discussion, as, at the opening of it, I had just laid down some three-year-old Vines across an inside border from back to front to fill up some vacancies, but merely pegging them on the surface. They are making roots freely, and the Vines are growing strong; I fear I shall not have well-finished fruit from them, but that I anticipate.—A PROVINCIAL.

ROYAL HORTICULTURAL SOCIETY.

APRIL 17TH.

FLORAL COMMITTEE.—Mr. Mordell, gardener to J. C. Pickersgill, Esq., exhibited two plants of *Kempferia ovalifolia* noticed last week; and seedlings of *Myosotis* from Messrs. Hange & Schmidt were again placed before the Committee, but not in a condition to form any idea of their merits. Mr. Hopwood, Cheltenham, sent two seedling *Cinerarias*—a white one, named *Virgin Queen*, and *Chancellor*, a rosy purple. Mr. Williams, Finchley, exhibited two neatly-arranged baskets containing cut flowers of two seedling *Tropæolums*. Attraction, if of good and dwarf habit, is a very promising flower, deep yellow with scarlet markings at the base of the petals; *Beauty*, the other was a pale yellow variety. A special certificate was awarded for the simple, yet pretty, arrangement of the flowers.

Messrs. Veitch sent a very interesting collection of plants containing Orchids, Azaleas, Rhododendrons, Anthuriums, &c., which received a special certificate. The Orchids were particularly fine. Among them were some very superb specimens of *Trichopilia suavis*, *T. snavis* *superba*, and *T. crispata*. The Committee recommended these Orchids as worthy of the Lindley Medal, which was granted them by the Council. In the collection of plants we noticed a very beautiful hardy Japanese shrub, *Raphiolepis ovata*. It had been before the Committee when first introduced, and received a label of commendation. Now that it has been better grown it proves itself to be a first-class plant; it has not been seen before in such perfection. The white spikes of its sweetly-scented flowers make it very attractive; the foliage is dark green. This is a plant which must find its way into every garden as soon as it is known. Mr. Bull sent several interesting plants. Among them were *Aspidistra Sieboldi*, a hardy variegated-foliaged plant, the same as *Aspidistra lorida variegata*; *Camellia tricolor imbricata plena*, a small, pretty, striped flower; *Nidularia Pinellii*, very similar to other *Nidularias*; *Pitcairnia tabulariformis*; and *Psychotria macrocephala*. The last-named plant was much admired. Some doubt, however, existed as to its having received any previous award. Should it not have done so, it will be duly noticed at the next meeting. It is a very beautiful plant, sending up large masses of pure white flowers from amidst its large green leaves. Mr. Salter, Hammersmith, sent a very beautiful seedling *Camellia*, *Princess Mary*, flower bright red, excellent form, and fine dark foliage. For this a first-class certificate was awarded. Mr. J. Cox, gardener to W. Wells, Esq., Redleaf, brought cut specimens of *Rhododendron Ancklandii* and *R. campylocarpum*, one of the Sikkim varieties, an early-flowering kind, with pale lilac flowers. A special certificate was awarded it.

Mr. Edmonds, gardener to the Dowager Duchess of Sutherland,

Chiswick House, brought some magnificent cut flowers of *Camellia reticulata* and other varieties for distribution. A special certificate was awarded them. Mr. Green, gardener to W. W. Saunders, Esq., exhibited several curious plants. Among them were *Scuticaria Steelii*, a pretty Orchid with very long, narrow, rush-like foliage; *Amorphophallus papillosus*, and *Peperomia* species, of which the name at present is not known. This received a first-class certificate. Mr. Picher, gardener to S. Rucker, Esq., brought cut specimens of *Odontoglossum Pescatorei*, most superb; also, *Schomburgkia tibicinis*, and beautiful blooms of *Cattleya Skinneri*. A special certificate was awarded for this exhibition. Several specimens were sent from the Society's gardens. Two large plants of the Persian Lilae, in full flower, received a special certificate. Mr. Barron brought two large boxes of cut *Camellia* flowers, from plants growing out of doors under a north wall at the Chiswick Gardens. The flowers were particularly perfect and well-coloured, and proved very acceptable to the ladies after the meeting was over.

FRUIT COMMITTEE.—G. F. Wilson, Esq., F.R.S., in the chair. On this occasion Mr. R. Ruffett, gardener to Viscountess Palmerston, Brockett Hall, received a first-class certificate for three dishes of Apples in a most excellent state of preservation. They consisted of Mickleham Pearmain, Scarlet Nonpareil, large and fine, and Cox's Orange Pippin. They had been kept on open wooden trellises in a low, lean-to, slate-roofed house, rather damp, through which a current of air was constantly passing from ventilating-openings to an air-shaft in the roof. The seedling Apple raised by Mr. Balchin, of Dorking, and which received a first-class certificate at the last meeting, was again produced, and it was named by the Committee Balchin's Pearmain. In addition to the above, a dish of *Æsopus Spitzberg* Apple came from T. Hall Bailey, Esq., Leigh; and from G. Blenkins, Esq., Warwick Square, the fruit sold in Covent Garden under the name of "Japonicas." They were stated to be the produce of the *Zizyphus vulgaris*, cultivated in the south of France, and other parts on the shores of the Mediterranean, from the fruit of which the jujubes of the shops are made. It was, therefore, concluded that the fruit sold in the market as being from China, did not come from there, and had nothing to do with Japan.

FORTNIGHTLY MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. After the awards of the Committees had been announced, the Rev. M. J. Berkeley said, as Mr. Bateman was present, he would leave to him that which constituted so interesting a part of the display—the Orchids. With reference to *Aspidistra Sieboldi*, it was doubtful whether the variegation would remain permanent, as green leaves were occasionally thrown up. The genus to which it belonged was a curious one, with peculiar flowers, having a stigma very closely resembling a common Mushroom. Of *Cinnamomum* species, it was remarked that it might prove useful to hybridise with, on account of the fragrance of its flowers; but *Cinnamomum* were a class of plants not popular with cultivators. *Nidularia Pinellii* closely allied to the Pine Apple, and *Pitcairnia tubuliformis*, both of which were exhibited by Mr. Bull, having been mentioned, *Psychotria macrocephala*, also from the same, came under notice, and Mr. Berkeley said he did not think any *Psychotria* had flowers like the plant exhibited, for they bore more resemblance to those of a *Rudaea*. The genus *Psychotria* was closely allied to *Coffea*. One species (*P. emetica*) was used for the same purpose as *ipecauanha*, to which, however, it was inferior, and another, *P. noxia*, was employed in Brazil as a poison for mice and rats. At the previous meeting *Rhododendron Griffithii* had been exhibited, and it was then stated that there existed a close resemblance between it and *R. Aucklandii*. There was this difference, however, as would be seen by the flower of *Aucklandii* before the meeting, that *Griffithii* had a more tubular flower than *Aucklandii*, the limb not being so much expanded. Attention was next directed to the *Camellia* blooms from Mr. Edmonds, and the Society's gardens at Chiswick. The latter were the produce of three plants of an old variety called the Middlemiss Red, which, being very large, were some years ago, at Mr. Fortune's suggestion, planted on the north side of a wall, that position being chosen because *Camellias*, notwithstanding their hardness, frequently suffer from the direct rays of the sun. This proceeding was attended with such success, that the plants now present a magnificent appearance. The male catkins of *Wellingtonia gigantea* from Mr. Cox, of Redleaf, were then adverted to, and Mr. Berkeley reminded his hearers that a few weeks ago he had brought with him specimens from the Marquis of Huntly's, and which were believed to have been the first male catkins of the *Wellingtonia* seen in England. Mr. Berkeley next called attention to *Peziza lanuginosa*, a species never recorded as British till recently. It had, however, been discovered by Mrs. Sumner, and he had called it *Samoeriana*; but Mr. Edmonds had brought a basket of it to the meeting, it being found by hundreds under Cedar trees in the grounds at Chiswick House, where it grows like Truffles under the ground, and bursts forth with great force. Mention had been made at the previous meeting of an experiment being made to grow Truffles, and another had been set on foot with a view to the cultivation of other esculent fungi. In connection with this subject it was remarked that spawn of a Mushroom said to be much superior to the common kind, had been imported from Swan River, and the attempt had been made to cultivate it by Mr. Henderson, gardener to Lord Fitzwilliam, but in consequence of the long voyage the spawn had lost its vegetative power. Endeavours, how-

ever, would be made to procure what appeared to be so valuable a variety. Although it was generally supposed that in Mushroom-beds but one species was to be found, this was not the case, for not merely were there varieties of that species, but species belonging to other genera. It was often the case, that where Mushrooms succeeded at first, they afterwards failed, through being attacked by a parasite analogous to the caterpillar fungus of New Zealand. The production of Mushrooms from spawn had been used as an argument in favour of spontaneous generation, but like all others in support of that theory, it fell to the ground; for though spawn bricks were prepared from the droppings of the horse and other animals, according to various receipts, yet the seeds, to speak familiarly, of the Mushroom, had passed through the body of the animal. The municipal authorities of Paris only allowed three kinds of fungi to be sold in the markets of Paris—viz., the *Agaricus campestris*, Truffles, and the Morel; but many erroneous notions prevail as to the number of edible fungi, for, after all, the poisonous species are few in comparison to those which are not so. Hence it is desirable that information should be more generally diffused as to the latter, especially as from their containing nitrogen they are valuable in a nutritive point of view. As an instance of their utility in this respect, Mr. Berkeley cited the case of a schoolmaster who almost supported his family on fungi in the autumn months, and that of a gentleman who, whilst in a wild mountainous district in South Wales, had for some time nearly subsisted on the *Boletus* which he there found. Once or twice, however, he was nearly poisoned, and it should, therefore, be borne in mind that the unwholesome species of *Boletus* turn blue when wounded. Of the Mushrooms sold in Covent Garden comparatively few belonged to *Agaricus campestris*, nearly all being the Horse Mushroom (*Agaricus arvensis*). In the use of fungi however, it was necessary to use some discretion, and as an example of the evil results which might arise from their incautious use, a case was mentioned in which Dr. Badham had sent *Agaricus muscarius*, a poisonous species, to a gentleman for the purpose of making a decoction to destroy flies, and the gentleman being from home, the ladies, thinking that Dr. Badham would never have sent what was not perfectly wholesome, had some for breakfast. Now this *Agaricus* was in the north of Asia mixed with Cranberry leaves, in order to produce an intoxicating drink, and with the ladies it produced a similar result. *Agaricus ostreatus* found on the bark of dead trees, and bearing considerable resemblance to an oyster, was then pointed out as being wholesome; and *A. rubescens*, one of the most common species, Mr. Berkeley said, he had been informed by Dr. Hogg, was very desirable and excellent. For those who were interested in edible fungi, he would mention two or three books which they might consult. First there was Dr. Badham's "Esculent Fungi," which was rather expensive; there was a little work by Mr. Cooke; and "A Selection of the Edible Funguses of Great Britain," edited by Dr. Hogg and Mr. Johnson, and illustrated by Mr. W. G. Smith. Mr. Smith, he might add, had recently been commissioned to make a series of drawings of edible fungi for the Science and Art Department at South Kensington.

Mr. Bateman having been called upon by the Chairman, apologised for the absence of *Dendrobium MacCarthiae*, or the Rainy-moth flower of Ceylon, which, through some mischance, had not arrived, but he hoped to bring it before the next meeting. In respect to *Epidendrum rubescens*, which was perhaps the most beautiful of all Orchids, he had also sustained a disappointment. Happily there were in the room a few Orchids on which he would offer some observations, and the first to which he would direct attention was *Schomburgkia tibicinis*. This had received its specific name not in consequence of the flowers being trumpet-shaped, but in allusion to the peculiar form of the pseudo-bulbs, which are large, long, and hollow, exactly like a cow's horn, and used by boys in Honduras to make a similar discordant sound to that obtained from the latter. The pseudo-bulbs, however, in the plant's native country were not so easily taken possession of as one would imagine, for they were frequently tenanted by very ants. *Cattleya Skinneri*, and the *Trichopilia* from Messrs. Veitch, were then noticed; and in connection with the latter, Mr. Bateman remarked that a Lindley medal had been awarded to Messrs. Veitch on that day, and that they had also carried off the challenge medal which he himself had offered for the exhibitor gaining the greatest number of marks for Orchids in two consecutive years. A magnificent spike of *Odontoglossum Pescatorei* was the next subject which occupied attention. This, it was stated, had been grown by Mr. Rucker on the cool system of culture, which was enlivened as being the means, in the case of certain Orchids, of producing visions of beauty such as had never been expected on the old system. The difference in the appearance of Orchids as flowered soon after their introduction and in subsequent years was then touched upon, and a drawing of *Odontoglossum Alexandrae* from a living plant in flower, but the number of blossoms taken from dried specimens, was offered as an illustration of what that species is likely to prove. The distinction between it and *O. Pescatorei* was also stated to be that the one produced its flowers in racemes, whilst the other—*Pescatorei*, produced them in branching panicles. *Dendrobium Heyneanum* was then adverted to, as likely in a year or two to present quite a different appearance. Mr. Bateman next directed attention to two species of *Callixene* or *Luzuringa*, which would give a charm to the coolest greenhouse. They were first noticed about ten years ago in the catalogue of the then firm of Messrs. Standish and Noble, and were stated to be hardy. Having received them along with some *Rhododendrons*, they were planted out of doors, but, not

withstanding the mildness of the winter, they were barely alive in spring. Finding it hopeless to attempt to cultivate them out of doors, they were planted in the bed of a conservatory. *Callixene polyphylla* immediately began to grow, forming quite a dense carpet over the ground, but no flowers were produced. Eventually, however, it laid hold of a *Nepal Berberis*, and no sooner did it touch the stem than it began to clamber up it, and eventually flowers like Daisies, but more delicate, were produced. The other species was more slender than the first-named. *Callixene polyphylla* was sent at the time of its introduction to the Royal Botanic Gardens, Kew, and was figured in the "Botanical Magazine" for 1860, where it is stated that it comes from the extreme south of Chili, "belongs to the same natural family as our well-known Lily of the Valley, and is generally seen running over the trunks of trees near the ground, enlivening them with bright green Box-like leaves, glaucous beneath, and gracefully drooping flowers of the same pure white as the Lily of the Valley, but much larger." Mr. Bateman in concluding expressed a hope that the plant would be distributed among the members of the Society.

Mr. Wilson Saunders remarked that the plant was not lost in the country, as he had it in flower, but he did not find it so ready to run up—a circumstance probably due to the roots being confined in a pot.

Fifteen new Fellows were elected; and the Royal Institution of Cornwall, and the Malmesbury Floral and Horticultural Society, were admitted into union.

WEEKLY SHOW, April 21st.—For a collection of twelve miscellaneous plants there were two competitors—Mr. Young, of Highgate, and Mr. Bartlett, of Hammersmith; but the plants in both were of such an inferior description that each received a third prize. In the collection of six miscellaneous plants, Mr. Young, and Mr. Beasley of Twyford Abbey, Acton, received equal second prizes, and Mr. Bartlett a third prize. For a collection of twelve cut blooms of Camellias, Mr. Trussler, gardener to J. Kay, Esq., of Hoddesden, received the first prize, and Mr. Young a second. For six miscellaneous plants, Messrs. Cutbush received an extra first prize for very handsome specimens for their size, and also an extra second for a collection of eight small Azaleas. For a collection of *Cinerarias* and *Calceolarias*, Mr. Beech, gardener to W. Rogers, Esq., Redhill, received a first-class certificate, and Mr. Young a similar award for a collection of Tulips.

For the best collection of fruit, Mr. Miller, of Combe Abbey, exhibited bunches of Lady Downe's Grape in fine condition, and of excellent flavour. They had been preserved on the Vine since they were ripe in September, and were allowed to hang until the sap began to rise, and actually burst the berries by the force of its ascent. He also exhibited new bunches of Foster's White Seedling, which were very good at this early season. Mr. Miller received the first prize. The second was awarded to Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, for a punnet of very good early Black Hamburgh Grapes and one of Keen's Seedling Strawberry.

ROYAL BOTANIC SOCIETY'S THIRD SPRING SHOW.—APRIL 21.

Though the subjects exhibited on this occasion were not very numerous, Roses and Pelargoniums, which were the principal features, gave the exhibition tent a gay appearance. Of pot Roses there was a fine bank contributed by Mr. Turner, of Slough, and Messrs. Paul and Son. The former took the first prize for nine with fine examples of Charles Lawson, Beauty of Waltham, Juno, Souvenir d'un Ami, Victor Verdier, Maréchal Vaillant, John Hopper, Celine Forestier, and Le Rhone. From Messrs. Paul & Son, who were second, came President, Madame A. de Rougemont, Prince Camille de Rohan, Maréchal Vaillant, Anna Alexieff, Souvenir d'un Ami, Le Rhone, Niphotos, and John Hopper. Collections in fine bloom were likewise furnished by the same exhibitors and by Messrs. Lane, of Berkhamstead, comprising among other varieties plants in excellent bloom of Madame William Paul, Duchesse de Caylus, Dr. Andry, Vainqueur de Goliath, Jean Rosenkrantz, Baron Adolphe de Rothschild, Madame Victor Verdier, John Hopper, Souvenir d'un Ami, &c. The only Roses shown in the Amateurs' class were half a dozen from Mr. James, gardener to W. F. Watson, Esq., Isleworth. For three new Roses of 1864, 5, and 6, Mr. Turner was first with Leopold Hunsberg, a fine deep rose, Marguerite de St. Amand, peach, and Madame Derreux Douville; and Messrs. Paul & Son second with King's Acre, Pline, and Madame Moreau. Mr. Turner also exhibited Prince of Wales, a promising rosy crimson seedling; and Messrs. Paul and Son half a dozen boxes of fine cut blooms.

In Pelargoniums, six plants in excellent bloom from Mr. Wiggins, gardener to W. Beck, Esq., Isleworth, took the first prize. The varieties were Vestal, Madame Reiset, Plenum, Beadsman, Roseum, and Monte Christo. Mr. Clarke, Whitton, who was second, had Roseum, James Lodge, Venus, Alma, and Braeclot, several of which were in good bloom. Of *Calceolarias*, Mr. James had likewise an excellent exhibition, the plants, seedlings of his own, being fine, both as regards the size, colour, and profusion of the bloom. Lord Derby, large, with rosy salmon markings on a buff ground; and Beauty, dark crimson, marked with yellow, were two of the best. *Cinerarias* were exhibited by Mr. James and Mr. Lacey, gardener to C. S. Mortimore, Esq., Carshalton, the former also contributing a stand of

twenty-four cut blooms of Pansies, and a dozen plants in pots. A stand of cut Pansy blooms was also shown by Mr. Hooper, Bath.

Anticulis came from Mr. Turner, Slough; Mr. James, Mr. Paine, Kentish Town, and Mr. J. Butcher, Camberwell. Those from Mr. Turner were by far the finest, and consisted of Moore's Violet, very beautiful, Grimes' Privetree, Heady's Splendour, Traill's General Neill, Summerscales' Catherine, and Netherwood's Othello. Mr. James, who was first in the Amateurs' Class, had Lovely Ann, No plus Ultra, Prince Albert, Conqueror of Europe, Meteor Flag, and Mrs. Smith. Mr. Turner likewise exhibited twelve varieties of Alpines, several of which were very pretty; and Mr. Wiggins, twenty-five Polyanthus.

Of other subjects, Messrs. Lane & Son sent a collection of Rhododendrons in pots ranging from 6 to 9 inches in diameter; the plants were very dwarf with large heads, consisting of seven or eight fine trusses of bloom. These had an excellent effect. From Mr. Wiggins came forcing Pelargonium Purpureum, soft bright rose, with a light eye, and a dark blotch in the upper petal; also *Dendrobium cucullatum giganteum*, with a large cream-coloured lip, and long narrow petals and sepals of a delicate pink. The habit was pendulous. Messrs. E. G. Henderson again exhibited their white-keeled variety of *Clianthus Dampieri* and silver-variegated Japanese Ivy; also *Rhododendron Veitchii* and *Lilium tenuifolium*, of slender growth, and bearing orange scarlet blossoms. Miscellaneous collections of flowering and fine-folaged plants from Mr. Williams and Mr. Wheeler were similar in character to those exhibited at the previous Show. Ornamental-leaved Begonias were also shown by Mr. Wheeler.

FRUIT CULTURE.

To commence with Mr. Robson's experience as stated at page 269 in paragraph 1, it seems to me so confined. He has "had occasionally" to manage trees worked on some kind of Paradise stock, has neither denoted the sort, the soil, or the climate, the number of years the trees had been planted, or whether growing in grass land or a garden. I beg his pardon—He names "a friend of mine," with trees growing in an extensive orchard, among which were some on Paradise stocks "no longer healthy." Most undoubtedly this is true. The Paradise is a surface-rooting stock, and requires the cultivation of a garden. An orchard under grass would destroy trees grafted on that stock. This is so evident, that one cannot help feeling surprised at a sound experienced man like Mr. Robson omitting to observe it. The great advantage of employing the Paradise stock is this—it is incalculable—that such kinds as are at all inclined to canker (and in some deep soils it will affect trees), can be lifted and replanted, so that their roots are brought to the surface and canker arrested. I have done this so often, and have seen the unvarying effect, that to me it seems childish to mention it.

In paragraph 2 Mr. Robson talks of "filling the basket." Now, this is all very well with market-gardening; but the amateur, if I may judge by my own feelings, would rather see a peck of fine Apples ripening on his bush or pyramid secure from "stormy winds," than five bushels of inferior fruit on a standard exposed to them. But even in market-gardening there is no comparison with regard to the profit of growing Apples in an orchard and of cultivating them in a well-managed fruit garden. Any clever industrious man, who would plant an acre of ground with dwarf Apple trees on good Paradise stocks 3 feet apart, or 4840 trees per acre, and graft them with his own hands, and afterwards attend to them by summer-pruning, would reap a harvest such as no orchardist ever experienced. He must be a man not moving in the groove of old ideas, but "upwards and onwards." The difficulty he would have to meet would be that of procuring land, for at the end of seven years half the number of his trees would have to be removed, and an additional acre of land provided for their reception. Unlike Mr. Robson, I do not go to my neighbours to look and learn; but I first try if an idea is feasible, and then make it known to the world.

In paragraph 3, the notice of the stain in the Laburnum in the "Horticultural Transactions" was relative to the discovery by Mons. Adam, a nurseryman at Paris. I am trusting to memory, but at that time the purple Laburnum was a recent introduction, and led to much controversy. I have seen hundreds of the shields of the buds of the purple *Cytisus* full of life, the bud being dead, but I have never witnessed the like stain; and what has struck me as a curious fact, the *Cytisus elongatus purpureus*, a variety between *C. purpureus* and *C. elongatus*, very distinct and beautiful, never has stained the stock, although it is here budded on the purple Laburnum; and in 1864, after the winter which killed the buds but left the shields alive, not a stock was stained, although I quite expected to find them so stained. Some of your readers who

have leisure will perhaps look into the Horticultural Society's "Transactions," and put this matter right. I had no thought of being discourteous; but one of my age has seen so much of culture, that a firm expression often comes to hand when writers on horticulture give expression to opinions not founded on experience, the parent of truth.

Paragraph 4. I did mistake Mr. Robson with respect to the Quince tree. In this county it is a tree of humble growth, and owing to its dwarf habit it dwarfs the Pear, making it a garden tree rather than an orchard tree. Mr. Robson gives qualified praise to Pear trees on the Quince stock. I pray his pardon when I say that his experience in this matter seems to me very limited. If he had studied the culture of Pears on the Quince he would see how much there is in the future. In my opinion—and it is not given without much thought and practical experience—we are mere tyros in Pear culture, and twenty years hence our present imperfect management will be looked at with contempt and surprise. It is only within a few years that some new kinds of Pears, which were probably raised from fruit gathered from Pears grafted on the Quince, have shown a tendency to a perfect union with the stock—more so than any of the old varieties (this is a most interesting question for the physiologist); and in my opinion, owing to this, their growth is vigorous almost beyond belief, often putting forth shoots from the bud thick as a stout finger, and from 6 to 7 feet in height in one season. This is the advantage to be seized upon by the observant cultivator; for if these varieties are grafted with kinds difficult of culture when grafted directly on the Quince stock, a healthy, vigorous, prolific habit is given to the graft. I may instance that most excellent but shy-bearing sort, the Gansel's Bergamot. I have known a tree of this sort double-grafted—i. e., grafted on a stock as described above, to bear three dozen of fruit the third year after being grafted; and I am fully convinced that it might be made a profitable article of culture by that simple operation. Moreover, by cultivating it as a bush or pyramid, so as to be within reach of the cultivator, its blossoms may be fertilised with the pollen of some common free-bearing sort, as its blossoms are often deficient in pollen: hence its tendency to be what is called a shy bearer. I may also point out here the great advantage of careful culture as exemplified in this variety. I have known a Gansel's Bergamot Pear tree grafted on the Pear stock to be ten years before it produced blossoms. There are other sorts of Pears equally benefited by this method of culture—one in particular, which I feel would be a fortune to a poor man. Some three years since I took occasion to regraft some large vigorous trees of the Vicar of Winkfield Pear on the Quince. Last year they bore a fine crop of the largest and most beautiful Pears I ever saw. They were sent to market in December, and made 10s. and 11s. per half sieve, or a guinea a-bushel, my salesman at the same time sending me word that I had kept them a fortnight too long, or they would have made considerably more. Now, any clever persevering cultivator might plant 700 trees of this sort, 4 feet apart, on a rood of ground, keep them pruned in as close pyramids, and make a little fortune. Like all good things, some trouble must be taken to arrive at a good result. Quince stocks must be planted, budded with the proper sort, and then double-grafted. This will be the work of three seasons, and seasons well employed.

As to the prize fruit Mr. Robson writes about, they are all "leather and prunella," being gathered from wall trees, the fruit carefully thinned for the purpose. I wish to see good Pears in the gardens of the people as well as in those of the great and grand, and I shall continue to try and teach how they may be cultivated.

In paragraph 7, Mr. Robson is just as erroneous in his calculations as was a "Kentish Fruit Grower" last year, in a contemporary. If he wished to buy ten thousand Spruce Firs, would he think of buying them at the retail price, 3d. each, charged in small nurseries when a few are wanted?—as much trouble to take up as they are worth. I think not; he would buy them wholesale at 30s. or 40s. per 1000. This is not, however, germane to the matter. A clever fruit-grower would plant stocks, and graft or bud them himself. The expense of preparing one acre of land for planting Quince stocks is not heavy, it should not be trenched but forked over with Parkes' steel forks. (I am presuming that no careful man would have anything to do with inferior land.) This could be done at 6d. per rod, the price here. The annual forking and hoeing would be something under £4 per annum; and judging from the rapid way in which thousands of trees here have their

summer pruning attended to, an active man fond of the thing would do two thousand trees in "over hours" in the summer. I have always in my mind a cultivator with an active mind and active hands. I may add, that I have proved all that I assert.

In paragraph 8 Mr. Robson is frolicsome, something after the manner of Dr. Johnson when he trifled with Boswell. I mentioned the facility with which Pear trees in gardens could be protected, I did not allude to market-garden trees. The remainder of this paragraph is an attempt at wit, and I am sorry to say there is a something deserving an ugly name. I can forgive the attempt at wit, but not the other thing. Mr. Robson says, "Rather than told us he had several thousands of such trees to sell." Is this to be found in the article I have written? Have I mentioned having "several thousands of fruit trees for sale?" Oh, fie! Mr. Robson.

Paragraph 9 is about as weak an illustration of what may be done in fruit-culture for market as it is possible to imagine. The case as stated by Mr. Robson is quite unsatisfactory; not a word is said about the soil, the climate, or the kinds of fruit planted. One is able to understand that Mr. Robson never saw the trees or knew the kinds selected; or, in short, one can see that his information is from mere hearsay. Still I have no doubt that it is to a certain extent true, for the following reason:—A gentleman would, in planting a fruit garden, with an idea of sending his surplus fruit to market, consult his own taste, and select choice kinds, planting a few trees of each so as to produce much variety of fruit in small quantities, called by the market people "cotchels." Now, these from a distance will not pay the cost of carriage, and your readers will, perhaps, be surprised to learn that our most delicious winter Pears—such as Winter Nelis, Joséphine de Malines, and Bergamotte d'Esperen, are nearly valueless as market Pears, unless grown of extra size on trees against walls. The truth is, that only a few market and gentlemen's gardeners know what kinds of winter Pears to grow for Covent Garden, and how to grow them. There are, also, but few fruit-growers who know the most eligible kinds; many of them, like the person Mr. Robson refers to, as to his fruit from 170 trees making 17s. 3d., plant too many kinds, and not the proper ones. They, in short, are deficient in that sound practical knowledge in fruit-cultivation which takes many years, and, above all, acute observation to acquire; such gardeners as one of my friends happens to have in his employ, and whom, because of his inflexible opposition to orchard-houses and root-pruning, he calls "Mr. Passive Resistance," never can and never will obtain this appendix to "useful knowledge"—How to grow fruit for market profitably.

In giving my experience in fruit-growing, I fear that I shall make myself liable to the charge of egotism, that eternal "I," which so sorely afflicts articles on gardening, will rise to the surface. In spite, however, of the obtrusive "ego," I will tell a little more about fruit-culture.

To commence with Pear trees on Quince stocks, I must go back some thirty odd years. About that time I was a great collector of fruits, and more particularly Pears. I had ransacked the whole of Europe, and whenever I saw a new name in some catalogue I ordered a tree. By these means I had formed a collection which I find on reference to my old catalogues, consisted of 918 sorts, besides many that had not been entered, so that I had upwards of a thousand nominal varieties of Pears. One tree of each sort I had planted in a large border of calcareous sandy loam resting on sand and marl with chalk stones. Well, the trees grew freely, and in process of time many of them bore fruit—the fruit of disappointment. What wretched Pears I have tasted from those trees, and how few were found worthy of trying again! As far as I can now calculate, I found one hundred varieties worthy of propagation. It is some twenty odd years since that I became deeply interested in planting Pear trees for market purposes. I thought I saw a pleasing prospect of "majestic trees" full of fruit, myself lying under their shade, with some pleasant book, enjoying the "dolce," &c., and full of agreeable anticipations as to the value of my choice Pears. To carry out my first scheme, I bought of Messrs. Buchanan & Co., then nurserymen at Camberwell, many hundreds of the grandest standard Pears ever seen, many of their stems measured from 6 to 7 inches in circumference. They were, in nursery parlance, overgrown trees, and were destined to the wood heap. I happened at that time to have made a purchase of some freehold land, and I remember bribing the farmer to allow me to plant my large Pear trees in rows among the young Wheat, agreeing to pay for every square yard taken up in planting my

trees. I had the heads of my trees cut off, and planted the stems in the autumn of 1836. They all grew admirably, and in the spring of 1838 they were grafted with the following sorts, which I then thought would make a fortune—Easter Beurré, Beurré Diel, Beurré Rance, Glou Morcean, Hæon's Incomparable (how odd it is, that this Pear, then one of the handsomest and finest Pears known, should now be a bad grower, a bad bearer, and the fruit very inferior; it has been so here for many years), and Knight's Winter Crassane. The grafts soon formed fine healthy trees, blossomed abundantly, and I was on the eve of pleasant expectation; but my hopes were in the course of a few years all crushed. I had fair crops of fruit, but my soil (or climate), was too cool, and the fine sorts above named did not ripen their fruit properly; some were spotted, some cracked, and but very few indeed were fit for the Covent Garden shops, where I had so often seen Pears of the same kinds from walls so fine and imposing. Still my trees were a beautiful sight, they were so healthy. The only sort that fulfilled my expectations as to bearing abundantly, was the Winter Crassane, of which I had one season upwards of one hundred bushels of fine clean fruit. A few were sent to Covent Garden in January to ascertain their value, which I found to be nil, for they had no flavour; the remainder were crushed for their pips, and very fine stocks they made, and thus ended my first experiment in growing Pears for market.

It was, I think, in September, 1843 or 4, that on returning from a long journey on the Continent, I paid my specimen Pear trees a visit to look over the numerous varieties, and taste and try them. To my great delight I soon observed two trees, pyramids, remarkable for the abundance and beauty of their fruit; one was the Louise Bonne of Jersey, the other the Beurré de Capiaumont, both on Quince stocks. Among hundreds of sorts there was not one that looked so full of promise as those two kinds. My mind was immediately made up. The former I determined to plant largely, and the latter to graft all my choice kinds with, for I observed that it bore equally well on the Pear stock, and gave fruit of a rich red, yellow, and russet, peculiar to this sort in the soil here, and which it still retains, being very unlike those from trees near London, which are generally covered with russet.

In the autumn of 1845 I commenced my plantation of two thousand Louise Bonne Pears on the Quince stock, planting trees three and four years old. The rows were 24 feet apart, to give room for the crops in the spaces between them, and the trees 5 feet apart in the rows. They commenced to bear the second season after planting, and produced the most beautiful fruit I had ever seen. From 1849 to 1853, both inclusive, we had here a series of spring frosts, destroying all my Pear blossoms. I began to think that my dreams of profit from Pear-growing were castles in the air. In 1854 a change in our spring climate took place, and my hopes revived; in 1855 my crop was magnificent, the Pears the finest in the market, and the price they brought very satisfactory. In 1857 I was more than ever gratified, for such an assemblage of pyramidal Pears loaded with fruit of the most beautiful colour was never before seen, they were large, and without exaggeration their colour was crimson and gold—this I have since found was owing to the soil being full of calcareous matter. It was this season that I had a visit from two experienced market gardeners from Fulham, the classic region of market gardens; "they came to look at my Pears," they said, having heard about them the previous year in Covent Garden. I felt, of course, great delight in showing them. They looked and looked at the Pears, were very reticent; but I detected some significant glances exchanged. After lunch and a glass of wine, I expressed my anxiety to know whether my Louise Bonne Pears were equal in quality to those at Fulham, knowing as I did the superiority of the soil and climate there. I addressed myself to Mr. M—, a most experienced cultivator. In reply, he said, as nearly as I can recollect, "My Louise Bonne Pears, the trees on Pear stocks, are a week or ten days earlier than yours; I shall go home and send them all to market before yours arrive, for no Pear I have ever seen can compete with them." I need not add that I felt much gratified. I sent to market that season upwards of 700 half sieves (half bushels) of Louise Bonne Pears, which made from 6s. to 8s. per half sieve, the first price for "seconds," the latter for the prime. My numerous trees re-grafted with Beurré de Capiaumont, were equally successful, for in one season I sent 600 bushels of this sort to market, which made from 4s. to 5s. per bushel. I felt fully rewarded for my years of care, and thankful that I had been so observant.

Since the above period I have removed all my Louise Bonne Pears, although the trees were large. Finding that they interfered with cultivation, and many of them having chlorosis from the soil being shallow, resting on calcareous sand, they are now in close quarters, and full of blossom-buds. To exemplify the fertility brought on by removing fruit trees, I may mention that half a dozen of the first Louise Bonne Pear trees planted are left in their original positions, they are large trees, but this season blossomless. I have, I fear, too lengthily thus far given you a full and particular account of my experience in growing Pears for market.

In paragraph 12 Mr. Robson admits that the Quince stock "is of service in more ways than the Paradise has been for Apples." Thanks, Mr. Robson, for the admission. Is it because the Quince is more distantly related to the Pear than the Paradise to the Apple, so that the foreign blood invigorates the tree? This is not quite in accordance with vegetable physiology. To his question, Has fruit from Pears on Quince stocks "ever excelled that grown on the Pear stock in size, flavour, or abundance?" the history of my Pear-culture is a sufficient reply. The truth is, it is answered here every autumn, and has been annually for many years.

From what I have seen of the fruit-growers of Kent, I have reason to believe them kind, good men, living on a soil so good as to make them satisfied with their lot, and not inclined to try any new mode of culture or new thing. I can illustrate this feeling in fruit-growers well-placed. It is now some thirty or forty years since I raised from a stone a Plum, which I soon found was of great value, being a constant bearer, of good colour and size, and, above all, the earliest Plum known. After the lapse of ten or fifteen years, finding it so valuable as a market Plum, and not having at that time more than thirty acres under cultivation, so that I could not plant out my large stock of young trees, I made known its qualities to the fruit-growers of sunny Kent, &c.; they would not plant it to any extent, feeling satisfied with an inferior early Plum, called the Early Violet and the Early Orleans. Soon after this, somewhat less than twenty years since, I was enabled to add to my estate by some fortunate purchases. One field of five acres, with a fine calcareous soil and south-western slope, I dedicated to Plums, and knowing well the custom of fruit-growers who planted only well-known sorts, such as that popular and excellent Plum, the Victoria, and others, all mid-season Plums, I followed my own judgment and planted three kinds, one the early seedling I have mentioned, the others Belle de Septembre and Reine Claude de Bavay, both very late; the result has been the perfect success of my calculations. For some years past I have sent hundreds of bushels of the early Plum to market before there were any to compete with them, consequently they have made double the price of mid-season kinds. Of the two late sorts the Belle de Septembre, one of the largest, best, and most beautiful of culinary Plums, has also realised a very high price, because it was so late that no other Plums were in the market; and my late Green Gages, *alias* Reine Claude de Bavay, have been sent to market when Green Gages were forgotten, so that 10s. the half sieve, or 20s. per bushel, has been no uncommon price for my two late sorts of Plums. I enter into these details to show Mr. Robson that I am not a visionary, and that I have deviated from the fruit-grower's groove to some purpose. One thousand bushels of Plums were sent from here last season, and owing to their going to market early and late, the glut, owing to the abundant crop, was avoided, and I had my reward.

I may add that the five hundred trees of the early Plum are all pyramids, kept so by slight annual pruning, and that they are planted 24 feet apart, row from row, and 10 feet apart in the rows. When I planted them I was not so wise a planter as I now am, or I should have had more than double the number of trees on the same space of ground. I never remember seeing anything in fruit-culture more beautiful than these trees were last season, every tree a pyramid of purple fruit more numerous than the leaves, and, to my surprise, they are this season covered with blossom-buds, seeming likely to bear a fine crop. Spring frosts have but little effect on this kind of Plum, hence its value. Now, it will scarcely be believed that till within these two or three years Mr. Robson's neighbours knew nothing of this valuable sort, although, according to his account, they visit other parts of the kingdom, and Belgium, &c., in search of good fruit. I have never heard of any new good kind of fruit being introduced by these gentlemen, or a new kind raised from seed. If they had read "our Journal" they would have been before their time in this matter, instead of behind it. I

found the Reine Claude de Bavay Plum in the garden of its raiser, Major Esperen, at Malines, and at once imported all the trees I could find, and they are the trees which now bear so well here. In my zeal I imported some hundreds under the name, which to my great concern turned out Coe's Golden Drop.

In giving a history of my Plum-culture, although I fear your readers will be tired of the everlasting *ego*, I feel that I ought to describe a new mode of planting Plum trees for market purposes just commenced here.

There are two kinds of Plums remarkable for the fastigate habit of the trees, for the size and beauty of their fruit—one purple, the other bright red—and for their prolific habit. Well, after closely observing these sorts for two or three years, I determined on planting them to some extent. Accordingly, last spring a plantation was formed of upwards of one thousand trees, planted 5 feet apart, row from row, and 3 feet apart in the rows. It is intended to encourage their natural Cypress-like habit by summer pruning, so that each row will form almost a hedge. In the course of seven or ten years, if necessary, every alternate tree will be removed and replanted; but in the meantime they will have amply paid their way, for even this spring many of the little pyramids are full of blossoms. By this mode of culture—and it may be followed with some kinds of Pears on Quince stocks and Apples on Paradise stocks—the trees have the full benefit of the soil, which is too often exhausted by intermediate cropping; still, a light crop in the centre of the space between each row may be taken for one or two years. The great advantage, however, derived from this mode of planting is the superior ripening of the fruit from the radiation of heat from the bare surface of the soil, a subject but little thought of by most fruit-growers.

In his eleventh paragraph Mr. Robson mentions his freedom from the imputation of "puffing any particular class of tree." I am not aware of any person being liable to this apparent inuendo; but I happen to know that two little books, published within these twenty years, one having gone through thirteen editions (13,000), the other twelve editions (12,000), have spread the knowledge of garden fruit-tree culture over the whole empire, and have relieved thousands of amateurs from the thralldom of persons calling themselves gardeners, not the true species, for a good accomplished gardener is a fine fellow, and far superior, I am inclined to think, to a majority of the trading classes, owing to his vocation bringing, on reflection, a knowledge of Nature and her handiworks.

Mr. Robson thinks that because the Filbert-growers prune their trees properly, the same would have been done by the Kentish fruit-growers if called for. The soil and climate have more to do with Filbert-culture than most people are aware of. The formation on which the soil rests suits them, for no pruning, no skill, will make them succeed in the majority of soils. The fruit-growers of Kent for some generations have felt satisfied with their orchards, and have not moved "upwards and onwards." Some day ere long the firm of Messrs. Passive Resistance, Jasper Standstill & Co., will be dissolved, and then the Kentish fruit-growers must look to it, for depend upon it many clever, energetic men will cultivate fruit in gardens and take the best market prices. I have more than once stated that fruit culture has not yet commenced, it is yet in the future; and when the above firm has ceased its operations, not only will market garden fruit-culture be widely extended (our increasing rich and luxurious population will take all that can be produced), but domestic gardening will largely increase, and orchard-houses, ground vinerias, vineyards under glass, cordon training under glass ridges, dessert Orange culture, pyramidal and bush culture of fruit trees, and other pleasant deviations from the old-fashioned routine, will be disseminated among that rapidly increasing and highly intelligent part of our population—the middle classes of our country. That great truth, "Genius cuts out new paths where ordinary mortals imagine nothing can be done," is as applicable to fruit-tree culture as to the higher arts.—T. R.

P. S.—Referring to the article by Mr. Vallance, page 270, there is not the least doubt but that the French Paradise stock is as objectionable now from its tendency to canker as it was in the time of Miller, who describes it so accurately. The sort described by Mr. Vallance is doubtless some variety of the Doucin, so much like the Pommier de Paradis as not to be distinguished from it, but still not it. I have some thousands of this sort; the trees it gives are equally dwarf with those grafted on the French Paradise; but I reckon I was cheated when I bought these stocks.

[At one time we regretted the controversy between our two

friends—for pokes were given and returned—but the preceding most useful and sound communication would remove the regret even if the pokes had been more numerous. However, we think the controversy may now close. Each has vindicated his opinions, and each, we are sure, regrets if he has annoyed his antagonist.—Eds.]

THE PARIS EXHIBITION OF 1867.

We understand that it is proposed to hold a meeting of florists and horticulturists in the conservatory at the Royal Horticultural Society's Gardens, South Kensington, on the 1st of May, at 10.30 A.M., in order that they may have the opportunity of stating their views with regard to the great French Exhibition of 1867.

THE INTERNATIONAL HORTICULTURAL EXHIBITION.

On this day, four weeks hence, the Great International Horticultural Exhibition will be opened in the presence of one of those distinguished companies which can only be seen on such occasions; and will disclose a splendour of form, and colour, and effect such as has never been witnessed in this or in any other country. The preparations that have been made are already far advanced. The framework of the building itself is now completed, and the roofing will in the course of a few days be fixed, while the interior arrangements and groundwork have now acquired such a development as to exhibit distinctly the outline of the whole.

From the ground plan that we publish in our present Number, a pretty correct idea may be obtained of the way in which the interior is laid out; but no plan can convey to the mind any conception of the vast dimensions. When we say that the area occupied is over 3½ acres, that its length is 563 feet, being exactly the width of the Great Industrial Exhibition building of 1862, its width 293 feet, and that its height is 30 feet in the centre, some faint notion may be formed of what sort of place it is. About 55,000 superficial feet will be appropriated to the plants, which will be arranged on sloping grass banks; and 60,000 superficial feet are devoted to the promenades, which will accommodate 15,000 persons in the building, allowing 4 square feet for each person. For the Orchids and other tender plants special arrangements have been made, and an apartment 500 feet long by 40 feet wide, heated with hot water, and made perfectly secure, has been provided.

The merit of the plan, and execution of the building and earthworks, are due to Mr. Gibson, the skilful garden architect and superintendent of Battersea Park, who, with his clever son, has given his gratuitous services, and devoted himself with unwearied energy to secure the success of this great undertaking. The framework and canvass have been constructed and erected by Messrs. Unite, the eminent tent-makers and sail-cloth manufacturers of Paddington, who, in this matter, have aided the Executive Committee by an affability and liberality which is worthy of commendation.

But, say some, "How is such a vast space to be filled?" "Filled?" we say. Nay. Will there be room enough? Have we not been told of more than twenty two-horse vanloads of things coming from Waltham Cross Nurseries, as many from Slough, and Ascot, and Knaphill, and nobody knows how many from Chelsea? Then we hear of Mr. Pince, of Exeter, fired with all the ardour of early days, freighting a fabulous number of railway trucks to convey examples of those grand conifers and other ornamental trees for which the Exeter Nurseries have been so long celebrated. Then there are numerous other exhibitors who will be there in not less formidable force—from Holloway and Hammersmith, St. John's Wood and Highgate, Tooting and Dulwich, and a host of those grand private collections besides, which can be seen nowhere else but in this country. And then there are all the treasures of Kew—its Palms, and Bananas, and other fine-foliaged things, all of which have been placed at the disposal of the Committee, will be there. There is not a nursery or garden establishment of any note in the country that will not be represented; and not of this country only, for we already hear of great preparations at Ghent and Brussels, Paris, Amsterdam, and many other places that intend to join in the honourable contest. All these varied subjects skilfully and artistically arranged over a surface of three acres and a half of picturesque undulating ground—verily it will be a grand sight!

GROUND PLAN OF INTERNATIO

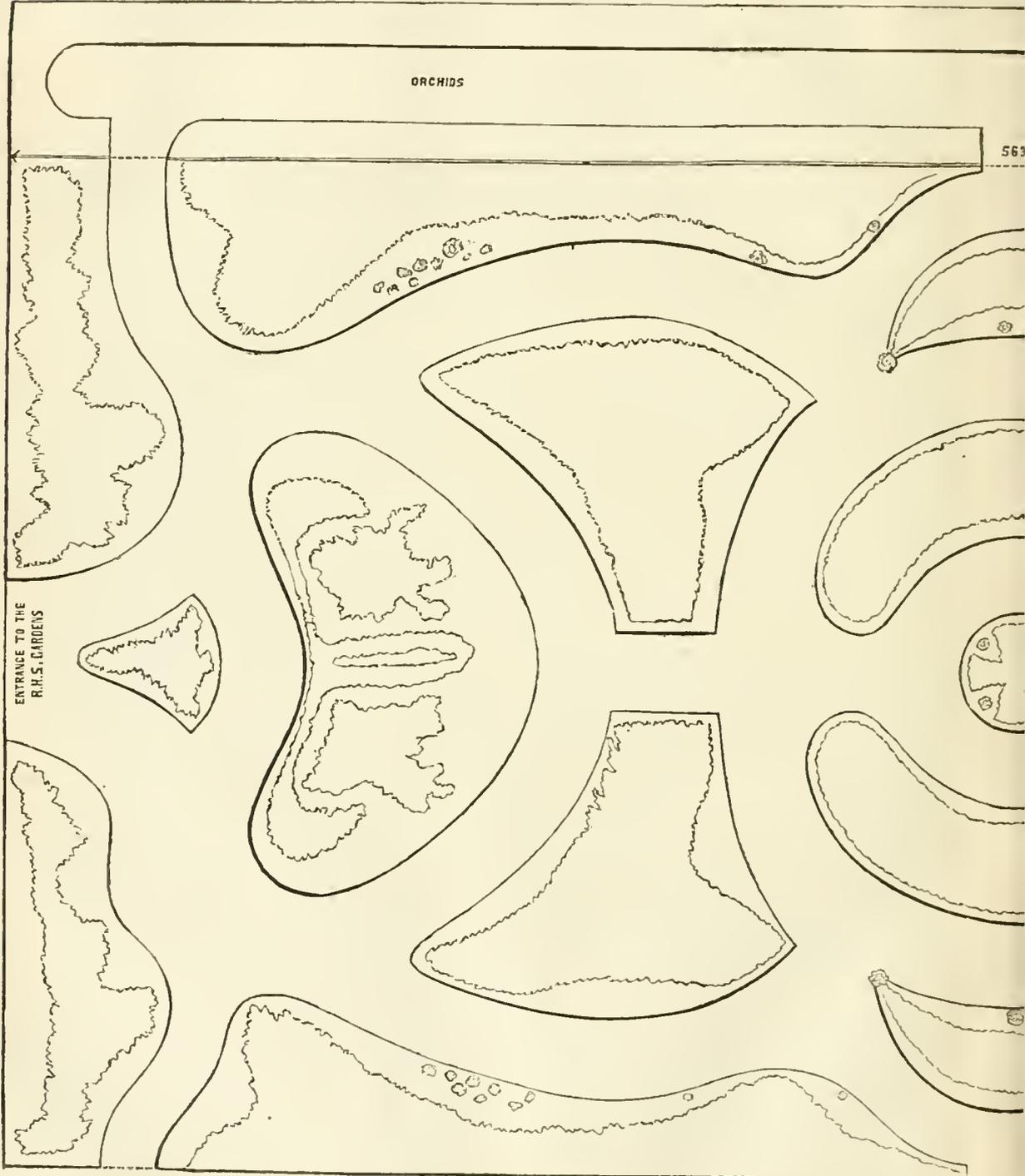
CROSS SECTION



ORCHIDS

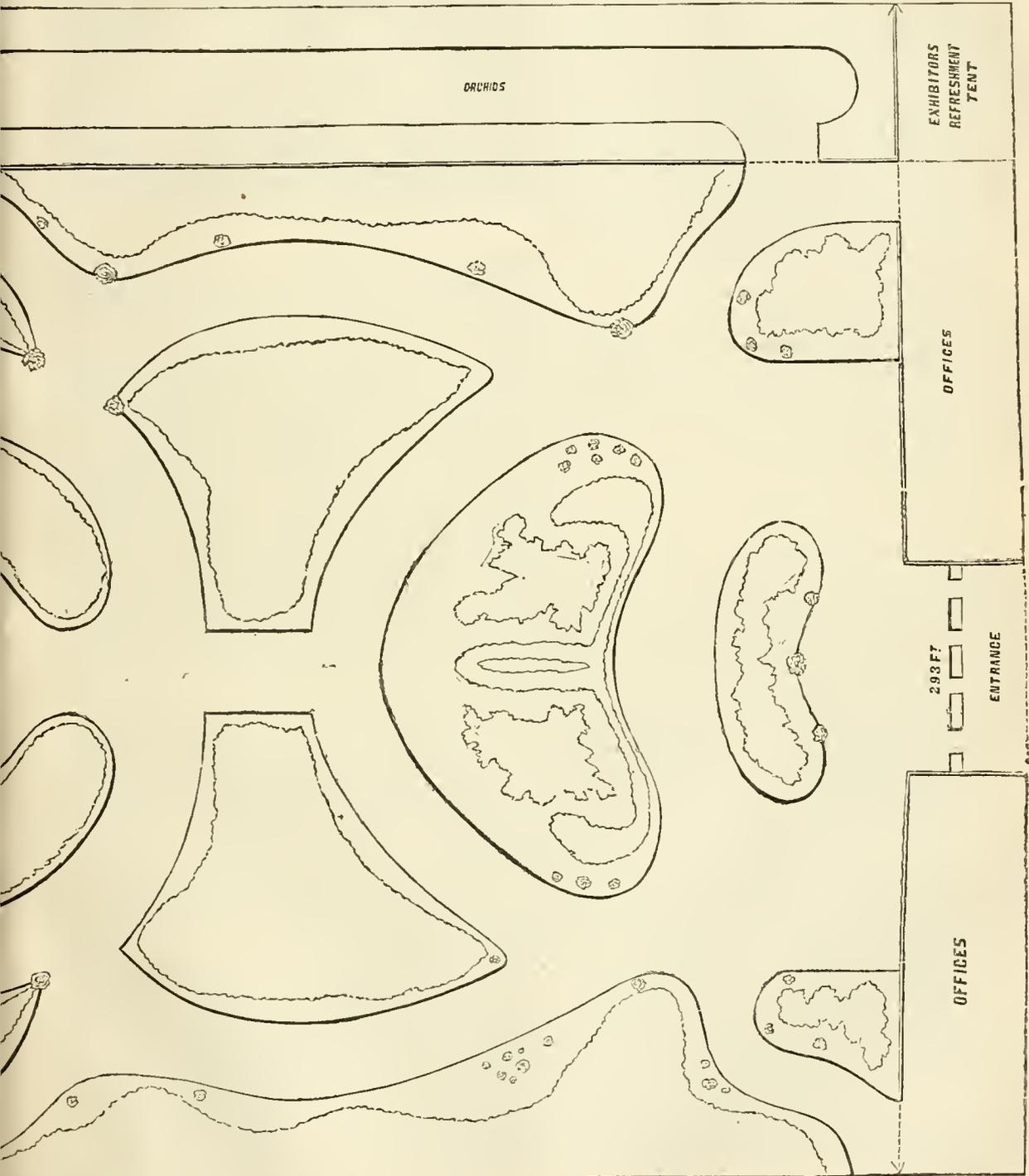
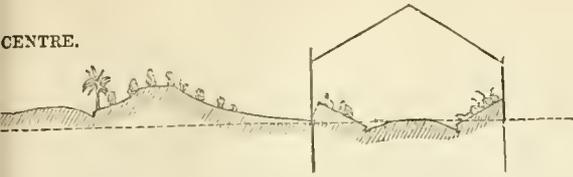
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ENTRANCE TO THE R.H.S. GARDENS



AGRICULTURAL EXHIBITION.

CENTRE.



ORCHIDS

EXHIBITORS
REFRESHMENT
TENT

OFFICES

293 FT.

ENTRANCE

OFFICES

CROMWELL ROAD.

100 200 FEET

PROTECTING THE BLOSSOM OF WALL FRUIT TREES.

I LIVE a few miles, less than ten, due north of London, and for thirty years I have grown Peaches, Nectarines, and Apricots on an open wall facing full south. During all these years I have never protected them in the least, and I have lost once now and then, yet very rarely, my crop of Peaches and Nectarines by the spring frosts, but my Apricots have never been injured.

This season my Apricots have been in profuse bloom, but they were in consequence of the mild winter so very forward, that, departing from my usual practice, I thought it only prudent to retard, if I could, the expanding of the blossoms. I suspended, therefore, over the tree a cloth supported on poles, through the sunny days, and there were but few of them, of February and the first half of March, always continuing the covering through the immediately following nights, but removing it wholly when the weather was dull and gloomy. The sequel is, that not a blossom has set its fruit, and "the Begum's" anticipations of Apricot-jam are at an end for this season; but then she has the gratification of knowing that a friend's Apricot on a west wall that has been left wholly unprotected, shows an ample crop.

Such a failure as this looks very like *propter hoc* as well as *post hoc*, and brings to mind Tallyrand's impatience of blunders, and what he said of them. I shall "protect" no more.—BETA.

[We believe that if Apricot blossoms could be kept dry, they are as well without protection. On many south walls this season we believe the centre of the blossom was injured by wet and cold, when west and east aspects escaped from being later. We notice nothing wrong in the mode of covering adopted, but it is possible that the germs of the fruit was injured before covering was resorted to. We had a box of fine blossoms sent to us to look at, and on examining them not one had a sound pistil. Most likely if you had not covered at all you would have been blaming yourself.]

A PLEA FOR EVERGREENS NOT GENERALLY GROWN.

IT is much to be regretted that at the present time the attention directed to such plants as are likely to constitute a feature in dressed grounds is too much confined to those having only an ephemeral existence. A glare of colour for two or three months is thought to be of more importance than watching the progress of plants that may, in all probability, continue for centuries. Pinuses, it is true, are grown, and a few select species are favourites everywhere; but the mass of other trees is much neglected, and there are several shrubs of great merit which are far from so generally grown as I think they ought to be. My object in the following remarks is partly to direct attention to the merits of certain trees and shrubs, and at the same time to ask some questions as to one or two, respecting which I am desirous of further information. With these I shall commence.

First, I wish to have the opinions of those who have grown *Skimmia japonica* extensively, as to how it comports itself as a shrub. Unfortunately I have not had a chance to try it, as the soil here is adverse to it. I also desire similar information with regard to *Pernettya mucronata*, likewise a berry-bearing plant of great beauty when well managed, but which I cannot grow. *Desfontainia spinosa* I have seen in great perfection out of doors, but I do not think it is plentiful enough for general adoption there; it is certainly deserving of attention. Then we have several plants of recent introduction from Japan, some *Aucubas*, for instance. The one called *A. japonica vera* seems to be of slow growth here, but it is quite hardy I should think. Will the male one ever revolutionise the character of our old familiar *Aucuba*, which even now is not so much grown as it deserves to be? The other *Aucubas* I am not acquainted with, and I expect that they are not yet sufficiently numerous to be used in out-door work executed for effect.

Raphiolepis ovata is a promising plant, quite hardy, and I think likely to be a favourite, and, the foliage being good and abundant, it will, I think, rank high amongst evergreens. I wish I could say the same of the *Cotoneasters*. *C. Simmonsii* looks very well in autumn when loaded with beautiful orange-coloured berries; but its leaves become shabby, and, in fact, fall off, and the other species seem to have too great a resem-

blance to *C. microphylla*. Nothing can be better than the latter for covering a steep bank, its deep dark-green foliage and healthy appearance rendering it very ornamental in such a position. Rabbits are, however, very fond of it, and where they abound it ought not to be planted; they are also fond of another plant, not by any means so common as it ought to be—*Grisebinia littoralis*. This fine evergreen is, perhaps, more densely clothed with foliage than any plant which I know, except the Box, and being of compact growth deserves to be more generally grown. *Photinia serrulata* is too tender for most places, excepting against a wall; but I believe *Eugenia Ugni* and *E. apiculata* to be hardy enough, and well fitted for a sheltered shrubbery. Then we have the hardier varieties of Indian Azaleas, which at Fairlawn are as hardy as the *Rhododendron* and look as well; and *Camellias*, too, will thrive in places where the soil and situation suit them; but they very seldom produce good flowers out of doors, as the least wet spoils them.

Many other evergreens might be named as capable of adding to the interest afforded by that class of plants—one which I should like to see more extensively grown; and I hope that those who have succeeded well with the species above mentioned, or who know of others deserving of attention, will record their views.—J. ROXBOROUGH.

JOTTINGS OF GARDENS IN LEICESTERSHIRE.

LEICESTER! what thoughts arise at the mention of the name! Few counties call up more thoughts or subjects for reflection. What troubles have been there! what scenes of strife and commotion! what sermons its very stone walls preach! It is full of interest. Its Fosse road, what troops have passed along its highway!—its river Soar, with its famous bridge which Richard III. passed over to the memorable battle of Bosworth; and a tablet in the wall surrounding the grounds of A. Turner, Esq. (now famous for Orchids), tells the traveller, "Near this spot lie the remains of King Richard III., the last of the Plantagenets." Leicester! with its old abbey walls and Norman archways, where the most famous man of his day—the butcher's son, the dictator of kings—the great Cardinal Wolsey expired, teaching important lessons to yet unborn generations of the instability of human greatness when, passing through that old gateway in the north wall, he said, "If I had served my God as I have served my king." Leicester! with its fine agricultural and grazing land; its granite, slates, and coal; its wool and woollen manufactures; its rapid strides in trade and commerce; and its boot and shoe manufacture, a trade which has sprung up within the last twelve years. Trade and commerce flourish; and men of business who, a few years since, worked hard for their subsistence, now, having made their fortunes, have their handsome suburban villas, which are a credit to the town and county.

From the race-ground to Oadby, a distance of three miles and a half, is one continuous line of detached villas—neat, pretty, and apparently well kept—and I could not fail to be struck with the great and pleasing variety of trees and shrubs with which the grounds surrounding them are planted. It would be well if many of those intrusted with the laying out and planting of similar villas round London would go down there and take a lesson or two, so that we might not have so much monotony in the varieties of shrubs yearly planted. The suburban mania is extending in every direction; east, west, north, and south are heard the trowel and hammer, and long may it continue; long may trade flourish, long may our favourite horticulture find support, and the spirited nurserymen receive encouragement.

Few towns have made, and are still making, greater strides in horticulture. It is a work of time to deeply engraft a love of the beautiful in any district, particularly such a one as this was a few years since; but it has been done, and all honour to the few who quietly impressed the minds of others, and gently led them on. I dare not mention names, or I might those to whom Leicester is much indebted; they have "done good by stealth," and would "blush to find it fame." There were not many places a few years ago to interest the horticulturist or botanist, and they were far apart, but a change has come. Leicestershire can now support its floral and horticultural exhibitions in most of its towns and villages of any note. Here flowers are now grown from the lowly Pansy to the most gorgeous and rarest Orchids, and fruits from the "show" Gooseberry to the luscious Peach and Pine; and if

the Leicester exhibitors only have clear-headed practical men on their committees, and proper men for judges, they will soon have one of the most important societies in the country, and one that must influence the horticultural taste for permanent good.

I have before remarked that villas are springing up on all sides; more particularly in a southern direction are to be found the villas of the mercantile and manufacturing gentry who live out of town, in fact it is the Clapham of Leicester. I may, as time offers, note some of these places, as well as nurseries; but there is one deserving of special notice. I was informed that at Glen Magna, a village about seven miles out in a southern direction on the old turnpike road to London, a gentleman, one of the "self-made men," was making a new place. I started off one day to see, if possible, if it was equal to report. On making inquiry, I found the place was called "Rupert's Rest," and that it was the residence of T. Crick, Esq. I fortunately found Mr. Crick at home, and on stating my errand he, in the kindest manner possible, showed me all over the premises, which I will endeavour to describe.

The house was originally a small old country villa, with very trifling grounds round it; traditionally, and I believe with more truth than many other traditions, the house in which Prince Rupert slept, surrounded by his soldiers, the night before the battle of Naesby. But what a change of scenery now! Ah, Rupert! your soldiers would not so many of them that night have had to sleep in the open air, for the place is indeed altered. A new wall faces the road, with entrance gates to front and back. I am conducted by Mr. C. through the back entrance into a yard, having the house on the left hand, with part of the old boundary wall still standing, and on the right are new stables, coach-house, cow-shed, &c., with a fruit-room over the last, and a fowl-run at the farther end. The glass is opposite me; the first house we entered was a sunk range in three divisions, intended for Peaches in one, Figs in the centre, and a succession-pit for Pines in the other end. The Peach trees had not done well, but the Fig trees were growing very freely, and the Pines were just commencing. This house is sunk in the centre or pathway, is span-roofed, and each light is made to open for ventilation. It is 55 feet in length. The first object that attracted my attention was a hatch of seedling Figs which had been sown by Mr. Crick himself, and which were about 12 inches high; there were also some seedling Grape Vines from a foreign source, and a quantity of seedling Pelargoniums, a cross between Mrs. Pollock and Madame Vaucher, but not sufficiently large to give one a correct idea of what they were likely to be, but one or two had a pretty, clearly-defined zone, as in the mother plant, Mrs. Pollock. There was also hanging from one of the division roofs a good plant of *Ipomœa Horsfallii*, which had been very full of flower, and there was a variety of other plants of which I made no note.

Ascending three or four steps out of the Peach-house, we next enter a fine curvilinear range with a lantern roof for ventilation; this house is of iron and glass resting on brick walls, is 105 feet long, 20 feet wide, and 15 feet high, and is in three divisions. The iron ribs, which are $1\frac{1}{2}$ inch wide by $4\frac{1}{2}$ deep, as well as the bars for the glass, are neatly put together with screws and bolts; on each side are swing-sashes made to open by a very simple contrivance of long rod, wheel, ratchet, screw, and lever; and advantage was taken in building the walls to let in ventilators under the heating apparatus and pipes, so that the cold air passing in might enter a partially confined chamber over the pipes supplying surface-heat, ere it came in contact with the plants—a point too often forgotten in erecting houses especially intended for winter work. The lantern on the top of the roof is also made to open in three lengths by a simple contrivance of chain and leverage, so that there is ample ventilation yet simple in its contrivance. On entering from the lower range you find opposite you glass folding-doors leading into a pretty ornamental flower garden, but passing to the right hand you find there is a bed built on arches on each side of the house, with four rows of four-inch pipes under them for bottom and top heat. In the centre is a bed in two divisions, also with pipes for bottom heat; and in the centre of one of the four-inch pipes is inserted one half an inch in diameter, and having a tap to supply hot water, so that in watering the plants the gardener has the water at any heat he may think fit to use it. In the right-hand bed are planted a quantity of Grape Vines. "These," said Mr. Crick, "I imported from the continent; those on the other side are the best kinds I could buy from the English nurserymen, al-

though both will be cut down in the spring and be allowed to make another year's growth ere they carry their first crop of fruit;" yet the difference in growth and strength was very perceptible, although all were treated alike. I would certainly advise lifting the whole of them before they make another year's growth, filling up the borders to the top of the curb with partially decomposed chopped turf, and planting them on the top with at first a slight covering of soil over the roots. In this house was a general collection of plants such as are usually found in a gentleman's place.

We now pass through a glass door, and we are in the tropical end, and here we find a good selection of stove and ornamental-foliaged plants, which, when fully grown, will merit distinction. The end wall, parting off the potting-shed, is covered with glass cinders, with pots and niches for Ferns, &c. This cinder is formed from old glass bottles, &c., run together in a furnace, and will have a pretty effect when filled. We next look into the potting-shed or, as Mr. Crick called it, the workshop, 19 feet long and the same width, nicely heated from the boiler and pipes, which are below. The boiler is one supplied by Appleby, Reneshaw Iron Works, near Derby, and here I may remark that the whole place is supplied with bottom and top heat by the same boiler. The pipes, four-inch, are all separately connected with the boiler by two-inch pipes, with stop-cocks, so that each house can be worked separately. I believe there are nine of these stop-cocks.

In this shed I saw a quantity of bulbs for spring work, and I was much pleased with the nice genial warmth; here there is no need to fear bringing out a plant or two to repot, clean, or tie into form from a stove or intermediate-house as is too often the case. I have often seen plants taken from a warm house to a shed almost at the freezing-point, to be repotted or for some other operation to be performed, to the detriment of the plant and the injury of the gardener's constitution. Here everything appears to have been done after well-matured thought.

We now return through the stove into the house we first entered, only on the other side, until we come to another glass partition. We enter here, and find the house filled with a stage in the centre and on the sides. The end is covered with glass cinders, but here is a portico in artificial rockery, with white spar pillars and capitals, which when filled, as it has been suggested, with *Mesembryanthemums* and other succulents, will have a pretty effect—in fact this will be one of the most handsome pieces of artificial rockwork I have ever met with. I much admired the effect of the paths—"Minton tiles," of a pretty design. Passing through the portico and pillars, we enter the conservatory adjoining the dining-room. This has also an iron and glass curvilinear roof, and from the dining-room there will be a very fine view when the climbers have made their full growth and are hanging in festoons, the glorious *Tacsonia manicata* and *igneæ* (I believe it was) mingling with the variegated *Cobœa*, and the walls covered with *Lycopods*, Ferns, &c.; and on looking through a glass door at the other end, which is 57 feet from the dining-room, some ribbon-borders are seen on the outside. I asked Mr. Crick who was the builder, and his reply was, "We did it ourselves with our own men. I carried out my own ideas." Then, I say, all honour to men of business who earn their own fortunes, and can and do set their own ingenious faculties to work from a pure love of horticulture.

We pass out into the grounds—here are some handsome polished granite and marble vases, tazzas, pedestals, &c., some of great cost from the Continent. Around some of them there are pretty designs in pebbles of various colours brought from Kent and Surrey. I also noticed a pretty mess house under some trees, some more massive ornamental vases opposite a pheasantry and aviary, rockwork, and a cinder flower garden with Roses. We still keep moving—presently we come to the geometrical garden. Here the frost had done its work, so that I could not see what the appearance had been, but I understood that there was to be a rockery formed in some part adjoining. Here were a nice lot of fruit trees in pots, preparing for a large orchard-house about to be erected; also a small viney of which the roof, being too flat, was to be raised at the back. Next were several pit-lights full of dwarf seedling *Chrysanthemums*, but none was in bloom.

But what have we here? Why certainly these are Peach trees. Yes, and I exclaimed, a new idea, "good walls for the million." Do not laugh, good readers, at the idea, it is an accomplished fact. A Willow wall to train Peaches on, with the wood of the latter good, firm, and brown, buds plump, and,

what was more, I looked at the old foliage to discover traces of red spider or thrips, but could not discover any; yet adjoining was a brick wall, and there was no need of a magnifying glass to find traces there. Now for the formation of the "Crick wall."

Mr. Crick was troubled with his neighbours' cattle in a field adjoining his garden, and having a lot of Willow wood lying about, which had been cut down during the alterations, he had it cut into lengths and split flat, or as flat as he could, some posts fixed into the ground, and the strips nailed longitudinally to the posts. This wall is about 10 feet high. There has been no effort to stop any openings between the pieces, and the wood of the Peach, Plum, and three Apricot trees are as firm as that of others on a brick wall. I thought the idea might be of service to some of the readers of the Journal. I would suggest Larch posts, charred before they are let into the ground, to any one desirous of putting up such a fruit wall at a small expense. A good crop of fruit had been ripened.

There is not room in Mr. Crick's place for display in the natural or gardenesque style, but when Mr. Crick has fully carried out his ideas it will be one of the prettiest gardens in the artificial style that can be found in the county, doing credit to all who are concerned. I am sure any one wishing to spend an hour, and who has a love of gardening, will, on presenting his card, meet with the greatest courtesy from Mr. Crick; and, for his kindness and affability, to him are due the thanks of—NICKERBOR.

WORK FOR THE WEEK.

KITCHEN GARDEN.

WHERE Broccoli and winter Greens are coming off, the ground should be deeply trenched, the stems being laid at the bottom, and quicklime strewed over them; also, if the ground is intended to be again planted with any of the Brassica tribe, it should have some manure incorporated with the soil; but it is best at all times to change the crops as far as practicable. If, however, from circumstances of soil or situation it is necessary to plant the same kind of crop repeatedly in the same places, such parts should have repeated turnings to expose fresh surfaces to the influence of the atmosphere. *Carrots*, sow the main crop in drills from 12 to 15 inches apart, covering the seeds evenly to the depth of about half an inch. Those for early and late use will be drawn while young, and may be sown broadcast in beds, or in lines 9 inches apart. *Cauliflowers*, keep the ground well mowed about them, as also about Cabbages. *Beet*, sow a full crop in drills about 1 inch deep, and from 15 to 18 inches apart. If possible, select a dry day, when the ground is in good working order for putting in the seed. *Cucumbers*, the young plants intended for the ridges to be kept stopped, and repotted if they require it. Sprinkle the plants in the frames early in the afternoon and close up; water more liberally round the sides of the frame when the heat of the day dries the soil. *Kidney Beans*, sow on a well-sheltered border, also a few Scarlet Runners and Haricot Beans; but we find all these succeed so well transplanted that it is best to provide for contingencies by sowing them in pots or boxes, and germinating them under glass; when well up, remove them to the open air, cover at night, and transplant in the beginning of the second week in May; they will come into bearing more than a week before those sown in the open ground, and will continue to bear quite as long; add to this the certainty of a crop, and the facility of protecting them in their earlier stages when they are so apt to be nipped by the spring frosts. *Peas*, continue to earth-up and stake them as they advance, taking care to fork-up or otherwise loosen the ground between the rows after the staking is done; let this be followed up, even if Spinach is growing between the rows, as that will be benefited by having the surface well stirred about it. Keep up successive sowings of Lettuces, Spinach, Radishes, and salads.

FRUIT GARDEN.

The process of disbudding Peach trees will now be in full operation. Watch the growth well, and remove but a few of the shoots at a time. Endeavour as far as possible to keep beforehand with the growth in disbudding, and not behind; for if you are behind you are often tempted, nay almost obliged, to take off more shoots at once than is proper, and the check thus given to the flow of the sap has very often the effect of causing the fruit to stop swelling, and eventually to fall off. Remove all the foreright shoots from Apricot trees, also a portion of the side shoots, but endeavour to distinguish those

which are likely to form short fruit-bearing spurs, which must always be left. Thin, also, the young canes of Raspberries to the number necessary for next year's crop. By this means the canes will be stronger, and will ripen better.

FLOWER GARDEN.

The cultivation of annuals for garden decoration has in some degree given way to the more permanent class of bedding-out greenhouse plants; yet some of the former will always find a place in the best-arranged gardens, and a pretty general selection should at the same time be grown for filling up vacancies in borders of herbaceous plants, bulbs, &c., and particularly for dressing-up the margins of shrubberies where the space between the line of turf and shrubs may be occupied with them, so as to hide the bad effects which bare soil always produces, and afford a gay appearance through the summer, and this at a trifling expense. For the latter purpose the present will be a favourable time for sowing, the ground having previously been well dug and prepared. The varieties are so numerous that it is scarcely requisite to give names; we will therefore only observe that the seed should be sown thinly, and as soon as the plants are large enough they should be well thinned to allow a free growth. Where the possessors of gardens can enjoy their country seats through the months of March, April, and May, it becomes an important matter to provide abundance of very early spring flowers. The early-flowering bulbs are too well known to need comment here; there are, however, a few old-fashioned plants which should never be lost sight of, and which should greet the returning spring from every nook and corner. Of such are the following:—The blue and white Squills, the Sisyrinchiums, the Dog's-tooth Violets, the Pulmonarias, the *Omphalodes verna*, the *Arabis* and *Aubrietias*, the various *Primulas*, with self Auriculas, and the lovely little *Sanguinaria canadensis*, not forgetting the old Christmas Rose, which forms as it were the connecting link between the expiring year and its successor; the *Colchicums*, autumn *Cyclamens* and winter *Aconites* having duly ushered it in. Such should be much more encouraged than they have been, for they must ever be favourites with the many. Amongst shrubs, too, the *Cornus mascula*, the *Mezerion*, the *Cydonia japonica*, the *Chimonanthus fragrans*, the *Ribes*, *Corchorus*, &c., should be much grown.

GREENHOUSE AND CONSERVATORY.

Any attention which will serve to prolong the beauty of the Azaleas and New Holland plants, &c., with which the show-house should now be gay, will be well bestowed, as where these are over it will in most cases be impossible to furnish the house with equally handsome specimens and the same variety of colours, &c., which these afford. Get shading into use without loss of time; also carefully examine the plants on the forenoons of bright days, and see that none of them are suffering for want of water, for with bright sunshine accompanied with drying winds, it will be no easy matter to properly supply plants with water, particularly specimens that may be pot-bound. In ventilating, endeavour while parching winds prevail to avoid allowing currents to blow through the house, especially near recently-potted specimens or plants not long brought from stoves. Bring forward the stock of plants recommended for blooming in July and August, by shifting such as require it, and allowing them more room. *Kalosanths* will require neatly tying-out; these form beautiful globular-shaped plants by a little management. *Fuchsias* will require a second shift, which should now be into their blooming-pots, using a light, rich soil for the purpose; also the different varieties of *Nerium*, so seldom seen, and yet we scarcely know more beautiful plants or any that repay cultivation better. Look to Scarlet *Geraniums* grown for specimens. Attend to repotting such as have been started after being cut back, and keep them moist and rather close until the roots have taken hold of the fresh soil. Give frequent attention to climbers in free growth, regulating the young wood before it becomes entangled. Keep the conservatory as cool by day as is consistent with the health of the inmates; this will keep the plants longer in bloom and be more enjoyable for parties seeing them.

STOVE.

Give every necessary attention to softwooded plants in free growth, keeping them near the glass and regularly stopped, so as to secure close, compact growths; also attend to supplying them with plenty of pot-room. Give air freely at every favourable opportunity, but guard against drying currents. Give proper attention to *Achimenes*, *Gloxinias*, and other summer and autumn-flowering plants. The latest succession of *Achimenes* to flower late in the autumn should now be placed in

heat. Repot and propagate Begonias. This is one of the most useful families of plants that can be grown. Orchids are now progressing fast, and will require attention in shading daily and gradually increasing the humidity of the house, so as to keep pace with the increase of solar light and heat. If the roof is covered with creepers, a little management in training them is required to effect a judicious shading of the plants beneath. See that plants on blocks or suspended in baskets are not allowed to get dry, which would have the effect of causing a check to the young growth, which should be encouraged as long as possible to obtain strong, healthy plants.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Put in the main crop of Carrots in good order. Planted a lot more Potatoes to succeed the earliest out of doors. Sowed just a little Beet for early supply, as May is soon enough for the main crops, small clean roots being more in demand than large ones like Mangolds. Planted out Cauliflowers; watered and earthed those under glasses. Sowed the main crops of Broccoli, Brussels Sprouts, Savoys, and pinches of Broccoli and Cauliflower, reserving the main sowing of Broccoli till a little later; these were branched and netted. Sowed also Turnips and Radishes, and secured by netting, generally sowing the two together—the Turnips 2 feet apart, and the Radishes between them, for the latter will be all gone before the Turnips occupy the ground. Gave plenty of air to Turnips, Radishes, Carrots, Potatoes, Lettuces, &c., under protection. Sowed Lettuces in the open ground, and transplanted those raised under protection. Have had more bolted Cabbages this season than we ever had, though the seed was sown in August—a circumstance partly attributable to the mild winter and the sharp frosts of spring, and partly to the hearts having been nipped by pheasants. Sowed plenty of garden Beans and Peas in semicircular drain tiles under protection, the young plants to be planted out and staked when several inches in height, for not a Pea, and scarcely a Bean, have we left, except those which were planted out, as the whole from three sowings have been cleared off by pheasants, though we thought we had beaten them by branches, strings, and ground being all smeared with tar. It did keep them off for a few days, until they became so determined that they did not care about tar on their feathers. We find that nothing will keep them off except small netting, either wire or string, so that they cannot put their heads in. We were in hopes that the tarring alluded to last week would have kept them at bay. We could not with propriety withhold this statement as to its inefficiency.

Turning from such outside annoyances, it is pleasing to obtain such gatherings of Sea-kale, Kidney Beans, Potatoes, and to see Peas coming on so nicely in the orchard-house. These orchard-houses are very valuable even for the production of early Peas, Lettuces, &c., with little trouble in spring. We thought we might venture seed of Kidney Beans out of doors, but a few sown have also been torn up; and we must sow them, too, in small pots, and then transplant. The next Peas we venture out of doors we shall stick as soon as sown, placing the stakes at least a foot from the row, running a tarred string on each side along the rows of stakes; and then the space between the latter we will stick with brushwood, and that may keep the pheasant's bill at a distance. Planting out when from 4 to more inches in height and staking at once is the safest method, except wire guards, or using string nets with small meshes, so that the gardener shall not be blamed for hanging the favourites.

FRUIT GARDEN.

Went on disbudding or dis-shooting the trees in orchard-house, in which the fruit is set so thickly, that one in a dozen, or twenty or thirty in some cases, will be enough to leave. Proceeded in dull days, and night and morning, with thinning Grapes, and attending to other work much as stated in previous weeks. We ought to have mentioned above, that though the tar has not quite kept off the pheasants, we have as yet been no more troubled with vermin in the Cucumber-beds, and that we have not perceived one single fresh mole-run on the premises since we dropped a little tar in the runs about three weeks ago.

ORNAMENTAL DEPARTMENT.

Here we have not been able to overtake the half of our work. Turfing, much needing to be done, we have been obliged to defer till we have a showery day. Lawns have been well rolled

preparatory to mowing, as the grass is now growing vigorously, and one of the least seen but most expensive things about a garden, will be wanting continual attention. In the general routine of gardens, a large lawn is constantly demanding attention from other departments where labour would be more profitably employed. A vast number of proprietors fail to perceive that it is better in every way to keep a rood, or an acre, in first-rate order, than ten roods, or ten acres, that always need attention, and never receive so much as ought to be given. Of course, we are well aware of the grandeur derived from a large lawn of tens of acres; all we contend for is, that there is anything but grandeur in attempting to keep up a number of acres, as is often done, with the labour power fit only for a small proportion of these acres. With all our advantages from mowing-machines, Daisy-knives, &c., it is generally best in particular lawns to run the scythe over them the first time.

Many herbaceous plants may still be divided, and such plants as Daisies, Primroses, and Polyanthus may still be divided in shady places, especially as they do all the better for transplanting every year. Polyanthuses are now obtained very fair from our seedsmen, and at one time we used to grow a great many of these border flowers; but since we have had so many birds about it is of little or no use, unless they were all securely netted, as the birds were sure to pick all the flowers as soon as they expanded, or even before they opened. The little honey at the bottom of the cups might be an inducement, in addition to the love of mischief. We have seen a good-sized basketful of flowers cut over in a forenoon.

The borders are now in good trim for sowing all the hardy annuals. Where beds are made of them they will come more regularly now than when sown earlier, and they will want but little looking after. Unless where beds are made, or lines of colour are desired, there is no better plan than scratching a circle with a stout stick in the old-fashioned way, sowing thinly in the rut, covering according to the size of the seed, and thinning the seedlings after they are large enough to be handled.

Half-hardy Annuals we often sow at this season in an earth pot, pricking-in some rotten dung on the surface, levelling it, and then placing some nice fresh soil on the surface. We then sow, cover with fine soil, patting down, and place under moveable sashes, kept close until the seedlings appear. Asters, Stocks, Marigolds, Zinnias, Indian Pinks, &c., do very well thus treated, without a hotbed of any kind, and being in the ground can look after themselves better than if sown in pots. Everything in a pot requires watering, and is subject to much greater changes than if the plants had been in the ground.

Primula sinensis, *Cineraria*, &c., should now be sown for winter-blooming. The best plan is to use well-drained pots or pans, and light sandy soil, with a little fine leaf mould or peat; press the surface level, sow the seeds regularly, cover slightly with sand or very sandy soil, press again, cover with glass, and a piece of paper over it, water in three or four days, and keep rather moist and close until the seedlings appear, and then give more light and air. Good plants of *Primulas* now done flowering may be divided or reduced, fresh-potted, and grown on again, and will make fine plants if first potted in small pots, and larger ones given as needed. These will bloom before the seedlings, and come in late in autumn. Good kinds of *Cinerarias* having nearly finished blooming may be cut down and planted in a shady place, where they will produce nice sucker offshoots, each of which when potted may be grown to be a large plant. Early herbaceous *Calceolarias* may be treated in a similar manner; and every shoot taken off towards autumn, with incipient roots, will make a better plant grown on and shifted from pot to pot than could be obtained by any doctoring or treating of an old plant that had once flowered. This is the secret for keeping on favourite kinds of the herbaceous section true. One healthy shoot in August may be a plant half a yard across in April and May.

Made up a temporary protection between two pits, and there removed quantities of Scarlet Geraniums, &c., in boxes, which we have not been able as yet to plant out temporarily or pot, but to some of which we will do so as soon as we can. We wanted all these cleared out of vinerias, &c., as, though we have kept them back by a cool temperature, the heat the Vines will now require will be too much for the Geraniums, and if continued longer would make them tender. Besides, we want room to go about the Vines to rub off extra shoots, and room on the ground for Fuchsias, Camellias done blooming, &c.

Commenced moving *Calceolarias* from striking-pit, and turning them out into earth-pits, where they will have a month or

MUSHROOM-BED UNPRODUCTIVE (*G. Williams*).—We have little hopes of the Mushroom-bed coming into production that was spawned in November and has yielded no Mushrooms. What the cause is we could not say unless we knew more. The spawn might be bad, or the bed might be too hot, or too wet, or too dry.

LEAN-TO VINERY (*A Subscriber*).—Your border 5 feet wide will do for an eight-foot-wide house, more especially if you have a border also inside, and plant the Vines inside, with means for the roots finding their way outside. For such a small house your five-inch metal pipes will do for a flue, provided you have a sort of brick cesspool at the turn-angles into which the pipes terminate, and this being covered with a tile, you can raise the flue at any time, and run the brush through the pipes. This will require to be often done in such narrow pipes.

PEACH AND NECTARINE BLOSSOMS FALLING (*E. C.*).—We have closely examined the blossoms sent. The male fructification seems strong and vigorous, but the female parts of the flower very weak. We attribute this to three circumstances: First, the youth of the trees, having only the growth of 1865—that is, if the trees were young when planted. Secondly, their free growth instead of that being arrested last autumn. Thirdly, the too great dryness at the roots in spring. Greater dryness in the autumn, and moisture at the roots given gradually after Christmas might have kept the blossoms on. In the case of such young trees, however, a quantity of fruit this season would have been anything but an unmixed advantage. The young growth seems all right, and we have no doubt that the trees will do well next year. A few blossoms fell from some of our trees that had become rather dry, but it would have saved much labour in thinning if more had dropped. See what has been said frequently in "Doings of the Last Week" as to watering gradually when the soil becomes dry. Dryness is a great help to ripening wood in the autumn. If the dryness is continued until the buds swell, the flowers are apt to drop or be imperfect. If, after such dryness, all the roots are soaked at once, the too great stimulus is apt to throw the buds off. Moderate moisture after Christmas is the easiest and safest plan for beginners.

FLOWER-BED (*G. B. B.*).—Your bed would be improved by mixing *Ricinus borbonensis*, *microcarpus*, and sanguineus, with communis, and such *Cannas* as *Warszewiczii* and *discolor*, with *indica*; then as you propose; but a band of *Golden Chain Geranium* with the flowers taken off would greatly improve all.

AERIDES ODORATUM LEAVES SPOTTED (*J. Bayley*).—The spots are caused by a parasitic fungus, such as is depicted in the first Number of the "Journal of the Horticultural Society," published last January.

BEGONIA FUCHSIODES and **B. KNIGHTII** NOT FLOWERING (*Idem*).—Your plants do not flower because you keep them too warm and close, and they consequently grow amazingly, but do not bloom. Cut away all the old stems, repot, and encourage the young growths, giving plenty of air, with all the light practicable. Secure a good growth, ripen it well by exposure to light and air, and dryness at the root, and keep the plants in a temperature of from 50° to 55° in winter, and they will assuredly bloom; but you must give them a rest instead of keeping them constantly growing as we imagine you do.

BEDDING-OUT SEEDLINGS (*Eboracum*).—*Amaranthus melancholicus* ruber, *Petunia*, *Verbena venosa*, *Phlox Drummondii*, sown in a hotbed in April for bedding, will only need pricking off when sufficiently large to handle; afterwards continue to forward them in heat. They will make nice plants for planting-out by the end of May, and those cultivated for their flowers will bloom well late in summer and in autumn.

MEYENIA ERECTA and **BOUGAINVILLEA SPECIOSA** (*A Subscriber, Bradford*).—*Meyenia erecta* is a stove plant, and requires a compost of turfy fibry peat and loam in equal parts, with a free admixture of silver sand. It requires plenty of air and light, with good drainage, and is then a free-blooming plant, needing well cutting-in to keep it compact. The *Bougainvillea speciosa* needs a warm greenhouse, and should be encouraged to make a good growth in spring, and by August be exposed to the full sun in a greenhouse, with abundance of air, keeping drier by half at the root than when growing. The main point is, obtain a good growth and well ripen it. Any further information we shall be glad to furnish.

INSECT IN TAN (*H. A. G.*).—It is an Acarus or Mite, quite harmless, and living on decaying vegetable matter.

BRUGMANIA STAVEOLENS CULTURE (*J. J. D.N.*).—The plant would do admirably planted-out in the border of the conservatory, but it requires abundance of air and light. It must be kept dry at the root in winter to induce rest, and would not, therefore, do planted-out in the borders of the conservatory in which the *Camellias* are; but you might partition off by a brick wall a part of the border for the *Brugmania*. Drain it well, and for soil use 15 inches of turfy loam two-thirds, and one-third leaf mould, with a free admixture of sand. A pit 18 inches square would do, top-dressings of rich composts being given in spring. The plant must be syringed freely in summer to keep down red spider, be well supplied with water, and occasionally with liquid manure. Diminish the amount of water in October, and keep the plant dry in winter. In spring cut-in the head, thin it where too thick, and merely shorten if not too thick. Frequent syringings and copious watering will induce free growth, and the plant will flourish, only it must have plenty of light and air and be kept free of red spider.

CEBRONELLA CANARIENSIS (*A Subscriber*).—This, usually called *Dracopcephalum canariense*, Canary Dragon's-head, or *Balm of Gilead*, belongs to the *Lamiaceae*, or *Dead Nettle* Natural Order. Height, about 3 feet; leaves green, and the size of those of the *Archangel* or *Dead Nettle*; flowers, pale purple; the plants not more than 2 feet apart in a bed. It requires a slight protection in winter.

RHODODENDRON (*C. F.*).—Decidedly it is not *Falconeri*, which is white with a chocolate-coloured spot. It appears identical with that shown by Mr. Cox at the Floral Committee last Tuesday under the name of *R. campylocarpum*, but which does not correspond with the plant figured under that name in the "Botanical Magazine" for 1857. Mr. Cox, we believe, has compared his plant with Dr. Hooker's work on *Indian Rhododendrons*, and considers it is the true *R. campylocarpum*.

NETTING TO EXCLUDE BIRDS FROM CHERRY TREES (*H. C.*).—When made on purpose for this, a one-inch mesh will not be too close, as small birds are apt to wriggle through. Very often it happens that netting of a large mesh is used and put on double. It is not advisable to tighten netting at any time; let it hang loose and free, and the mesh will be closer; besides, if hempen netting be used and made tight, the contraction with rain will bind somewhere, perhaps to the injury of the bearing spurs of the tree.

GRAFTING BUCKLAND SWEETWATER OR DUCHESS OF BUCCLEUCH GRAPES ON LADY DOWNE'S (*A Subscriber*).—We can hardly give an opinion of the merits of these two Grapes. The *Duchess* we know to be of excellent flavour, perhaps the very best grown; but it is far from being a showy Grape, and we expect will not figure much at exhibition tables. Either of these, however, will do on *Lady Downe's*, and we should certainly prefer that stock as it is there, to removing it and planting anything else in its place. As you are anxious to multiply varieties, perhaps the stock will admit of two grafts, and then you can have both kinds. We would, however, recommend you to try *Alicante* in your late house; it promises to rival *Lady Downe's* in keeping, and is a larger bunch. Much as has been said about *Vine stocks*, it is not unlikely but it will be found out hereafter that each variety on its own roots is as good as any.

SQUIRRELS DESTROYING GOOSEBERRIES AND WALNUTS (*A Twelve-years Reader*).—We fear we have no remedy to offer to this unusual enemy. Netting, we imagine, will be ineffective with the *Gooseberries*, but it may be tried; and we have not much faith in tying gorse around the stems of the *Walnuts* if the tips of the branches reach within 6 or 8 feet of the tips of other trees to which the squirrels have access, for the nimble depredators take flying leaps a long distance. Shooting, we apprehend, is the only resource. We have often enough known rooks to carry off *Walnuts*, and of course squirrels are very fond of them, and if your garden be in the vicinity of game preserves, we expect you will suffer; but we never heard of *Gooseberries* being destroyed by squirrels before, and perhaps the publicity given to your case may induce some of our readers who have suffered in like manner to record their remedy, if they succeeded in discovering one.

PLANTS (*W. R. J.*).—Those you name are recently introduced. *Scbizostylis coccinea* is a half-hardy bulb. *Osmantha ilicifolia* variegatus nanus, Japanese evergreen shrub, probably as hardy as the *Camellia*. *Thujaopsis dolabrata* is related to the *Arbor Vitae*, and quite hardy, and so is *Euonymus japonicus variegatus*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 21st.

DATE.	THERMOMETER.						Wind.	Rain in inches.	GENERAL REMARKS.
	BAROMETER.		Air.						
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 15	30.237	30.109	60	43	57	47	S.W.	.10	Fine; cloudy; rain at night.
Mon... 16	30.259	29.846	58	42	51	47	S.W.	.04	Rain; densely clouded; fine.
Tues... 17	29.340	29.937	59	28	51½	48	S.W.	.00	Fine; brisk wind; fine; very fine; slight frost.
Wed... 18	29.959	29.937	68	32	52	48	S.W.	.00	Clear; quite cloudless; very fine throughout.
Thurs. 19	29.881	29.733	65	33	52	48	S.	.00	Fine; very fine; fine at night.
Fri... 20	29.906	29.815	58	36	52½	48½	S.W.	.14	Fine; very hot sun; cloudy; fine; rain at night.
Sat... 21	30.220	30.026	64	29	52	48½	N.W.	.00	Fine, slight haze; very fine hot sun; very slight frost.
Mean	30.050	29.920	61.71	35.43	51.71	47.85	..	0.28	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

COMPARATIVE HEALTHINESS OF DIFFERENT KINDS OF FOWLS.

It is said that a boy on the top of a Swiss mountain throws a snowball, which becomes an avalanche and destroys part of a village. In an inverse sense we cannot help thinking that

our poultry experiences may in some very small degree lead to measures that may form one of the many trifles that will eventually make the rinderpest a thing of the past, susceptible of treatment; not requiring the Draconian method of stamping out by wholesale slaughter, nor imposing restrictions that will limit our supply of meat for a long time to come.

We left off by saying, at page 279, that when the *Dutch*, from whom we imported the birds that spread illness and death everywhere, found that these birds from their diseased state when they arrived were unsaleable, they adopted precautions

that caused the birds to arrive in better condition. But people had learned their lesson. It was not enough to get fowls stronger than those they had had, but they wished to possess some that would not keep them in constant excitement as to whether the hearty, frolicsome fowls of Tuesday would not be the moping moribund things of Thursday. They found certain breeds were prone to disease, and they gave them up. Hamburgs and Polands went to the wall. These were the breeds that with very few exceptions brought contagion with them.

As we are writing on poultry, and not on the cattle plague, we must observe here, that in many parts of Yorkshire Hamburgs had been known for years as healthy birds, and remained so; but few yards introduced imported birds for the sake of fresh blood without paying the penalty in the shape of sickness. Spangled Hamburgs, or Moonies, are not included in the breeds that could be regenerated by foreign blood. They are little, if at all, known abroad. Common-sense men did not trouble themselves about causes, but accepted results. Hamburgs and Polands were subject to roup; then they would not keep them, and they gave them up. Scientific men thought they would inquire into causes. Dr. Horner, of Hull, was the first, as he was, perhaps, the most distinguished. He first said the roup was not contagious. Everybody laughed at him, but everybody was wrong. It is not contagious. You may take the roupiest fowls that were ever seen, and may put a dozen with Spanish, Brahmas, and Cochins. Not one of these will take it, or be affected by it. Not so with Hamburgs or Polands; it would almost seem that with them contact with a healthy imported Dutch fowl would produce roup, as we are told the contact with a thoroughly vaccinated European gives smallpox to the Indian. There is a predisposition.

Hamburgs in England now, without contact with foreign birds, are as healthy as any others. They are bred here and acclimatised. Something of the same may be said for the birds recently introduced from France. No one can deny the merits of the Crève Cœur and La Flèche breeds, but numbers will endorse what we write when we say that even the healthiest undergo a period of sickness, especially the cocks. It is difficult to assign a cause. We have imported them from a low damp district in France, we have put them on a dry gravelly soil with every appliance we know of that is conducive to health, and yet the cocks sicken unto death; the hens sicken and swell at the eye and face, but they, nevertheless, are rubicund, they lay and do well, and acclimatise. The same cannot be said of the Houdans. We have imported them at the same time with La Flèche and Crève Cœur. It is our duty to try experiments, and we have given them the place where they would be subject to every disadvantage, but they are veritable gallinaceous Mark Tapleys. They are always jolly. They ail nothing, and nothing ails them. They came from France together, and they have been left together; one grew worse, and the other improved in condition daily.

Our counties that are not in the first odour for high farming, and that have kept to their own stock are free from cattle disease. We have milk to drink, butter to eat, and our stalls are full of calves. They are healthy at night, and we look at them in the morning without misgivings.

Poultry fanciers are not retrograde people. Professional men swarm among them. These generally draw correct conclusions, and by their help poultry-keepers have done the same. They found certain breeds were prone to pest, and under some circumstances sure to have it. They found others never had it, either spontaneously or from contact. They have kept to the latter and eschewed the former. The result is, that which threatened to destroy poultry years ago is almost unknown now. May not the same be true of certain breeds of cattle?

RAILWAY CHARGES.

In sending you the fourth list of those who have replied in the affirmative, I may mention that several have written to me expressing their approval of the effort, but declining to do anything in the matter, believing it hopeless. I can very well understand that an individual effort to alter these charges would be hopeless, but I am not yet convinced that it is so under our present circumstances, and I trust that events may prove the contrary. I have had two or three refusals; but I have been more than astonished by one letter, containing quite a glowing eulogy of one company. This was, I suppose, to prove how badly exhibitors are treated, for our French neighbours say that "the exceptions prove the rule." Certainly it

was a shock to my nerves. However, almost by the same post came a letter from one of the largest and most successful exhibitors in Yorkshire, in which he said he had shown 239 pens during the past year, but only sent 63 pens by rail, the cost by this conveyance being so enormous! Surely this is a case that speaks volumes. In a month or six weeks I propose to send you the last list. I have therefore to ask all who feel interested in the matter to communicate with me. Many have not replied at all. As regards the signing the requisition, it is not necessary that a subscription in money should be made in every case. The railway companies will know nothing of these amounts. They are simply published in the columns of "our Journal" as a kind of acknowledgment. If any who have written to me feel themselves aggrieved at not receiving replies I must beg their kind indulgence, as my spare time is taken up in communicating with other exhibitors.—JOSEPH HINTON (Y. B. A. Z.), *Hinton, near Bath.*

J. Holme.	H. Tomlinson.
J. D. Newsome, 10s. 6d.	Mrs. Proctor, 10s. 6d.
H. Pickles, jun., 10s. 6d.	W. R. Bull.
R. Tate.	"Clerics," 2s. 6d.
Mrs. Young, 5s.	Rev. F. Watson.
Miss E. Beldon.	Samuel Shaw, 10s. paid.
Rev. F. Taylor, 10s. 6d.	John Gould.
O. A. Young.	A. R. Jessop, 5s.
A. K. Wood.	Joseph Wood, 10s. 6d. paid.
J. Dixon.	G. Clements.
Rev. W. Serjeantson.	J. Clark, 10s. 6d. paid.
M. W. Stobart, 10s. 6d. paid.	Rev. A. Dyas, 10s. 6d. paid.
Wm. Massey.	Rev. A. G. Brooko.
F. Pittis, jun., 10s. 6d. paid.	Mrs. Hay, 10s. 6d. paid.

THE DISQUALIFIED PEN AT WIGTON POULTRY SHOW.

No one can be more sorry than myself that the letter from Mr. A. K. Wood, of Burnside, Kendal, inserted in your last week's Journal, should necessitate still further observation respecting the "disqualified" pen of Silver-spangled Hamburgs at the late Wigton Show. As, however, this gentleman's letter conveys, by the most direct inference, to the minds of those of your readers who are unacquainted with the actual antecedents of this particular bird, that the hen's comb was beforetime firmly set on the head and upright, it becomes my imperative duty, in correction, to reply.

As the owner openly assures us he is "entirely ignorant of how the needle got into, or who put it into the comb, as those who saw it pulled out, and that he is prepared to make an affidavit to that effect"—I beg to assure Mr. Wood (though personally unknown), the latter course is entirely unnecessary, for I am quite ready to give full credit to his personal assurance alone; whilst to my mind affidavits in such cases are altogether misplaced. After stating "he is perfectly certain she was not trimmed in any way for the [Wigton] Show," Mr. Wood proceeds thus: "How long the needle had been in the comb to me is, therefore, a problem I am unable to solve. I am sorry to see your reporter's concluding remark, as it seems to hint that it had been put to keep her comb straight. I have repeatedly been to see her since this, to me, unpleasant affair has happened, and I confess I cannot see that her comb droops on any side, and I scarcely think the Judge would deny that the pen was the best, even after the needle was withdrawn. Do not mistake me: I do not complain of losing the prize under the circumstances, as, of course, the Judge and Committee would not be aware of my ignorance of the needle's presence." As to the probability of the needle being imbedded in the comb by accident, the fact is such an occurrence amounts to a sheer impossibility, as any one may individually test by endeavouring to force a needle lengthwise into the comb of any fowl already killed for the table. The comb's substance, being rather cartilage than muscle, offers a very considerable resistance to such an impalement, and the excruciating agony produced if the attempt were made on a living fowl could only augment the difficulty. I find that though the extracted needle appeared to unassisted vision (as was described in your report) "broken off abruptly at the eye," by the additional aid of a very powerful microscope in my possession, it evidently proves to have been not broken off at all, but nipped off with a pair of very sharp-pointed pincers. This renders the probability of mischance more remote than ever. As an arbitrator, it certainly in no way devolves on myself, as a duty, to seek out the actual transgressor, but simply to unreservedly expose the deception practised. Still, as Mr. Wood declares himself "unable to solve the problem of how long the needle had been

in the comb of his hen," a few general items may tend to aid him in his investigation. On January the 15th last, this cruelly ill-used fowl was shown with another equally good hen in all points at the Walsall Poultry Show. The second hen was perfect in comb, but the one in question had her comb loosely hanging on one side, and for this sole reason I only "highly commended" them. Almost immediately after the decisions were made public at Walsall, a very angry and hotly-worded telegram from Mr. Wood demanded the fowls' "immediate return by the next train," with a very abrupt comment on my decision of a high commendation only, that certainly here needs not repetition. From Mr. Wood's present letter, this telegram seems to have slipped from his memory altogether. Of course the Committee did not comply with the request.

After the receipt of the telegram, and before leaving the committee-room, I answered the inquiry of the gentlemen present by at once referring them to my award-book, and opposite the number of this pen was the pencil note made by myself whilst judging—"hen's comb over." As after the receipt also from Mr. Wood of a very angry letter to the Walsall Committee, and again another of like nature to myself, it was suggested by some one else present "It would be well to be able to give conclusive proof of the individual identity of this particular hen in case of any prolongation of the dispute"—I myself placed a private mark on one of her feathers; but nothing farther after that time transpired. At Wigton, after the discovery and extraction of the needle, I at once looked for this feather, marked by myself at Walsall, plucked it out, placed it in an envelope, and it remains still in my hands. I have permitted the needle to be inspected by two medical friends, whose joint opinion it is, "judging from the corrosion of the needle alone, without seeing the bird itself when suffering, it might possibly have been imbedded in the comb some few weeks, or even months, and that though Nature was attempting the removal of this foreign substance by a process closely approximating to the exfoliation of a splintered bone, it would most probably, if unaided, have taken even yet a considerable time to work out a thorough cure." Any one, therefore, who has suffered from a thorn in the flesh only can give a very faint guess of the suffering endured by this poor hen prior to the extraction of the needle.

Mr. Wood suggests the question, "That he scarcely thinks the Judge himself would deny that the pen was the best, even after the needle was withdrawn." I am decidedly of that opinion, and will even also add, that I firmly believe that Mr. Wood has the best pair of Silver-spangled Hamburg hens in England, if the comb of this one hen should now remain as "free from drooping on any side," as represented in his present letter. Time, I fear, will prove this not to be the case; the comb's ultimate uprightness, being, to my notions, extremely problematical.

In conclusion, I did not myself at Wigton (where she was shown singly), recognise this from the fellow hen that with her I have so frequently seen at other poultry shows, for her comb being erect, I passed her with first honours, as, no doubt, most unwittingly, I have many other deceptions of a like character (perhaps far more than I conceive), from different exhibitors at a variety of meetings.

It is in my opinion, however, the fixed duty of any public arbitrator, when deceptions are in the first instance detected, or afterwards revealed, as in this case, from information received, to visit the offence with open exposure of the affair, and immediate "disqualification," carrying out the unvarying rule indifferently to all alike.—EDWARD HEWITT, *Sparkbrook, Birmingham*.

NOTES ON PIGEONS.—No. 3.

FORMER ENGLISH WRITERS ON THE SUBJECT.

"THE TREATISE" OF A.D. 1765.

AFTER John Moore's "Columbarium," published, we must remember, in 1735, there was, as far as I can learn, a pause in regard to the issue of works on fancy Pigeons. I follow the idea that the book did not sell, or that few copies were printed, and that, as with the works of many disappointed authors, certain copies were destroyed in the writer's own house in a fit of disgust. People do not like to be reminded of a failure; and a whole bookcaseful of an unsold edition (I once saw such a bookcaseful in an old clergyman's house, whose wife had in an unfortunate hour written two volumes of terrible trash on the Church catechism)—must be a painful reminder. Be it as it may, Moore's work is a marvellously scarce book now; but

so good a book must have been prized by genuine Pigeon-fanciers; it must have been welcomed by such, and pored over many a winter's evening by the fireside. But think of what England was in 1735. George II., of uninteresting memory, was on the throne. Walpole—every-man-has-his-price Walpole—was bribing all round. The state of manners and morals was deplorably low. Gaming was the vice of the age. Gentlemen gambled at their clubs, ladies in their drawing-rooms, and it was no unusual thing to lose or win £10,000 in a night at cards or dice. Within ten miles of where I am writing an estate of great value came into the hands of the noble family who now possess it as a stake won at cards, and its total value then was less than its yearly rental now. If such was life in the higher classes, we may be sure that the lower were good imitators. At any rate, it was a time when the taste was low, and pure home pleasures not much cared for—when there was little love of poultry, though great love for fighting cocks. But much was against the circulation of any book written upon what always has been, and always will be, but the hobby of a minority: thus, each county was more isolated from other counties than the whole country now is from France; books travelled down into the provinces very slowly; those were the days of slow coaches and bad roads, when a wooden-legged man, being offered a ride by the coachman, declined, saying, "No, thank'ee; the fact is, I'm in a hurry, and so must walk." Hence, to come down to our subject, Moore's book would have, I fear, few readers out of London. I can, however, well imagine the delight of, we will say, some Yorkshire fancier (Yorkshire always has been foremost in these things), upon receiving from a town friend and brother fancier—some cousin gone to seek his fortune—a copy of Moore's "Columbarium." But yet in these days each man with a hobby had, as a rule, to depend on his own immediate neighbourhood for supplying him with friends having a fellow feeling, as means of communication were so difficult. Hence it was that breeds of fowls remained in certain counties and localities; thus I have heard old people belonging to Lincolnshire tell of zealous Game breeders riding with their favourite birds carried on their saddles; but these, of course, would be short journeys.

How many or how few readers old Moore found, he found one who admired and approved his work so heartily, that he reproduced nearly the whole book. This was the author of "A Treatise on Domestic Pigeons," printed and sold by C. Barry, Fenchurch Street, London, in 1765, just thirty years after the publication of the "Columbarium." I have a first edition lying before me as I write. Strong and very dark with age is the old calf binding, and yellow the substantial leaves. It is by no means closely printed, but contains only 144 pages; but we must add to them sixteen pages of preface. It must be noticed that the writer does not give his name; but he dedicated his work, or rather compilation, to one John Mayor, Esq. In a very lengthy title-page the writer tells us his work was "carefully compiled from the best authors." The plural might almost have been spared, as it is chiefly from Moore, and very frequently even word after word. There was one great addition, however, of which the lengthy title-page informs us in these high-sounding expressions, "Illustrated with a frontispiece, and cuts elegantly and accurately engraved from life by the most able and eminent artists, under the immediate inspection of very experienced fanciers." Moore had deplored the want of illustrations. He says "I am very sensible that proper icons [a queer word for pictures] are of very great service to illustrate a work of this nature; but this piece being in its kind new, and not being able to guess at what reception it may meet with from the world, I knew the expenses of exact cuts would swell the price too high for many that may have a mind to purchase this work; and on the contrary, that if they are not delineated with the utmost accuracy according to their various characteristics, they only puzzle the mind, and render the description of them more obscure; and therefore I choose rather to have none than bad ones." Wise John Moore! But the author of the "Treatise" evidently knew the value of pictures had or good, and wished his book to catch the eye as well as please the mind.

The "icons" of the "Treatise" are thirteen in number, and I cannot say much in their favour. First, the frontispiece presents us with a portion, I presume, of the interior of a loft. On the floor is the hopper, on which stands a Pigeon meant to be an Almond Tumbler. In front of the hopper stands a mouse in a supplicating attitude, while a skinny cat is pretending to look at the water-bottle (an inverted carboy), to her right, while of course she intends to catch the supplicating

mouse on her left. Did mice pray for their lives in the early days of the reign of George III.? or did they, as now, run away at the sight of a cat? In a dark recess stands an egg-basket with two eggs in it, set on a piece of stone, the whole looking very like one of those birds' nests you see as ornaments on a college mantel-piece. Something like a couple of rabbit-hutches hang up high on the wall, and a landing-net hangs on the end of the hutches. The doors of the hutches are closed.

In regard to the other "icons," we have an Almond Tumbler that would not most certainly take a prize in these days; a Mottle that any fancier would kill at once, being painfully light-coloured; then comes a Carrier shaped like the little birds one's children cut in paper with a pair of scissors. A Dumpty Fowler follows, being fearfully thick in the waist; a Leghorn Runt intensely ugly; and then come a charming Jacobin, which gives relief to the eye; a Nun, none of the handsomest, an Owl better-looking, and a Turbit very so-so. Then a Fantail robbed of its gracefulness, a shameful robbery indeed; a Trumpeter exceedingly like the Mottle, with tiny tuft and top-knot, and o'er-short boots; next a fair Barb, and finally a Lace. Unlike Henry VIII.'s Flanders mare, fancy Pigeons even in the time of the "Treatise" were much better-looking than their portraits, or few people indeed would have kept them.

The "Treatise" passed, I imagine, into the hands of many, as it is constantly quoted with or without acknowledgment by succeeding writers. The book ought to have been called "A Second Edition of the Columbarium, with Additions." Thus we have in it the first mention of the Bald-pated Tumbler and the Beard, and of the beautiful Black and Yellow Mottles; also the Lace and Frillback are described for the first time. Then we have here and there an additional bit of description, as in the fuller account of the Owl; then a practical remark, as in the case of the Leghorn Runt, drawn from the writer's own experience. Although the compiler of the "Treatise" did not act quite fairly to old Moore, yet his compilation did much good. The pictures—and our forefathers were not hard to please—helped to bring the book into notice. Young people, attracted by the cuts, not being severe critics, would cease to be allowed to keep fancy Pigeons, and "Love me once love me always" might be the motto of these charming birds. Then there are four booksellers' names attached to the book—four interested in its sale; and so the "Treatise" made its way, and made Pigeon-fancying more and more popular. Hence let us give a word of praise to its compiler, though his name we know not and never shall know.—WILTSHIRE RECTOR.

BURYING A HIVE.

In the autumn of last year a cottager in this locality, after having brought his hives from the heather, found one of them very light, and it was daily becoming more so, in consequence of the bees in his other hives having made an attack upon it, and they seemed likely very soon to complete their work of spoliation. The owner, after trying several plans to keep off the marauders, but without success, saw no chance of saving the colony from the lawless attacks of their neighbours, except by entire separation from them. The following is the method he took to effect this, regardless of results.

A pit was dug in the ground; into this the hive, floor-board and all, was put, then packed round, or in a manner thatched over with straw to the depth of several inches; over the straw was placed the soil, around and above, forming when finished a small mound. The hive was, in short, literally buried, with no apparent means of air gaining admission. It was buried on the 8th of November, and exhumed on the 12th of March, having been fully four months in its subterranean home. On lifting it out, to the owner's surprise as well as delight, he found the inmates lively and well, and on examination could find no traces of their numbers having diminished. They are still very active and working well, bidding fair to rival their more favoured neighbours and once implacable enemies. I am sorry I cannot give the weight of the hive when buried, nor when exhumed, but the sensible decrease was very little.

I am not aware whether this plan has been much practised or not, or whether it is consistent with the natural habits of the bee. The only other similar instance of which I have heard was that of a hive left on the hills in autumn, and which in early winter was encased in snow, and remained so till late in spring. It worked well all the season, and at the close rewarded the owner with a large quantity of honey. Would not this plan of burying in the winter be admissible with weak and light stocks? The darkness and cold would induce a greater

degree of dormancy in the insects.—J. A., *Whittingham Gardens, Haddingtonshire.*

[The successful result of this experiment was doubtless owing to the straw packing, which protected the hive from moisture and insured sufficient ventilation. A similar method of avoiding the intense cold of the winter is sometimes resorted to in Germany, and, we believe, also in America; but it is generally deemed more advisable to deposit the bees in a dark cellar or outbuilding adapted for the purpose, instead of resorting to actual interment.]

OUR LETTER BOX.

CATEEA DUCKS (H. C. P. G.).—All that we know about them is contained with a drawing of them, in the "Poultry-Keeper's Manual," published at our office, price 7s. 6d. We do not think that they have been introduced into this country.

INCUBATION (Mrs. Gifford).—We published what we were told by a reliable authority, but, as we have heard no more upon the subject, we conclude it has failed. Brindley's we have seen and should employ if we required one.

HENS WITH SWOLLEN ABDOMENS (S. S. Woodlands).—The swollen, shiny, red abdomens, accompanied by thirst, demonstrate that their egg-systems are very much inflamed. They are fed too liberally and kept too warm. Give each a dessert-spoonful of castor oil, no corn, but boiled potatoes mashed up with a little barleymeal, a pill containing one grain of calomel and one-twelfth of a grain of tartar emetic, three times with intervals of a day. Give abundance of green food, especially lettuce and grass.

FOWLS DYING SUDDELY (Wm. Watt).—"Suddenly dropping down dead" is too indefinite a description. If they had previous twitchings of the head, or fell, or were giddy, death arose from apoplexy, a blood-vessel of the brain having given way. This usually arises from the birds being too fat. A dessert-spoonful of castor oil and a low diet, such as boiled potatoes with a little barleymeal, no hard corn or animal food, but plenty of grass and lettuce leaves.

VARIOUS (Salus).—The cross you mention (Cochin and Chittiprat), would hardly produce a good sitting hen, and we are not surprised she left her eggs. The symptoms you mention are those of gapes, but adult fowls are not subject to them. We should therefore believe she has a cold. This would cause mucus in the throat, and the action you speak of is caused by the desire to get rid of it. Your friends' chickens die of gapes. Small pills of camphor, and camphor in their water, will cure them.

FOWLS BREATHING WITH DIFFICULTY (A. E. N.).—Your fowls are only suffering from cold and damp weather. Dry days and warm nights will cure them. You will find benefit by giving them occasionally a pill of camphor the size of a pea, and by putting some in their water. (A. Y. Z.)—The treatment recommended above, with the addition of bread and ale, will suit your case. Keep them on the driest spot you have. The pill of camphor for a chicken should be about the third of a pea, and their water should be strongly impregnated with it.

FOOD FOR FOWLS (Harriet).—There is always a difficulty in naming a proper quantity of food, unless the nature of the run is fully known. One yields three times as much natural food as the other. Six large fowls will consume more than a breakfastcupful of corn in a morning if their run affords them nothing. Your middy meal is a sorry one. There is little support and no health in potato peelings. The little good in this food is from the meal. Give them the cupful of meal slaked with water, and minus the peelings. Feed your young chickens on chopped egg, bread and milk, crumbs, table scraps cut very fine, bruised wheat, and give them beer to drink. Your feed is neither good enough nor sufficient. At the same time we can lay down no rule for you, you must draw your own conclusions. Feed them in the morning so long as they will run after and appear anxious about the food; when they become listless give no more. Follow the same rule midday and evening. They will eat more at first than they will afterwards, because they are in low condition. Afterwards, they will eat less, but you will always find some irregularity in quantity. You must not let them have food by them. Nature at this time of year teams with food on the surface of the earth where it is grass land. When they have had enough from your hand they will spread over the ground, and find a hundred things we cannot perceive, but that are all beneficial to them. Let your chickens have the run, but keep the hen under the rip till they are two months old. Let them have dust or ashes to bask in. If you follow these rules you will rear all your chickens.

DUCKS NOT LAYING, AND CASTING THEIR FEATHERS (Ruth).—Your Ducks are poorly fed. Potato peelings and Indian corn are not good enough. Give them whole oats, and for a time they will want plenty of them. If you do this you may add the kitchen scraps, and they will do well. The casting of perished feathers at this season of the year in poultry is like the moult in animals—a sign of bad and low condition, arising generally from being fed in quantity with that which lacks quality, or from lacking something Nature demands. Your Ducks have plenty of exercise, but, like Oliver Twist at meal times, they ask for more. Give it in the shape of oats, and it will expedite their recovery and their laying if you feed them first in a milkpan. Put a large sod of growing grass at the bottom, then put a layer of oats, and cover the whole with water. Eschew potato peelings: the whole root is poor food; but when you give only the refuse it tends to poverty, the plumage perishes, and eggs are desiderata.

EGGS NOT HATCHING (G. M. F.).—The heat in your incubator at some time went down too low. Life was generated, but it was allowed to perish. There are no means of ascertaining the fitness of eggs for sitting; but you can ascertain at the end of four or five days whether the process of hatching is going on satisfactorily.

GOATS (S. E.).—As the period of gestation is five months, kids might be produced twice in the year, but it would weaken the mother. She continues to breed until six or seven years old.

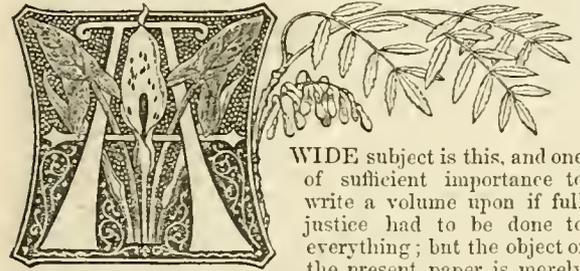
REMOVING BEES BY RAILWAY (J. Collin).—The great risk of removing bees in June or July arises from the probable heat of the weather. If, however, you can choose a cool day (night would perhaps be still better), and contrive to give plenty of air by tying the hive up in a cloth of open texture, such as cheesecloth, we should think that under your own charge they might travel safely.

WEEKLY CALENDAR.

Day of Month		Day of Week		MAY 1-7, 1866.		Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
				Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	Days.	m. a.		
1	TU	St. Ph. and Jas. Prince Arthur		61.7	39.7	50.7	14	9 4	20 7	1 9	35 5	16	9 2	121		
2	W	Acacia grandis. (Born, 1850.)		62.9	39.5	51.1	14	32 4	21 7	55 9	11 6	17	9 9	122		
3	TH	Acacia Drummondii.		61.8	40.3	51.0	18	30 4	23 7	45 10	52 6	18	8 16	123		
4	F	Adenandra fragrans.		62.2	38.5	50.3	14	29 4	25 7	31 11	39 7	19	8 23	124		
5	S	Adenandra uniflora.		62.4	38.6	50.6	20	27 4	26 7	morn.	34 8	20	8 28	125		
6	SUN	ROGATION SUNDAY.		61.7	38.9	50.3	15	25 4	28 7	11 0	34 9	21	8 33	126		
7	M	Anthocarcis viscosa.		59.4	39.7	49.6	17	23 4	30 7	46 0	38 10	(	3 38	127	

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 61.7°; and its night temperature 39.3°. The greatest heat was 84°, on the 6th, 1863; and the lowest cold 20°, on the 2nd, 1855. The greatest fall of rain was 1.26 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

SEEDS, AND WHAT TO DO WITH THEM.—No. 1.



WIDE subject is this, and one of sufficient importance to write a volume upon if full justice had to be done to everything; but the object of the present paper is merely

to offer some remarks on the seeds which most commonly come before us, and such as claim special notice either from their character or the peculiar conditions necessary to insure their germination. Commencing with the Grasses, let us examine them before we determine on the mode of committing their seeds to the ground.

Grasses are amongst the most useful and widely distributed of all the families of plants, affording food to both man and the most valuable animals; and as they produce seeds in abundance, the multiplication of an individual species when wanted is only difficult or otherwise according to the skill used in cultivation. As treatise after treatise has been written on the culture of such cereals as we depend on for our sustenance, the conditions under which the more common Grasses are generally met with need only be glanced at, in order to see how far these conditions agree with the mode of cultivation which we adopt when we want to increase the number of any particular species. Grasses, it is well known, produce seeds in great abundance, which ripen about the time that the hay crop is cut, or rather later, for it is seldom allowed to remain uncut until the Grass seeds are ripe. The seeds remain a longer period attached to the husk or stem that supports them than those of many other plants; eventually, however, they are shed, and the chances are very remote of their falling upon such a prepared seed-bed as is often made for them when they are sown artificially. Most commonly the seeds fall by the side of the plant, and if this is growing in a pasture field the ground is dry, hard, and already occupied with Grass; or if by the side of a road, the place is often as hard as a macadamised turnpike. Neither of these conditions, however, prevents the seed vegetating when the proper time arrives, which is usually September, after the early autumn rains have soaked the seed, and given it that impulse which it follows up: hence we have the best possible time pointed out to us by Nature for making a permanent sward, and by sowing the seeds in the last week in August or first in September the best results are likely to follow. If any one be sceptical on this point, let him only notice the innumerable plants of Grass that will often make their appearance in the early autumn months in walks and other hard places not too much trodden upon. The progress of such little plants is certainly not rapid at this time, but they survive the winter, and are ready to start into growth early in spring; in fact, if the

winter is mild, they never cease growing. If, instead of sowing Grass seeds in autumn, they be sown in spring, the result will not be so satisfactory; for, though a great many will grow, the proportion will not be nearly so large as when they are sown at the time which Nature points out—viz., early in autumn.

Many seeds possess a coating of some substance designed to protect them whilst in an inert state, from the time they become detached from the plant until they commence to vegetate. Gum, oil, and resin form a covering to a large number of seeds, and these substances preserve the seed until it is required to grow; for, unlike the Grasses, many of the seeds so protected require a considerable time to undergo the changes that occur before germination fairly commences. Some remain in the ground a considerable time, while others swell and commence growing very soon after being committed to the ground. Of the latter, those cased over with an oily substance seem to germinate soonest, as in the Cabbage tribe and its allies; resinous seeds, as those of the Coniferae, require more time, contact with mother earth in their case not effecting the change so speedily as with those previously mentioned; but it is accomplished, the agencies at work in the soil being generally sufficient to free the young plant from its resinous covering. I may here remark that there is every likelihood that the soil best adapted to the growth of a plant is also that best calculated to insure the proper germination of the seed; for such soils, doubtless, offer the natural conditions most favourable to such a result being brought about in the shortest space of time. Seeds of leguminous plants present great diversity, some of them having but little external covering to hinder germination, while others—some Australian seeds, for instance—are cased in an armour of gum, which requires more than ordinary artificial help to enable the embryo plant to make its appearance. Such seeds are therefore often soaked in warm water, which removes a great part of the gum, and leaves the remainder so reduced as to allow the plant access to the outer world. The artificial means here advised ought not to be resorted to if it can be dispensed with, as it is an operation not intended by Nature, but merely one artificial process adopted to correct another, these seeds being of foreign not indigenous growth, and having been brought many thousands of miles under conditions never occurring in nature. In consequence of this the gummy substance hardens into a sort of case, impenetrable to the influences at work in the soil in an ordinary state: hence the necessity of using extraordinary means.

Besides the above there are many other ways in which seeds are preserved until the proper time for their germination. Some seeds are embedded in a pulpy substance destined to protect them until the proper period for the commencement of growth arrives, and of such Gooseberries, Currants, Strawberries, Tomatoes, &c., afford examples. Seeds of this character should always be preserved when practicable with the pulp adhering, as they are deprived of the most important part of their keeping qualities when it is removed. This section embraces many kinds of plants in general use, and which are often propagated by other

means than by seed. Some seeds remain for a long time attached to the plant that produces them, and some, though cast off, are still found in numbers enclosed in a sheath, capsule, pod, or other covering, from which they are liberated when the proper season arrives. I will not, however, follow this subject further, but will now make a few remarks on another feature peculiar to some seeds.

The modes in which the seeds of plants are disseminated are not less various and wonderful than the means for their preservation. Some seeds are armed with a thorny substance, rendering them formidable to the birds or animals that would otherwise consume them; some are also rendered capable of being transported to long distances, either by their extreme lightness or by being furnished with a sort of substitute for wings, as in the case of the common Thistle, which floats in the air to long distances; others attach themselves to animals, as the seed of the Goose Grass, and may thus be carried a long way off; while others, again, are contained in a sort of pod, out of which they are jerked at the proper time to a considerable distance, as with the Balsam, Laburnum, and Pellitory of the wall. The dispersion of seeds is likewise effected by birds and animals congregating at the place where they are produced; thus a bird carries off a Cherry to some distant tree, eats the pulp, and drops the stone. In addition to those glanced at, many other natural modes of transit are met with.

We now come to the conditions necessary to insure a long continuance of vitality in seeds. Ground has been turned up which there is every reason to believe has not been disturbed for a century, and perhaps plants spring up in it without having been sown there, leading to the inference that they had been deposited there at some time, and, being excluded from the air, could not germinate, but still were able to withstand the decaying influences of the medium surrounding them. Seeds buried by the spade or plough very often appear after a year or two, but as to whether it is true or not that certain seeds have preserved their vitality for such long periods as they are sometimes asserted to have done, I will not hazard an opinion; and there is some doubt whether those seeds yielded by the mummy caverns in Upper Egypt were really as ancient as the mummies themselves.

I now come to the important subject of how to treat seeds which we wish to turn to account, or rather in what way we are to preserve and sow them so as to insure a successful result. The latter is a question of sufficient importance to demand a separate paper, and the former has been in some degree treated on in the remarks made on the natural means by which seeds are preserved; and if we follow as far as we can the rules of Nature we cannot very well err. Some departure from them must of course be made, but let such be as little as possible, and the result will most likely be successful. These remarks, however, relate only to the preservation of seeds, which, as objects of commerce, too often are subjected to processes calculated to please the eye rather than promote germination; but the sooner that the latter become the paramount consideration the better. As the subject of sowing seeds deserves more space than can be given in a single article, it must be deferred till another time.—J. REBSON.

BLEEDING OF VINES.

If a Vine shoot bleeds from the wound made by the knife in pruning, if the cut has not been so made, let it be made so as to leave an inch or two of stem above the bud. Cut clean in a slanting direction as in ordinary pruning; then take a Potato, and, cutting off a slice, press the Potato carefully upon the shoot, so that the Potato may not split, but completely cover the wound. The Vine will not afterwards bleed for more than a few hours at the most. The sap of the Vine and juice of the Potato seem to form a sort of starchy compound effectually stopping up the pores of the shoot. The Potato must not be removed until the leaves are growing vigorously, and, therefore, elaborating the sap.

I have tried this remedy for the last two seasons, in both cases having had my Vines pruned too late, and sometimes have had the half of a Potato on every third sprig, and I have never known it fail. This year I cut down, about a fortnight ago, young canes that were just breaking to within a few eyes of the base, applied the Potato at once, and in none of the three cases has any bleeding whatever occurred.—CONSTANT READER, *Lincoln*.

P.S.—The Potato should only be cut at the part at which

the shoot is inserted. It would not do to use merely the middle part of the Potato with both ends cut; at least, I have only tried it as I describe.

MY NEW ORCHARD-HOUSE.

The winter, now happily past, has been a remarkable one, if only for its high temperature and destructive storms. The Channel Islands, situated as they are in a large bay, the form of which greatly influences the tidal wave, and lying at the extreme edge of the vast European continent, while the open Atlantic encircles their rocky shores, have experienced their full share of the dangerous winter gales.

Guernsey, as the outlying island of the group, of medium size and elevation, is peculiarly disposed to develop the pernicious influences of contending land and sea aerial currents, which, in their action on each other, tend to produce rotatory storms of a destructive character. That of the 11th of January was of this nature, and did considerable damage to the island in consequence. It will, no doubt, be of interest to the readers of this Journal if I describe some of its effects, and note chiefly the dangers which the numerous vineries in the island underwent, and especially my own houses. These dangers arose mainly from the cyclonic character of this awful storm. This consideration leads me to hope that some of the intelligent writers in this Journal will devote more of the fruits of their experience for our benefit in such very important matters as the ability of wood and glass to resist storms with a pressure of more than 28 lbs. per square foot—that is to say, when the pressure reaches 30 lbs. per square foot during frequent squalls (of tolerably long duration too), that the danger to which glass houses of the ordinary construction are exposed must be enormous. If this happen, then, during a rotatory storm, which tries all parts of the houses in succession, it is evident that we require all the appliances of science to preserve them. I doubt, therefore, if a large span-roofed house would have weathered the gale of the 11th of January during the period when the house received the fullest force of the air current on its broadside. In such houses, therefore, we must mainly rely on extra solidity of construction, joined to the advantages of a naturally well sheltered position. On this, and on other points, however, experience and mechanical skill may best decide.

Living, as I do, in an island, which my friend Professor Ansted in his "Channel Islands" describes as the battle field of all the blasts under heaven, and having had one large orchard-house completely destroyed in a gale in 1860, and the new house just added much injured on the 11th of January, these matters are of importance. Mr. Clay, of Hampton Court, writes to me that his large house was several times flooded by the Thames. This, by loosening the foundations, could it have occurred with us, might have caused the destruction of all the buildings in even an ordinary gale.

To understand, then, our risk, let me briefly describe the situation of our houses, now seven in number. By the addition of the new orchard-house, which is a lean-to like all the others, the whole now present three sides of a square, which I consider to be a form well calculated to resist ordinary gales from the usual quarters. The fourth side (of shrubbery), being on the quarter-least exposed to damage, allows the current of air to escape freely. We are thus only subject to injury from the east, which, however, would be unsafe in many other places. To the south and south-west, to the west and north-west, all points whence proceed customary gales, we present either the strong back walls of lean-to houses, or else, as in the case of the new house, a front of glass framed in rafters of extra strength, with thick stone walls for gables, and a high back wall, at least 18 inches thick, which also protects the upper side of the square. We are sheltered naturally by an adjacent hill, the elevation of which, however, at times causes a plunging current, which those who live in valleys know to be dangerous; but the square is adapted to meet this, and the open side is invaluable. The effects of this cold evaporating current on vegetation are painfully perceptible. To the north and north-east we show only solid walls, and the dwelling-house itself, continuing this side of the square, materially protects it.

The strength of glass used is generally 18 ozs., most of which comes from Belgium. The sizes vary from the largest sizes in the old houses to much smaller in the new house, which is most exposed. We experienced, however, during the

whole winter a variety of gales; one of these, with a pressure of about 24 lbs., from the south-east, broke panes of small glass in the hothouse, while those of 26 inches by 22 in close proximity were uninjured; but they were in much peril, and we were obliged to introduce soft substances, such as rags, between the edges, as the elasticity of the rafters was too great. Another violent storm, not of a rotatory character, from the south-west broke a number of the small panes of glass framed in solid rafters, and left the large panes uninjured. The squalls of this storm were frightful, and reached a pressure of 28 lbs. per square foot, damaging the roof of the dwelling-house, and levelling many fine trees. At other times, many large-sized panes in the old orchard-house were broken along the upper ridge, while none of the lower was injured. This was by the direct action of the ground current. Again: at other times, when the wind struck the back walls it leapt over them, and, penetrating under the edges of the large panes, broke them by rattling them together. Much glass is lost in this manner, and it would be well to have the glass of the upper part and of the extreme ends of greater thickness. On the whole my experience tends to this, that the largest panes are safe if the glass be of 21 ozs., and the rafters not too elastic. There can be no doubt as to the appearance and orchard-house look produced by the use of such large-sized glass. It must, however, be carefully laid on, and the edges should fit accurately.

The storm of the 11th of January was in this wise. It blew continuously, as, indeed, it does in this island generally, from the Sunday night to the Wednesday afternoon, previous to the fatal Thursday. The wind oscillated wildly during this period from south-west to north-west. It then fell calm for four hours, the aerial current backing to the south-east. At night, however, a circling storm from south-west to north-east true reached us finally from the south-east. This was an exposed quarter for me, but the pressure was only very moderate, being 12 lbs. per square foot, or a velocity of forty-nine miles an hour. Then, about midnight, a sudden lull fell on the island for two hours. During this period the vortex of the cyclone passed over us. The clouds at this time presented a menacing appearance—heavy and black cumuli, hard-edged and rolled up in unshapely masses of dense and confused vapour, while from their bases a drenching torrent of cold rain fell. In one hour a rainfall of 1 inch was registered. The effects of this were disastrous; the ground became soddened, banks were undermined, and trees lost their hold on the subsoil. The barometer fell to 28.41 inches, an almost unprecedented reading; at any rate here we only know of one resembling it, on December 25th, 1821.

About 9 A.M. on the 11th the wind veered from the east to the north-east with startling suddenness, and the inner whirl of the cyclone passed over the island, somewhat partially. In a few minutes the velocity rose to forty-three miles an hour; by noon it was sixty-five miles, equal to a pressure of 21 lbs. per square foot, according to Ostler's self-registering anemometer; and, during the numerous squalls, it reached seventy-two miles, or 26 lbs. of pressure. From 1 P.M. to 2 P.M. the storm was fearful, and the pressure per square foot increased steadily to 28 lbs., with more violence in squalls.

The damage done to trees was universal. Many buildings suffered, and, but for the fact that the storm reached us when at its worst from the north-east, a point on which all the vineries in Guernsey, being lean-to's, were best defended by their back walls, the damage must have been great. As it was, one large vinery was blown bodily away from its wall. The shifting nature of the storm added materially to its dangerous character, as most of the houses had one or more weak sides. They are, however, generally very strongly built, and placed in sheltered localities whenever possible, and there are no span-roofed houses except of small size.

We were fully employed all day in securing the houses, much glass having cracked by the vibration of the structures, and slipped down. Thin planks are always in readiness to nail under any broken pane, which, with hay stuffed between, effectually secure the houses. Warned, however, by these experiences, I am dividing the houses by glass partitions, so that if any were damaged during a gale at night the other divisions might not suffer. Large branches of trees were blown across the houses into the open square, and a huge tree narrowly missed falling on the houses, being caught in the fork of another tree. A row of trees which somewhat shaded the new house had been topped, which saved them and it. The high bank, however, on which the new portion stands gave way, together with palings

and trees, and slipped down bodily about 20 feet. With the assistance of numerous workmen, obtained fortunately, the house was shored up and secured with large beams. Cracks in the green mortar threatened instant destruction, and the work, during the rear of the storm, was not done without some risk, and had to be speedily executed. The expenses incurred in under-pinning this house have since been great.

In the grounds many fine old trees were levelled, especially some *Quercus ilex* about seventy years old. These trees flourish well in the island, where the sea-blast dwarfs most of our timber. Had my state of mind been capable of relishing a joke at that period, it might have been found in the country people returning home, sitting obstinately in their carts until the public way was cleared, and steadily refusing to take any other road, vowing all manner of legal penalties. To see them thus, the women especially, wearing the ill-chosen national dress of dingy crape, and clearly demonstrating to us how wrongly we were acting in thus blocking up the highway with fallen timber "twixt the wind and their nobility," was indeed a curious sight. On a subsequent occasion a litigious farmer actually unloaded a large cart of hay which could not pass freely under the beams placed to shore up the orchard-house, sooner than take another path close by. Failing in persuading us to remove the obstacles (there being some risk, of course), he deliberately unloaded his cart and then he actually lodged an information against me. Numerous grave authorities were invited to inquire into this matter. They did so, but the obstacle was already gone! A Fir tree which we tried to preserve contributed also some mistimed hilarity; for about twenty of the good neighbours having "tailed on" to a ponderous tackle, under the guidance of a much-flogged old man-of-war's man, the rope of course yielded, and I cannot say how many gallant officers, clergymen, and medical men were prostrated amidst the applause of numerous juvenils. The tree, however, was saved, but we can always observe that "carriages quicken their pace when they pass under it."

This was our experience of what a rotatory storm can do. The pressure, at times, was greater than that of 28 lbs., nearer 30 lbs. in fact. The mean temperature was 41°, never lower than 40° and never higher than 42°. This was a remarkably high temperature even during an exceptionally mild winter. Geraniums and other plants have not suffered at all. We had frost only during a few nights, and the thermometer in the new orchard-house has never registered lower at night than 40°. It was also from 6° to 8° above the outward air. What an advantage if others would also record the lowest night temperature during the winter. I must, however, defer this portion of the matter, and other changes introduced in training in the new house, for a future paper.

On the more immediate part of the subject—the right situation with respect to natural shelter for orchard-houses, their disposition with respect to protecting each other, their size and form, the dimensions of the glass and its arrangement, the strength and proper elasticity of the rafters—all these and many kindred questions seem to me to be of the utmost importance in orchard-house matters.

We have made a very fair start, and I am, for one, surprised that panes of glass 26 inches by 22 should resist gales of 28 lbs. of pressure per square foot as well as panes of the ordinary greenhouse size. They should, however, be of 21-oz. glass, and overlap with the greatest accuracy.—T. C. BRÉHAUT, *Richmond House, Guernsey.*

WARNING TO TOBACCO-GROWERS.

I HAVE had the supervisor of excise to take account of my tobacco. The Revenue authorities seem alarmed at my growing so much, and thought I must be manufacturing it for sale. I told the supervisor that I had none on hand at present. He wanted to know how much seed I had left. I told him I had 1 cwt. including stems and all. I suppose we shall have a duty on home-grown tobacco next. I, for one, shall decline growing it then. I grow it as much for ornamentation as anything, admiring, as I do, its *Begonia*-like flower.—LACHENALIA.

CRYSTAL PALACE.—The thirteenth season, commencing on May-day, opens with great promise. Among other attractions the great Flower Show of the season will be held under the most favourable auspices on Saturday, the 12th of May. As a feature of additional interest, and to afford additional accommodation,

the beautiful gardens of Rockhills, adjoining the Palace, and the residence of the late Sir Joseph Paxton, will be thrown open to visitors. As in front of the surrounding verandah there is growing one of the largest trees of *Wistaria sinensis* in the country, and as at the time of this great Show it will be in full beauty, such an opportunity affords additional interest to the great Show of the coming season. These gardens will be again thrown open on the day of the great Rose Show, Saturday, June 23rd.

THE MANETTI STOCK FOR ROSES.

THE constant accession of new readers to THE JOURNAL OF HORTICULTURE renders it necessary to revert occasionally to subjects that have been already discussed in its pages, in order to satisfy inquiries that arise from time to time. It may happen, too, that additional facts may be elicited by the renewal of a discussion upon any subject. I am inclined, therefore, to agree with "COUNTRY CURATE" that it may not be without advantage to return to the question of Manetti stocks.

The soil in which Roses on the Manetti are grown must, of course, be the chief means of determining the adaptability of the stock to the end in view, which I assume to be this—to produce better flowers, and a greater number of them, than can be obtained by any other means in the same situation. A secondary consideration will also be—that the plants, resembling in appearance those on their own roots, which in soils that are light and not naturally strong they soon become, are therefore more manageable and less unsightly when out of bloom than standards or half standards on the briar; for there is scarcely a shrub less attractive to the eye than a flowerless, leafless Rose bush, and the ugly appearance of pruned and unpruned standards in the same naked state is noticeable to every one, but we readily pass this out of mind when we look on the lovely forms produced by them.

The soil in this part of Surrey is very different from the description "COUNTRY CURATE" gives of that of his garden in Shropshire, and both again differ from the soil of Mr. Radclyffe's late garden at Rushton. The superiority of the Manetti stock having been fully established both here and at Rushton, "COUNTRY CURATE" is quite justified in asserting that it should be tried in other places, and, I wish to add, the result of the trial should be made known.

We have read frequently in these pages and elsewhere that the Manetti stock is not advocated by rosarians who have heavy soils, and not without reason, because generally the briar does well on those soils, and the propagation of Roses on it is so simple and easy that satisfactory results are obtained without having recourse to any other means. It is also affirmed that the Manetti stock proves too strong for the Rose budded or otherwise worked upon it. Roses on their own roots also do well in heavy soils. Instances of both have come under my notice, and in submitting these notes in reply to "COUNTRY CURATE'S" favourable mention of my former article on this subject, cognizance is taken of these circumstances.

As regards the influence of climate, it is sufficiently established that the Manetti is hardy enough to withstand the generality of English winters, as well as the varying character of our springs and summers. I have heard of its succeeding well in Durham and Yorkshire, and hence there is no reason to doubt equal success in Shropshire and other north-western and midland counties. It may be assumed, also, that since the Manetti stock is found to maintain the Rose grafted or budded upon it in better condition in the earlier stages of growth in light soils, which retain a higher temperature than heavy ones, the south of England may be slightly more suitable for it than the north; and, further, that in rich soils in a favourable situation the exuberance of vigour in the stock may sometimes prove too strong for the Rose worked upon it, and hence the reasonable objection of those who have tried it under these conditions.

The inquiry of "COUNTRY CURATE" embraces two principal but connected subjects—namely, the propagation of Roses on the Manetti stock, and the propagation of the stock itself. All the other points of information sought for in his recent article may be included in these.

1st, *Propagation of Roses on the Manetti.*—The stocks should be obtained in the autumn that they may be well established for operating upon in the following summer. They should be planted in rows not less than 6 inches apart; 9 inches or even a foot would be preferable if space permit. If

several rows are planted, and it is intended to remove them when the plants are sufficiently advanced to allow of removal, space may be economised by planting the rows at alternate longer and shorter intervals—that is to say, if the first and second rows are about 18 or 20 inches apart, the second and third should be 2 or 2½ feet, the third and fourth the same as the first and second, and so on. This will allow room for working the stocks with less inconvenience and risk than if the rows were at uniformly short intervals apart. The stocks should not be planted deeper than is necessary to secure the roots firmly in the soil. Before planting it will be well to notice if any buds have appeared within a few inches of the roots, and if so, they should be removed. The same precaution is even more requisite when removing established plants, as these buds in time become developed into shoots, or suckers as they are frequently but improperly called, and which prove a fruitful source of annoyance afterwards. The neglect of this precaution has added to the complaints that have, unjustly, been brought forward in argument against the Manetti.

For propagation in the open ground budding is more certain, easier, and in every respect preferable to grafting. As I stated in a former article, a carefully inserted bud in good condition will in nearly every case produce a good plant.

As soon as spring indicates signs of genial weather, towards the end of March or early in April the stocks may be earthed up 3 or 4 inches. The object of earthing up is to keep the bark moist, and this is indispensable when the stocks are to be budded, for the bud should be inserted in that part of the stock that has been covered with soil; and it should be remembered that it is not necessary to have wood of the current year's growth, but the bud should at all times when practicable be inserted in the main stem of the stock, which would, therefore, be of the previous year's growth or even older. Stocks of the previous year's growth should be preferred, as they can be operated upon nearly as easily as the current year's shoots of the Dog Rose. If the stocks are more than two years old there will be more difficulty in performing the operation, and some doubt about the success of it; also, if the earthing up is done in the autumn when the stocks are first planted, they will sometimes throw out rootlets where these are not wanted—that is, where the stock is to be budded, rendering the bark too hard for successful operation.

By the end of May the stocks will be ready for budding, particularly if the spring has been favourable. A day or two before it is intended to bud, so much earth should be removed from the stocks as had been drawn around them by earthing up. It is advisable to make the surface level or nearly so; the stocks should not be left in a kind of irregular trench, otherwise, if continuous rains follow, the water will settle around the stocks in puddles, thereby acting injuriously upon the inserted buds, which should be as low down as possible. When the ligature of the bud is flaccid, a soft and at the same time pliable and strong material, which I have always found preferable to any other, if the lower end of the ligature is in contact with water that settles around the stock, the bud will be kept wet too long by the capillary attraction of the worsted, and soon rot. In heavy soils these points cannot be too strongly insisted upon, and even in light porous soils like mine inattention has been followed by casualties. Before budding all lateral and superfluous shoots from the stock may be cut off, and, if the budding is performed early in the season, the stem in which the bud is inserted should be slightly shortened.

By early budding I mean as early in the season as buds can be obtained in a condition fit for propagation, or, as we ordinarily call them, "ripe," and the weather sufficiently warm to insure success, it being always inadvisable to bud when the temperature is low and likely to continue so for a time. Now the sap of the Manetti is so active that as soon as the genial warmth of spring puts it in motion the stock soon becomes fit for the operation, so that it is by no means imprudent to bud in May from Roses that have been forced and have sufficiently ripened their wood. It is thus useful for procuring plants of new or desirable kinds earlier than by late budding. We may, perhaps, consider last season an exceptional one, for I do not recollect cutting buds from out-of-door plants so early as the end of May, which I was enabled to do last year. The first week or ten days in June were also very propitious.

When advantage is taken of an opportunity to bud early, the bud will soon "take;" in a fortnight or three weeks the ligature should be removed, and the stock further shortened to encourage the growth of the young shoot from the inserted bud.

As soon as this has attained some length, it is advisable to tie it gently to a stick, or some other support, to prevent accident by wind, and when the wood of the new shoot becomes firm the stock may be cut down to within a couple of inches of the point of union; and, if it is not intended to remove the plant for some time, it should be earthed up, covering the union with at least 2 inches of soil. I have heard it affirmed that it takes a longer time to form as strong a union of the bud with the Manetti than it does with the briar. I am inclined to believe this to be correct, and the *rationale* of it appears to be the greater activity of the sap of the Manetti, and the longer duration of its action. The tying and earthing up, therefore, may materially assist in preventing fracture.

The months of July and August are recommended as being the best time for budding; it may be done in September, but it is not advisable to defer it too long. All buds inserted in August and September should, if possible, be kept dormant all the winter. This may be effected by not shortening the stock. The ligature should be removed when the bud has taken, and it may then be left till the following spring. When it is found that the bud is about to start, the stock should be shortened as above stated. It is advised by some to cover the budded stocks with straw or other light material during the winter, but if the weather prove wet after their being so covered more injury than good results, and I think it best, on the whole, to leave them unprotected. I confess, however, that this is only a matter of opinion, and not of actual experience. Dormant buds should certainly not be buried in soil during the winter; exposure to the weather is safer.

2nd, *Propagation of the Manetti*.—The preceding notes were penned before I saw the excellent article by Mr. Cleaver in the Journal of April 17. As I fully concur in the statements there made, and believe them to be founded upon a careful observation of facts, it would be superfluous to repeat now what is there given in reference to the propagation of the Manetti by cuttings. Another mode of propagation, equally simple, is by layers. If a few old plants are reserved for this purpose, all the shoots of sufficient length sent out from the collar or bottom of the stock may be pegged down according to the usual practice of layering, as soon as the wood is ripe. If the shoots are long, more than one new plant can be obtained by slightly incurving the shoot between the pegs.

The complaint of a deficient supply of stocks has been frequently expressed of late. The reason is undoubtedly the greater demand for them arising from the increasing appreciation of the Manetti, and the growing conviction that its merits have been faithfully recorded by those who have advocated and advised its use. The adoption of it is yearly becoming more general, and the careful rosarian will value it as one of the chief means at present within reach for enabling him to obtain a permanency for his plants, and a succession of good bloom year after year which the Dog Rose very rarely affords.

Another point of inquiry in connection with the Manetti stock ought not to be passed over without notice. I allude to the selection of kinds suitable to the stock. A list of such would indeed be a long one, and among them would be several desirable varieties which are not naturally strong, but which receive from the stock more vigour than can be imparted to them by any other means. I have noticed, however, anomalies which as yet have not been satisfactorily accounted for. I have, then, to ask for the experience and testimony of other contributors. Another season may do much towards clearing up some of these discrepancies, and having extended this article beyond the limits at first intended, with the permission of the Editors, I think it will be better to postpone for a few months the consideration of those points of inquiry.—ADOLPHUS II. KENT.

PURE BROCCOLI SEED.

I was surprised by a friend venturing to remark that I should not succeed in raising Broccoli seed true, unless I covered the flowers with muslin. I had raised fair seed from Osborn's Winter White, and then, as in the present instance, having no other species of Brassica in the garden, I felt the result sound; but my friend says bees and flies will impregnate with pollen foreign to the Broccoli. What such a hybrid would be I cannot say. Give me your ideas.—GEORGEHAM.

[To preserve any of the varieties of Brassica, or the Cabbage-worts, is very difficult. Broccolia, Canliflowers, Cabbages, Charlock, and Rape, are all capable of impregnating each other. Bees will carry the pollen from the various species and va-

rieties to the others. Your friend was wrong, if by "foreign" pollen he meant any but that derived from plants belonging to the same tribe.]

BOILERS.

Mr. COOPER (page 106) treats of tubular boilers as if they were of recent introduction, and not fully tested—as if, indeed, sufficient experience of them had not been gained to warrant their being recommended. This is in the main correct, as regards the majority of that description of boiler; but there are some that have been at work for more than ten years, and of which the qualities and defects would, one may reasonably expect, have been found out in that time. The question of experience with tubular boilers falls to the ground, from the simple fact that Mr. Cooper is able to give an account of their defects.

Your correspondent draws a very unfavourable picture of the power, economy, and endurance of tubular boilers, and though he offers no data, pronounces in favour of the saddle form of boiler, and puts certain questions at the end of his communication, which I presume he anticipated would be answered in accordance with his own views.

Mr. Cooper recognises three points as essential to a good boiler—viz., power, economy, and endurance, and upon these points I beg to say a few words, both in respect to tubular, saddle, and other boilers.

1st, *Power*.—A boiler derives its power from the extent of its surface exposed to the action of the fire, the proximity to the fire of the parts exposed, and the resistance which they offer to the passage of the heat to the flue. Now, a tubular boiler is so constructed that some parts are immediately in contact with the fire, others immediately over it, all so arranged that the fire must come in contact with more than one part, if not all, before its heat passes into the flue. A saddle boiler does not expose one-half its surface to the direct and indirect action of the fire, the parts in contact with and directly exposed to it being those from which the water within derives its heat, for the parts indirectly exposed are so coated with "soot and other products of combustion," as to be next to valueless as regards heating power. These principles applied to a tubular boiler mean that one of £20 value exposes to the direct and indirect action of the fire 150 feet of surface, and is calculated to heat 1500 feet of four-inch piping, or 800 gallons of water. A saddle boiler of the value of £20 does not expose more than one-half, or 75 feet of surface to the direct and indirect action of the fire, and cannot be made to heat more than 700 feet of four-inch pipe, or about 373 gallons of water.

Take one hundredweight of coke for the tubular boiler, and a like weight of slack or small coal for the saddle boiler, with 14 lbs. of wood to each; let fires be kindled under them simultaneously, and allow in each case ten minutes grace to get under weigh or obtain a fire, and then let us see how they act. The tubular boiler will now take the whole of the hundredweight of coke, and the saddle its remaining quota of slack. It is well with the stoker minding the tubular boiler, for he may open wide the ash-pit door, and ere long he will hear the sound of the water being rapidly heated in the boiler, and in a few minutes more the noise increases. It is now high time to close the ash-pit door to such an extent as to check the draught, and thus prevent the water being heated so quickly as to rush through the flow-pipes faster than the return-pipes can bring it in to be heated. The saddle boiler, on the contrary, will give the stoker a large amount of care and labour for the whole of the time requisite to heat the water. The time required in each case will be as follows:—Fires lighted at 9 a.m., both boilers having good fires under them at 9.10, when the tubular is charged with the remainder of the hundredweight of coke, the saddle being still worked on. At 9.55 the water rises through the flow-pipe of the tubular boiler at a temperature of 180°, which is sufficiently hot for all horticultural purposes. The tubular boiler fire may now be slackened, and at the end of three hours the water still leaves the boiler at a temperature of 180°. The saddle at 9.55 does not circulate through the flow water of a higher temperature than 90°, and it is 11.40 a.m. before the water comes through the flow-pipe at a temperature of 180°, the quota of fuel being all on the fire, and more required to maintain the temperature attained by the water. The tubular will also require at the same time another 1 cwt. of coke, which will serve to maintain the water at a temperature of 180° from six to eight hours. A tubular boiler, therefore, heats double the amount of water in one-third of the time with the

same consumption of fuel as a saddle boiler of the same value. So much, then, for the power of a tubular, as compared with a saddle boiler.

2nd. *Economy*.—I find that a tubular boiler of the value of £20, and a saddle one of like cost, differ but little as to the quantity of fuel consumed. A tubular boiler consumes 1 ton of coke per week for the twenty-six weeks of winter, and 1 ton in ten days during the other twenty-six weeks of the year, or 44 tons per annum, which at 7s. per ton amounts to £15 8s. A saddle boiler consumes 1 ton per week for twenty-six weeks, and 1 ton in twelve days for the other twenty-six weeks, which for 41 tons of slack coal at 6s. 9d. per ton amounts to about £13 16s. 9d. Now, this is when the whole of the piping is required to maintain suitable temperatures in stoves, forcing-houses, and pineries, and this tests the power and economy of boilers more than where the boiler is employed to heat a miscellaneous range of houses, some being stoves requiring artificial heat at all times, others viceries that need artificial heat for six or eight months, or it may be only as many weeks, the same remark applying to greenhouses and cool houses generally. For each I find a tubular boiler consumes 1 ton in ten days for twenty-six weeks, and 1 ton in twenty-one days during the other twenty-six weeks, or 27 tons of coke per annum, value £9 9s. A saddle costing £20 employed for a like purpose consumes 1 ton of slack coal in eight days for the twenty-six weeks of winter, and 1 ton in eighteen days for the other twenty-six weeks, or 32 tons per annum, and this at 6s. 9d. per ton amounts to £10 13s. 11d.

A tubular boiler heating 1500 feet of four-inch piping costs, when employed for heating houses requiring high temperatures, £15 8s. per annum; a saddle boiler heating between 600 and 700 feet of four-inch piping, £13 16s. 9d.; but when the houses to be heated are such as require in part high, and in part low, or occasionally high temperatures, the yearly expenses of fuel for the tubular boiler are £9 9s.; and for the saddle, £10 13s. 11d. It is not on the score of consuming less fuel that we must look for the economy of saddle boilers, nor in the item of labour, for a saddle boiler takes double the amount of labour and attention that a tubular one requires. Saddle boilers increase the hours of labour, cause much night work, make late goers-to-bed of those who are often required to be early risers, especially if the means are limited to one boiler, and they are besides clumsy, idle, and not economical in working. Any merit they may have would seem to be confined to their endurance.

3rd. *Endurance*.—From experience of the practical working of tubular and saddle boilers, I can say this much for tubular boilers—1st, I have not known any removed as inefficient, and replaced by saddle or other descriptions of boilers; 2nd, They do not fail through the cracking of the "lower rim to which the upright tubes are joined;" 3rd, Those which have been fixed are still doing that which they were at first calculated to do, and did perform. What I have to say practically of saddle boilers is—1st, That they are slow in heating; 2nd, That they require great labour and attention; and 3rd, That they waste half the heat of the fuel consumed. Again: I have known saddle boilers removed as inefficient, six of them in one instance, and replaced by one tubular boiler, which last consumed no more fuel than two of the saddle-boiler furnaces.

I really have no further experience of tubular boilers in point of endurance than that I know them to have stood the wear and tear of fire and water for ten years, and in one instance for twelve years, many from six to ten years, and very many from three to six years. In no one instance have I heard any complaints of the non-heating of tubular boilers from the deposit of soot and other products of combustion, and I do not think that they are liable to this drawback to anything like the same extent as a boiler heated by coal. It is only reasonable, if a boiler does not heat so quickly after some years as it did when first erected, to attribute the cause to the coating of the parts exposed to the action of the fire with soot and other products of combustion resembling coal tar. From experience I am happy to say that there is no deposit of soot, and that no products of combustion resembling coal tar are deposited on any part of a tubular boiler; for as these boilers consume coke smoke is wanting, and therefore there cannot be sooty deposits, nor gas tar, as that is extracted. There is, however, a deposit, and that is of dust, which lodges on the lower rims to which the upright tubes are joined; and the parts immediately over the fire have a certain deposit of some kind consequent on the action of the fire, but it is one vanishing under a strong fire, or it scales off without its being necessary to clean

it off, as some do. A saddle boiler, and it of course burns coal, soon becomes coated with soot and a substance much resembling coal tar. This and all other deposits vastly impair the heating powers of a boiler, and, unless cleaned off, the boiler can only be heated by an extravagant consumption of fuel.

I entirely concur in the views expressed by Mr. Cooper, that tubular boilers are difficult to clear of any dust that may be deposited on the parts farthest from the fire (I cannot entertain the deposit of soot and other substances consequent on combustion applying to boilers consuming coke), but on these dust cannot well rest, as the tubes are vertical, and whatever there may be is easily removed by employing a brush similar to a bottle-cleaner, with a long twisted wire handle; but how are we to clean the side flues of a saddle boiler, and free those parts of soot, &c.? The difficulty of doing this renders all such boilers less powerful every day; no matter how much the boiler is scraped and cleaned, something fastens itself on the surface exposed to the action of the fire which no amount of cleaning effectually removes. This not only affects their efficiency, but their endurance as well, and the decay of the iron is to be measured by the deposit of soot and other products of combustion on the iron. A saddle boiler is more liable to this than a tubular one, and how the saddle is to be more durable I am at a loss to know.

I am certain that it is not outside a tubular boiler that we must look for that which impairs its efficiency and endurance, but inside for the corrosion of the iron and the lodgement of sediment within the pipes. This I find is dependant on the water employed, and on the quantity of water passing through the boiler. In a tubular boiler the circulation of the water is much more rapid than in one of the saddle form, and double the quantity passes through it; I therefore think that a tubular boiler will be sooner choked, owing to the corrosion of the iron, than a saddle one. In that case the former will be less durable than the latter, for its parts being narrower they must necessarily be sooner closed. In what other way tubular boilers are likely to be less durable than those of the saddle form I must leave it for others to determine; but tubular boilers are the most powerful and economical of those of which I have had experience. It is to me a matter of perfect indifference what form is preferred, for boilers scarcely differ in principle, and all have their defects. I look upon perfection in boilers as not yet attained, nor likely to be for a long time, if ever.

The principle of tubular boilers seems to be the exposing as much surface as possible to the direct action of the fire, and placing as much of it as can well be done in contact with the fire in order to heat the water quickly; but it is questionable whether employing horizontal tubes is the safest mode of doing so. Horizontal firebars and circular rims are calculated to expose a greater surface to the fire than vertical tubes; but the very thing that facilitates the heating of water hinders its circulation; for the circulation of hot water in a vertical tube is more rapid than in one that is horizontal. The object should be to heat the greatest quantity of water by placing the parts in contact with and directly exposed to the fire in such a manner that the best effect will be produced, and then to get it out of the boiler as quickly as possible: hence the upright tubes for the upper part of the boiler, they receiving what may not inaptly be termed indirect heat, or that passing up towards the flue after it has been acting on the lower parts of the boiler.

Of two conclusions, I am certain, 1st, that if boilers are to be made more powerful, it must be by exposing a greater amount of surface, or bringing into contact with the fire more of the surface of the boiler, as is the case with the water-jacket in Clarke's upright tubular boiler. 2nd, That if boilers are to be made more economical of fuel, that economy must be effected by having them so constructed that the greatest resistance is offered to the escape of the heat towards the flue, so as to employ it in raising the temperature of the water within the boiler, instead of allowing it a free passage to the chimney to expend itself in space. This obstruction to the escape of heat seems to be happily provided for in the terminal saddle boiler, which is, in my opinion, the greatest stride made for a long time in heating by hot water with the saddle boiler, though even that is by adopting a principle previously applied to tubular boilers. I think that the saddle boiler will, notwithstanding that improvement, lack much of the power of a tubular one, and I believe that it will not heat so much piping by one-third as a tubular boiler of the same first cost, and with an equal expenditure of fuel. The only advantage I ever saw, or I believe

ever shall see in a saddle boiler, no matter how improved, is that it will burn anything and everything combustible. Tubular boilers will not, or rather ought not to do so, or their parts become so clogged with soot and other products of combustion, as to be practically the reverse of powerful or economical.

Mr. Cooper concludes by asking, "Shall we, then, continue to erect upright tubular boilers?" I am glad that he has made the distinction, "upright tubular," for horizontal tubular are those requiring the chimneysweep every morning to clear away the soot and dust. They will never do unless heated by something not emitting smoke. My answer to Mr. Cooper's question is in the affirmative, or "Yes, until a boiler of greater power be invented," and that is not yet done.

"Shall we return to the good, old, and long-tried saddle?" Well, no. For detached houses it may do; for long ranges of houses it is not economical nor efficient.

Mr. Cooper's last query I will not presume to answer, but I have no doubt the best boiler that will burn any kind of fuel, is the terminal saddle boiler.

In conclusion, I would point to the old and long-tried flue for economy in heating small detached houses, or where much capital would have to be invested, if heating had to be effected by hot water; to a boiler of the saddle pattern for large detached houses; and to the tubular form where coke can be had, and there is much glass.—G. ABBEY.

A LITTLE MORE ABOUT TOBACCO.

Your correspondent, "X." (page 287) seems to infer that when I wrote the article on "The Growth and Manufacture of Tobacco," I ought to have stated how much might be legally grown on English soil without infringing the law. I must confess that when I penned the above paper I was in ignorance as to the quantity allowed by law to be grown, but fancied it was about a pole.

I may also state here what I omitted in my last, that I sow my seed about this time (April 23rd), because by the time the seedlings are ready to prick out, the first bedding plants will be put out in the flower garden, so disengaging plenty of small pots. As many tobacco plants as will be required are then potted singly, they are started in any warm house where there is room, and hardened off in the cold frames which have been used for bedding plants. Were it not for the want of space, a want felt in most gardening establishments in the months of April and May, I would sow and put out my plants earlier. I do not think that the system adopted by your correspondent, "Rrue" (page 270), of allowing his plants to remain entire until the approach of frost, is preferable to gathering the lower leaves as they become ripe. When the plants are luxuriant, the lower leaves are liable to decay before the plant is fully developed, they then become useless, and the best and largest leaves are lost. I prefer securing the lower leaves, and drying them as they attain maturity, which will be about the middle of September. I have gathered the plants entire, but found it attended with waste.

I am glad that the subject of growing Tobacco for fumigating-purposes seems to be gaining in interest. I was in conversation the other day with a gardener who is at the head of one of the first establishments in the kingdom, and he told me that the expense of fumigating for the year was becoming a very serious item, and one which it would be very desirable to obviate. There are very few gardens in which there is not as much space at command as will afford room for a sufficient number of Tobacco plants to serve for the year. I may also add that a sixpenny packet of seed from any respectable seedsman would plant a quarter of an acre of land.

Since I wrote the communication at page 137, I have changed my position, and having to supply the wants of a large establishment from only a limited area of kitchen garden ground, of which every inch has to be cropped with vegetables in order to meet the incessant demand, I purpose growing my Tobacco plants this season between the Asparagus-beds, and as I find the ground is very rich, I expect an abundant harvest from them.

Allow me to state in conclusion, that those who intend to grow Tobacco must be careful in the drying and storing it away. If it is too dry it will not sweat, and then its essential oil, in which its value consists, is lost; or, if the leaves are too full of moisture they are liable to decay.

As the pages of "our Journal" are always open for amateurs as well as the professional gardener to relate their practice on all subjects of interest, I trust some of its numerous readers,

who may be induced to try the experiment of growing their own Tobacco, will in the autumn, when their plants are gathered and stored away, give us the result of their experience.—QUINTIN READ, *Port Hill Gardens, near Burslem.*

MILDEW ON ROSES.

MILDEW, or white fungus, is a sad malady when it attacks Roses early in the year, before the new wood is confirmed. If it appears late, it does not so much signify. Anything that obstructs the lungs must affect the plant. Flowers of sulphur may be beneficial under glass, but out of doors I never saw any good result from its use.

Mildew is called "the daughter of drought," because long-continued drought thickens the juices of the plant, and makes the young folioles sticky; fungus then adheres, and in favourable weather it is developed. Abundant watering at the root and over the leaves in hot weather, would probably prevent it; but when it has once obtained a hold of the plant, an abstergent lotion is the best remedy. Put 2 ozs. of blue vitriol into sufficient hot water to dissolve it, and then put the solution into a stable-bucket of cold water, and pour it with a fine-rosed watering-pot over the leaves. I have known it cure thoroughly a line of *Géant des Batailles* (much given to mildew, discarded by me now), when the mildew has been rooted deeply into the texture of the leaves. If "HELEN" (your inquiring correspondent) has only a few Roses, she may sponge it off or rub it off with the finger and thumb on its first appearance. *Baronne Hallez* is another Rose which is never free from mildew.

In hot, showery seasons mildew seldom appears on the Rose, nor does it then do any amount of harm.—W. F. RADCLIFFE.

[Mr. Radcliffe now resides at Okeford Fitzpaine, near Shillingstone, Dorset. He has left Tarrant Rushton.]

ROYAL HORTICULTURAL SOCIETY.

WEEKLY SNOW, *April 28th*.—For the best collection of twelve miscellaneous plants the first prize was awarded to Messrs. Cutbush and Son, of Highgate; and also for the best collection of eighteen Hyacinths and eighteen bulbs in flower. Mr. Morgan, gardener to the Marquis of Townshend, Hertford, received a prize for a very fine punnet of Keens' Seedling Strawberries, which were large and handsome. Rev. Geo. Cheere, of Papworth Hall, received a first-class certificate for a tray of Anna Boleyn Pinks, and one for handsomely grown plants of the large-flowered or Giant Mignonette, beautifully done. Mr. Bartlett received a first-class certificate for a collection of bulbs, and a prize for a fine specimen of *Adiantum cuneatum*. Mrs. Hooke, Fulham, received a first-class certificate for a collection of Cinerarias; and Messrs. Lueking, Brothers, for a collection of *Calceolarias* and *Pelargoniums*. Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, obtained a prize for a collection of miscellaneous plants; and Mr. Young, gardener to R. Barclay Esq., of Highgate, received a first prize for a very meritorious collection of vegetables.

HORTICULTURAL DINNER.—We understand that Lord H. Gordon Lennox, M.P., has kindly consented to take the chair at the dinner to be held at St. Martin's Hall (May 24th), during the week of the International Horticultural Exhibition.

THE MANGO AND MANGOSTEEN.

I, in common with many of your readers, have been much interested in the papers by "J. H." on the cultivation of tropical fruits that have from time to time appeared in *THE JOURNAL OF HORTICULTURE*. Several of my friends who take a great interest in these matters have gone to considerable expense in the endeavour to rival the doings of "J. H.," and to secure, as he would lead us to expect, such a supply of the fruit of the Mangosteen as would not only furnish their own tables but those of their friends.

I have lately heard in more than one quarter considerable doubts expressed as to whether "J. H." has really done what he professes. On the one hand, highly skilled cultivators assert that the instructions given by "J. H." cannot possibly succeed, as they are contrary to the conditions under which the tree naturally grows; others say, Could such a feat in horticulture be performed in England without some person having seen it? Now, I should be glad if "J. H." will, for the satisfaction of your readers, state where he "obtained fruit for three successive years (1859-60-61), from one small tree." It seems strange that such a circumstance should have occurred

and created no excitement in the horticultural world, when the production of a solitary fruit at long intervals in some of our most extensive establishments throws the whole community into ecstasies.—B. H.

FRUITS IN THE ORCHARD-HOUSE AND GARDEN.

I HAVE heard and read of orchard-houses in various parts of the country, but I am not aware that they exist to any extent in this county, Shropshire. My first experience in this matter dates from last autumn twelvemonth, when I had a lean-to, 20 feet by 12, erected. The Peach and Nectarine trees, owing to the pots not being ready when they arrived, remained in an outhouse in the baskets, only partially unpacked, for nine or ten days, being kept too dry; and when afterwards potted, being over-dosed with water, they cast their buds, and so far for the first season were a failure. Perceiving, however, from the character of growth last summer, and a nice sprinkling of Plums and Cherries, that orchard-house cultivation was likely to be a success, I, last autumn, built another house the same size as the preceding, and matters at present are very promising.

Having understood that Apricots were not easily fruited in pots, I am pleased to find that the two I have, a Kaisha and Moorpark, have their fruit set very thickly, so that the scissors will have to be used pretty freely in the thinning process. Here let me say how well orchard-houses are adapted for retarding as well as protecting the blossom. This matter was strongly recommended by the late Mr. Errington, and is, I conceive, extremely important. Having had occasion to go some distance from home on the 23rd of February, I was surprised to see the walls covered with Apricot bloom at that early date, while my trees were scarcely showing white at all. I had had the ventilators of the house for the most part open night and day throughout the whole of that unusually mild January, and hence the buds were still in embryo when others were hurrying into bloom. We may easily suppose where protection has been withheld what has been the result of an inclement March. A friend in the neighbourhood, who had a fine bloom of this fruit on his wall, told me a few days ago that half a dozen would be the outside of the produce. Mr. Rivers, in his book, recommends the ventilators to be shut night and day during January. The advice is, no doubt, sound in the main, but the best rules must occasionally be departed from.

Though the Peaches and Nectarines are at present pictures of beauty in their full bloom, it is yet too soon to speak about results; but I hope in the autumn to report good progress in that direction. The Plums seem especially promising, and I can see already that a Reine Claude is setting its fruit so thickly that some hundreds will have to be taken off.

With regard to fruit generally, it is remarkable how little the theory of thinning in productive seasons is understood and practised, the results of its neglect being deteriorated produce in the current year, and a total failure in the next. I cut off last year three thousand from one Orleans Plum tree, and it would have been all the better if I had taken off a thousand more. A crop of two bushels still remained.

The soil of my garden, a tenacious loam on a clay, or, otherwise, rocky subsoil, seems to be very suitable for the generality of fruit trees. The Ribston and Hawthornden Apples do not canker in the least; and from that decaying of the ends of young branches so often seen, my trees never suffer. Strawberries never fail with me. The British Queen, of which complaints are so frequent, always fruits abundantly. The last two dry summers have been no exception. I make fresh plantations every other year.

Like other people, I have been plagued from time to time by the birds taking the buds. Let not person, however, rashly charge sparrows with the offence. They are bad enough in their way, and those who have Peas coming up where sparrows abound must be on the look-out, or the rows will present a very naked and unsatisfactory appearance; but my opinion is, these birds never injure a bud. The real predators are bullfinches, tomtits, and, I am inclined to think to some extent, chaffinches. These are sometimes sad nuisances. I never found till this year the buds of the Quince taken, but one in my garden a month ago, had in two days every incipient blossom devoured or destroyed.

Gooseberries, however, are the special objects of their attacks. A gentleman in the neighbourhood informed me, that he had on this account every Gooseberry tree in his garden grubbed

up. One does not, however, like to be beaten after that fashion. For some years I delayed pruning till late in the spring, and persevered with the thread and egg-shell system, but to little purpose. For the last two years I have pruned early, and well whitewashed every shoot and bud with considerable success. I had a good crop last year, and have at present the prospect of an extra large one. I think I have derived one advantage by the buds being so taken formerly. Not enduring the naked appearance of the trees, I cut them in close, and am now decidedly of opinion that the young wood for the Gooseberry is the best, especially for the preserving sorts. Most of my trees, now twenty years old, might well pass for five or six, all the wood of some of them not being older than three years. People are sometimes astonished to see the strength of the shoots, some of them upwards of 2 feet long, and covered with buds or fruit.

There are various species for extirpating the Gooseberry grub. I have managed for years to keep it down by taking off the first perforated leaves. The grubs are easily enough seen, and in five minutes as many are destroyed as might constitute a legion.—J. M.

PEACH-GROWING IN NEW JERSEY.

I AM a subscriber, and on the principle of distance lending enchantment, derive, perhaps, as much satisfaction from your Journal as those nearer your door.

A writer on the "Meteorology of Fruit-tree Houses," in the Number of December 19th, says, "It would be highly interesting to learn from the United States, taking New Jersey for instance, where Peaches are grown so largely, how the day and night temperature varies in the ripening season, and whether it is ever as low as our brick walls and orchard-houses." As I live in New Jersey, and, indeed, in the *Jerseyist* part of New Jersey, I propose to give you a few facts on the subject referred to.

Peaches ripen here chiefly in August and September. The maximum temperature in August is about 95°, and the minimum is from 52° to 55°. In September the maximum is from 78° to 80°, and the minimum about 40°. In August, the weather is generally of a sultry heat both by day and by night, especially during the earlier part of the month; but towards the end of the month the nights become more cool and refreshing, often with very heavy dew. The minimum mentioned above is chiefly reached during a cold storm from the east or north-east.

I live three miles from the salt water, and fifteen miles from the sea. In my neighbourhood the soil is extremely sandy. Indeed, in very much exposed situations, the wind drives the sand about to such an extent that scarcely anything in the way of vegetation finds a resting place long to grow, even if it could find any nourishment for support. On one of our small hill sides, fully exposed to the violent north-west winds, a sort of Heather (*Hudsonia ericoides*), is the only plant that has gained a foothold, and maintained it. This is only found in dry sand near the coast.

For miles about me, certainly not more than one acre in ten has ever been cultivated. The woods having been nearly all cut away, a low growth of Pine, scrub Oak, and underbrush has sprung up, clothing most of the rounding hill slopes as far as the eye can reach. This underbrush is, in great part, composed of Blackberry and Whortleberry bushes, the fruit of which begin to ripen early in July. The berries are picked by women and children, and sent to New York, twenty-five miles distant, where they find a ready sale, at prices varying from 2*l.* to 6*l.* a-quart, of your money. When this woodland is cleared, the sand is found to be rich in vegetable matter, as you may suppose, and, with the aid of a dressing of farmyard manure, grows many fruits, flowers, and vegetables in perfection. Peach trees in this soil make an astonishing growth, and the flavour of the fruit is the concentration of excellence, far finer than when the trees are grown on the heavy land a few miles distant. The trees themselves will not live so long as in heavier soil; but Peach orchards are easily renewed, and in fruit ten years of perfection are better than twelve of mediocrity. In this case, "a short life and a merry one" is no bad motto.

At the risk of troubling you with too long a letter, I want to say a word or two regarding the soil, as influencing the flavour of fruits, a subject, I think, not sufficiently considered. As an example: Melons which are wonderfully fine in our new and sandy ground, when grown on a heavy clay loam, about seven miles distant, are really not worth eating. So, too, the Pear

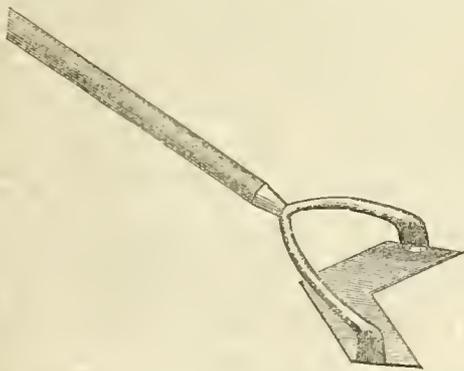
Loise Bonne of Jersey, on the Quince stock, is of very first quality with us; on the heavy soil it is astringent and hardly second-rate. Then, too, there is an American Grape, the Diana, highly esteemed in many parts of the country, but in our soil strongly and offensively musky.

Should you care to hear from me again, I may write about some of our New Jersey wild flowers, Ferns, &c. In none of your English catalogues do I see the name of the climbing Fern (*Lygodium palmatum*), of which I send you two leaves. It is rather rare. In all my wanderings I have only found it in one place in our woods. It gracefully twines among the bushes, reaching a height of from 2 to 4 feet. This Fern is so hardy, that the leaves I send you were picked yesterday (March 29th), perfectly fresh and green, after having endured a frost of 20° below zero this winter, the coldest weather ever known here.—GEORGE SUCH.

[Such communications are always interesting, and we shall be glad to hear from you again. The Fern which you sent was correctly named *Lygodium palmatum*; it is to be found in several English catalogues.—Ens.]

A NEW HOE.

I THINK I have a good thing now; and, with your permission, will tell your readers what it is. Being some time since in the store of Mr. Alfred Bridgeman, my attention was attracted by a curious-looking implement, painted red; in fact, it was the red paint that first drew my attention. On examination, this curious implement proved to be a hoe. At first I thought it had been made "wrong end foremost;" this, however, was not so; still, I am inclined to believe that it might be made both ways with advantage. It will be seen that the hoe is in the form of a wedge, both the front and back edges being sharp. It thus has a double motion, or, in other words, a pushing and a draw cut, which enables one to get over the ground very rapidly. From the form of the hoe, the cut on both sides is a draw cut, like that of the knife, the very best that can be used. The wedge form, too, while it presents a very large cutting surface, causes the hoe to enter the ground and pass under the surface with a comparatively small expenditure of power. It will naturally be inferred, on looking at the engraving, that the draw motion of this hoe is easier than the thrust, and this is the case.



I have used this hoe during most of the present season. It is decidedly the best tool of the kind I have ever used; so good, indeed, that I am unwilling that others should remain in ignorance of it. At first I thought it was just a little awkward, as many others may; but I soon got the "hang of it," and then it worked like a charm. I use it with both motions, backwards and forwards, and am astonished how rapidly I get over the ground. The draw motion is admirable. I am sure I can do twice as much work with it as I can with the common pushing hoe, and do it easier, if not better. With the draw motion I can cut down with ease weeds so large that I cannot move them with the common hoe.

Of course, nobody should let weeds of any kind grow to a large size; but they will sometimes in spite of you, especially in a wet season, and then it is well to know that there is an implement that will cut them down like grass. This it does because of its draw-cut.

Another advantage possessed by this hoe is that you can cut close up to a row of plants without danger of cutting them off.

The points on the lower side pick out the weeds nicely from between and around the plants, and thus save much stooping and hand-work.

If this should meet the maker's eye, I would suggest to him that he make the handle longer: it is now too short. He should also make at least three sizes—6, 8, and 10 inches wide. The present one is 8 inches, which is too wide for much work to be done in the garden.—P. B. MEAD, *New York* (in *American Gardener's Monthly*).

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

PEPEROMIA MARMORATA (Marble-leaved Peperomia).—*Nat. ord.*, Piperaceæ. *Linn.*, Diandria Monogynia. Native of South Brazil. Leaves dark green, variously marbled with very pale green.—(*Bot. Mag.*, t. 5568.)

ERICINELLA MANNII (Camerouna Mountain Heath).—*Nat. ord.*, Ericaceæ. *Linn.*, Tetrandria Monogynia. Native of Fernando Po and Cameroun Mountains, at elevations between 4000 and 10,000 feet. Flowers rose-coloured.—(*Ibid.*, t. 5569.)

POLYCHILOS CORNU-CERVI (Stag's-horn Polychilos).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Moulmein. Imported by Messrs. Low. Petals yellowish green striped with reddish brown.—(*Ibid.*, t. 5570.)

TACSONIA VAN VOLKEMII (Van Volkem's Passion-Flower).—*Nat. ord.*, Passifloræ. *Linn.*, Pentandria Trigynia. Native of the temperate region of New Grenada, and promises to eclipse the *Lapageria*. Flowers crimson.—(*Ibid.*, t. 5571.)

MILTONIA ANCEPS (Two-edged-stemmed Miltonia).—*Nat. ord.*, Orchidaceæ. *Linn.*, Gynandria Monandria. Native of Brazil. Re-introduced by Messrs. Low. Sepals and petals yellow; lip white, dotted and striped with purplish crimson.—(*Ibid.*, t. 5572.)

MUSSËNDA LUTEOLA (Captain Grant's Mussenda).—*Nat. ord.*, Rubiaceæ. *Linn.*, Pentandria Monogynia. Introduced by Captain Grant, companion of Captain Speke, from the country near the head of the Nile. Flowers primrose-coloured; one segment of the calyx forms a yellowish white leaf.—(*Ibid.*, t. 5573.)

EPIPHYLLUM TRUNCATUM ELEGANS.—Flowers scarlet, with purple centre. Sent out by Mr. W. Bull, Chelsea.—(*Floral Mag.*, pl. 285.)

PELARGONIUM PELTATUM ELEGANS.—An ivy-leaved kind. Sent out by Messrs. E. G. Henderson & Son. Flowers delicate pink.—(*Ibid.*, pl. 286.)

MARANTA ILLUSTRIS.—Native of the High Amazon in Ecuador. Leaves deep green above, barred with still deeper green, and a zig-zag band round near the edge coloured yellowish white; underneath dull purple.—(*Ibid.*, pl. 287.)

DOUBLE PRIMULAS.—Sent out by Messrs. F. & A. Smith, Dulwich. *Kermesina plena*, rosy carmine. *Queen of England*, white with rosy tinge.—(*Ibid.*, pl. 288.)

GLADIOLUS.—*Our Little Lucy*.—"This is one of the beautiful varieties of *Gladiolus* which have been raised by Mr. Standish, of Ascot. It is due to the successful efforts of Mr. Standish to state that he has contributed very largely to the improvement manifested among these showy popular flowers. He has, indeed, as respects the status of English-raised varieties, placed them quite on an equality with those of continental origin, and what M. Seuchet's *Gladioli* are amongst those raised in France, Mr. Standish's novelties are amongst those of English parentage. Indeed, we question if some of his flowers—that named John Standish, for example, now unfortunately lost to cultivators—have ever been equalled in those characteristics which mark high quality in the flowers.

"The variety we now figure, by a process which scarcely does it justice, has already won a position for itself in the ranks of floriculture. It was shown at a meeting of the Floral Committee on the 27th of September, 1864, and on that occasion won a first-class certificate. In the report of the meeting referred to, it is spoken of in the following terms:—"A very fine and novel variety, of a rosy magenta colour, striped and splashed with white; the lip segments feathered with purple. It will be quite an acquisition among these showy autumn flowers."—(*Florist and Pomologist*, v., 65.)

FRIYLLARIA MELEAGRIS.—This is now in blossom in several of the moist meadows about Oxford. I picked a good handful

this afternoon (April 21), in Christ Church meadow, on the south side, near the University barges on the river, among which were several varieties—red, brown, white, and yellow.—HENRY BURNEY.

WORK FOR THE WEEK.

KITCHEN GARDEN.

CONTINUE the trenching of ground as it becomes vacant, and during the dry weather keep it well forked about. *Asparagus*, the young plants will now be ready for planting; if the ground has been properly prepared, stretch a line and take out a trench sufficiently wide and deep to allow of spreading the roots, then cover the crowns about 2 inches deep. In strong imperfectly drained soils, sand should be placed about the roots and over the crowns. The roots should be taken up carefully, and any which appear to be decaying about the crown should be rejected. Now is also a good time to sow the seed in drills about an inch deep, scattering it thinly, and covering it evenly with the finest of the soil. The seeds to be sown in drills 15 inches apart, thinning out the plants in the rows to 4 inches apart to furnish plants for transplanting after one or two seasons' growth. *Broccoli*, sow Early Purple and Myatt's White Cape, also Waleheren for late autumn use. *Beet*, sow a full crop of Red, if not already done. *Brussels Sprouts*, prick out the seedling plants of the earliest sown, and also of Savoys, to make them stocky for final transplanting. *Cauliflowers*, draw the earth up to the most forward, and give plentiful applications of liquid manure. *Celery*, continue to prick out; this must always be kept well supplied with water, rapid and continuous growth being a very essential point in its cultivation if it is required large. If the earliest sown plants receive any check from drought the chances are that they will run to seed. *Dwarf Kidney Beans*, sow a full crop, and *Scarlet Runners* if it be preferable to sow in the open ground, instead of transplanting, as recommended last week. In some soils wireworm is very apt to attack the cotyledons during the progress of germination—to remedy which, after the Beans are laid in the drills, water them with a liquid formed of one gallon of ammoniacal liquor from the gasworks, diluted with six or eight gallons of water according to the strength of the liquor, after which let them be covered with 2 inches of charred wood or refuse, and the ground levelled over them. The charred materials appear to be peculiarly agreeable to them, as they come of a most luxuriant dark green, and are very prolific. *Lettuces*, repeat the sowings of all sorts, and thin out and transplant those advancing as occasion may require. *Turnips*, sow a good breadth, the ground for which should be well dressed with wood ash or charred refuse. Hoeing, surface-stirring, and thinning out advancing crops must be persevered in with diligence and activity.

FRUIT GARDEN.

Great activity must prevail in this department. See that the soil is well pulverised about the roots of the trees, and that all newly-planted trees are sufficiently mulched. Keep a good look out for the numerous tribes of insects, and apply remedies in time. Continue moderately the disbudding of Peaches, Nectarines, and Apricots. When Vines have pushed sufficiently to distinguish the fruit-bearing shoots, let all superfluous ones be immediately removed. The blossoms of Pears and Plums are so thick that we would suggest the propriety of removing a portion, but perhaps it may be said, Let frost do its work first.

FLOWER GARDEN.

The present is unfavourable weather for planting evergreens, owing to the prevalence of dry cutting winds. As it is more than probable that where much planting was intended, part of it may yet remain on hand, we may observe that some kinds of evergreens may yet be safely removed, taking the precautions to water them at first planting and occasionally afterwards, to well mulch the surface, and to damp the foliage over in the evenings of dry days. These attentions, which are indispensable should dry weather occur, will enable late-planted evergreens to start in most cases freely. We have found Hollies, Portugal Laurels, Evergreen Oaks, Red Cedars, Arbor Vita, &c., take root freely now. Another sowing of annuals may now be made either on an open border for transplanting, or on small squares of turf laid with the grassy side downwards. When the plants are up, the pieces of turf, with the plants, may safely be removed to their final quarters. As the planting-out season approaches, have everything ready for hardening off the plants, that they may experience no check by removal, and

turn over and well work the soil to bring it into a proper state for planting.

GREENHOUSE AND CONSERVATORY.

Among winter-blooming plants we have few that are so attractive and so useful as *Gesnera oblongata* and *Euphorbia jacquiniiflora*, both being profuse bloomers and remaining long in beauty. These should be extensively grown wherever winter flowers are valued, and if at the expense of neglecting some of our more recently introduced subjects, they should be afforded every necessary accommodation and attention at the present season, in order to secure good specimens for next winter. Also, attend to *Correas*, affording them sufficient pot room and a growing temperature, so as to induce free growth at the present season, and have the wood well matured early in autumn, which is the secret of having them finely in bloom throughout the winter. *Primula sinensis*, especially the double varieties, is also deserving of every attention and should not be neglected at the present season. *Fuchsias* intended for large specimens will require to be shaded from bright sunshine, and will be greatly benefited by a liberal supply of manure water. With cold nights and scorching days, there is some difficulty in managing the plants in the conservatory. The shades, if not already on, should be put on forthwith, as until we have more genial weather it will be found more advantageous to shade during the middle of the day than to admit strong currents of dry air. The newly-shifted plants in the greenhouse are now beginning to feel the benefit of the new soil, and if properly encouraged will grow rapidly, endeavour to secure clean, short, stubby growth, and strong foliage. Those plants which have fairly taken hold of the new soil—such as *Boronias*, *Pimeleas*, &c., and which require stopping to make them bushy, should be stopped at once. Keep a moist atmosphere by sprinkling the house twice or thrice a-day.

STOVE.

Attend to training the twiners as they advance in growth, and do not allow them to become entangled before giving them attention. Attend, also, to the stopping and training of other plants, and afford those growing freely plenty of pot room. Continue shifting all *Orchids* that require it. Now that the growing season has fairly set in, care must be taken that nothing suffers from want of water. Apply the syringe liberally, but not using too much force, and early in the morning before the sun shines strongly upon the house, at the same time giving a little air to prevent scorching until the shade is let down. Continue this treatment during the present month, and about the 10th discontinue fires, and between eleven and twelve o'clock thoroughly wet all the paths, walls, &c. This will suffice for the day unless it is very warm weather, when a sprinkling from a fine-rosed syringe will be found necessary, but in no case must water be supplied after midday, when the fires are discontinued. In dull, cold, or wet weather little or no water must be applied; on the contrary, a little fire for two or three hours may be necessary. The natural lowering of the temperature would be attended with much harm if the atmosphere were overcharged with moisture, for the condensation which takes place under these circumstances settles upon the flowers and destroys their beauty. This can be prevented by proper attention to airing and a judicious application of water. Keep up a pleasant temperature of from 70° to 80° by day, and by night it may be safely and beneficially allowed to go down to 60°.

PITS AND FRAMES.

Continue to pot-off rooted cuttings. These potted off at a former period will be now becoming established in their pots. Remove them from the hotbed to a cold pit, and plunge them in sand. See that they do not want for water and shading during hot sunny days. Attend frequently to the stopping of the shoots to induce a robust bushy growth.—W. KEANE.

DOINGS OF THE LAST WEEK.

HARDLY ever knew such a week for the water-pail. A fierce, cloudless sun, and a dry parching wind, tried everything, and especially whatever was fresh planted, or fresh potted. All the nice rules frequently given for watering had to be set aside, and the spout and the rose of the watering-pot, in conjunction with shading and syringing, had to be brought into requisition without ceremony to keep things alive. The change that the sun has made in the pastures and fields is wonderful. Now is seen the impropriety of ploughing or digging heavy soil when in a

wet, claggy condition. It is now like so many lumps of iron, defying rakes, rollers, and clod-crushers. A farmer told us the other day, that it would have paid him better to have kept his horses at home, and paid the men for a holiday. The wet weather so long continued, and other causes, have thrown us behind with our work, and now it would be a privilege to be able to make each man into three.

Now is a good time to turn a horse in to roll the lawns thoroughly, as little mark will be left by his feet. It is a sad waste of time and labour, except in small places, to make three or four men draw a heavy roller, and a light roller is of little use at present. If lawns are thoroughly and heavily rolled this month, they will be much more easily mown and machined during the season.

As we are very busy, on a part of the lawn, instead of mowing, we merely swept the Daisies off with the Daisy knife. Several readers have written to us hoping and believing we make too much of the expense of a lawn. We know full well that when hope is buoyant and strong, it requires only a short journey to reach belief; but "facts are stubborn things." The proprietor of a pretty small place informed us lately, that he was coaxed into enlarging his lawn, on the faith that it would not involve more than an extra twenty-pound note per annum; but five times that sum was nearer the mark. It is all very nice to dream of switching it over with the scythe, or vastly more economically running a small hand-cutting machine over it; but disappointments and untidy lawns would alike be avoided if it were borne in mind, that in general seasons, lawns to be nice ought to be gone over at least three times a fortnight, from April to November, and several times before and after these periods.

From a mass of other work we have never been able to have the lawns here presentable until the middle of June, being obliged to content ourselves with keeping the most exposed and particular parts. In many places, part of what is considered lawn, or kept grounds, might be left in a comparatively rough state, mown merely several times in the season, and with little detriment to the general effect; but such a mode of managing small lawns close to a residence is altogether out of character, and no lawn, or one half or quarter the size, would be better in every way. To a number of explicit inquiries as to the time and labour involved in keeping certain spaces of lawn, we would give, and can only give, the general answer, that there is such a difference in grass, and in the expertness of men becoming used to their work, that before making additions it is well to note carefully the time required to manage a certain portion, going over it on an average three times in a fortnight. In particular places we have often found it necessary to machine the grass twice a-week.

In many suburban villas the grass plat in front is often a great eyesore. Many men engaged in business from 9 A.M. to 4 P.M., would do much to keep their little gardens nice, but the grass is a difficulty, as they cannot work a machine well in the morning. In many such cases, it would be far better if the flower-beds were on stone or gravel, as all tidying could be done in the morning or evening. To a certain extent it is well for every one to stick to his occupation, and gardeners should have their appropriate work; but then everybody is supposed to be more or less of a gardener; and it is well that it is so, as whatever pleasure there may be in looking at a garden, that pleasure and interest are easily enhanced when the pleasing effect is at least partly the result of our own labour.

This dry weather has stopped some alterations and turfing operations. That already laid down is standing the weather well; if it should crack at the seams we will scatter some fine soil along them, and then the first rains will make all right. In extreme cases, we have thrown a little soil all over, and swept it off after rain and dryness before the grass grew much. One gentleman is going to a new house in May, and wishes to have a grass plat, but is afraid to venture this season, but would like to set about it if practicable. There is no question as to the practicability, if, as he says, there is no difficulty in procuring the turf. We have laid turf in all the summer months, and for small plots there need be no difficulty, so long as a little extra labour can be given. We would proceed thus—Mow the grass short, whence the turf is to be taken, a few days beforehand, so that the grass shall be growing afresh, and if a shower comes all the better. Then level the plot so as to have all ready for the turf; bring the turf home carefully, and have two tubs if they can be had; fill both with turf, and let it soak in water for a quarter of an hour, and as soon as the first tub is empty fill it again, so that the turf may soak whilst that in the second is

being taken out. Water the ground, if dry, through a rose, before putting the turf on it. Beat and roll in the usual way, and growth will commence at once. We have scarcely ever found more work necessary, except filling up the seams with a little earth if the weather proved very dry after turfing. Thus managed, turf laid in May may be a nice grass plat in June and July. Of course, less labour would be required if the work were done before March, but the above mode may suit some entering on new residences at this season.

KITCHEN GARDEN.

The general operations were very much the same as those detailed in last and previous weeks. Fresh-sown seeds were watered and shaded with a few branches. Ridge and pickling Cucumbers, Vegetable Marrows, &c., were potted off to become established before hardening them off; Tomatoes, &c., were likewise potted and pricked off, Cauliflowers watered, Lettuces pricked off, and arrangements made for pricking out good plants of Celery, and smaller ones to be well shaded and protected. Sowed more Beans in pots to be transplanted, and a lot of Scarlet Runners in boxes to be transplanted, as we think they bear sooner than when sown at once, and can be defended with a few branches before the May frosts are over. We would have liked to have finished our Potato planting, but have been obliged to defer it, to get on with other matters that could not be delayed with propriety.

FRUIT GARDEN.

Out of doors much the same as in previous weeks. In the orchard-house noticed for the first time this season a few of the *brown aphid* (*Aphis persicae*), on a small Peach tree. Put some Quassia chips in a pail, poured some boiling water over them, and covered up with a cloth, as there was a hole in our big kettle, and therefore we could not boil the chips; and about 7 P.M. syringed the tree with the decoction, or tea, at a heat of 130°, repeating the same in the morning at six o'clock. We have seen none of these horrid visitors since, but will keep a sharp look out, as of all insects this is the worst to conquer. We did hope we should never have seen them again, and as yet this is the only instance; but then their powers of reproduction almost exceed belief. We found last year that soft-soap water, and a little of the bitter from Quassia chips, were a very effectual means for giving them their quietus; but the great means of security is to attack them at once, and when one makes its appearance never to wait until a second show itself. The powers of reproduction of the green fly are wonderful—beyond calculation in fact, but are nothing as compared with those of the brown aphid; and, besides, the green fly is a trifle to destroy and eradicate. As yet in these orchard-houses we have seen merely two or three traces of the common green fly; and as the shoots had to be removed in myriads, we took off the few shoots that were affected, and stuck them in our pockets until we had the opportunity of turning these pockets securely out and emptying them in a furnace. If the houses can be kept thoroughly clean by such simple means, it is better in every way than resorting to washings and smokings, which so far affect the plants, whilst they do not always destroy the insects.

As it was possible, however, that in pocketing these twenty or thirty small shoots with fly on them some insects might drop on the wall or the neighbouring shoots, and begin not only their devouring but their propagating functions, we placed a pound of Gishurst, having it by us, and a pound of Quassia chips, in a pail—the Gishurst sliced thin—filled the pail with boiling water, covered it up with several layers of cloth, and allowed the whole to stand ten hours. We then strained the contents of the pail into a barrel of thirty gallons, filled up with water at 125°, and syringed the trees well over. We have not seen a green fly since; but if anything will bring them back this scorching weather, with cold winds, will do so. We have not seen a fly in our early Peach-house as yet, though crammed with Strawberries and many other plants, and we never used the syringe less. The great point of safety as respects insects is to attack them at once—as soon as they show themselves, and not to wait until they take possession and deposit their myriads of eggs. So suddenly do they come, and in such myriads, that there is a little excuse for some otherwise clever men almost believing in spontaneous generation. Just to-day, in a frame of nice healthy Cucumbers, on turning over the leaves a few green fly were seen plastered on the under side of the leaves. Not one was seen until after this dry scorching weather. Whence did they come? This frame had been used for several purposes during the winter. The woodwork inside had been tho-

roughly washed with water as nearly at the boiling point as it could be used. All the woodwork had also been well washed instead of painting with lime and sulphur. Fresh dung and fresh soil had been used—and whence in these circumstances came the little clusters of green fly? There they are, and we know they could only come in the usual way; and the conclusion at which we arrive is, that unless thoroughly crushed it is scarcely possible to destroy the eggs of insects, if they have any access to air when hatching-time comes.

To destroy such insects in frames and pits nothing is more effectual than tobacco smoke. The experienced may use bruised Laurel leaves, or even burn them like tobacco, but they may easily injure the plants by doing so; whilst less care is required in the case of shag tobacco, and the expense of the article will be more apt to guard against its abundant use. In frames and pits there is no better plan than having a hole in the wood or wall, the size of a common cork, through which the funnel of a fumigating bellows or machine may pass, or a pot with a hole in its side may be used, some live cinders put beneath, tobacco or tobacco paper above, and a common bellows' pipe inserted through the hole in the wall, to blow the pot until the place is full of the smoke. If a fumigating machine is used there will be no danger of the smoke being too hot. If a pot and the common bellows are used, plenty of cool damp moss should cover the tobacco, so that the smoke may be cool when it strikes on the plants. Hot tobacco smoke will kill every living vegetable. We are not learned enough to explain the reason, but numerous facts tell us that tobacco smoke is best used when the plants are rather dry and the leaves as dry as possible. When plants are syringed before they are smoked with tobacco the smoke will often be more injurious to the plants than it is to the insects. Experience may thus often be our teacher, though we cannot explain the principles of that experience. Facts tell us that when a house is damp, and the leaves are wet from the syringe or the watering-pot, the nicotine principle of the tobacco, when in the shape of smoke, is peculiarly dangerous, especially to all tender plants: therefore let plants be dry when smoked. In most places it will be economical to have a little box or a small close shed for smoking plants in, as then they can be smoked without tainting the whole house, and a pinch of tobacco will often thus do what pounds would not do in a larger place.

As a case in point, of not being able always to tell how things act, though having no doubt as to the results, we may mention that when the plants were all removed in winter we had a house very much overrun with insects thoroughly washed, walls, woodwork, &c., with very hot soap and water, and then, that every cranny should be reached, we made several little fires in the empty close house, and burned flowers of sulphur and bruised Laurel leaves. We knew that the sulphur would settle every growing thing, though it would not hurt the well-ripened wood of deciduous trees, as Vines, &c., and the result was pretty well what had been desired so far as the destruction of insects was concerned; but what alarmed us was to find, from the moisture used in the house, that the whitish woodwork was almost black from a sulphate and prussiate of lead, whilst our most strenuous efforts by means of brushes, water, and plenty of perseverance were next to totally ineffectual in removing it. Now here again experience became a better teacher to us than our limited science, for when, on repeating such extreme modes of cure, the paint on the woodwork was similarly affected, we just let it alone, and the atmosphere soon restored the colour to the paint, which no scrubbing of ours could accomplish. We will not have discoursed on insects in vain if it impress all beginners with the importance of taking them in time, before an opportunity is given for preparing for successional generations of enemies.

Removed most of the foreright shoots from Peaches, &c., preferring to do this often instead of at once or twice, in order that no check may be given to the growth of the trees. We hope we shall soon have a dull day for Grape-thinning. At present we have to confine such work to the morning and evening. Though the weather has obliged us to use the watering-pot freely, it has saved us trouble and expense in the way of firing, for in such parching weather we prefer in all forcing-houses to give less air and no fire heat during the day. In these sunny windy days it is amazing how little air does when the heating material is cool, and of all heat there is none equal to sun heat. Under such circumstances the little air must be given early, and then the heat from the sun rises gradually, and we would sooner see the houses rise gradually to 90° than give much air when the wind was so parching. Syringing

floors, stages, &c., helped to keep the inside atmosphere in a more genial condition. People, where coal is cheap, need not be so particular, but our impression is that many things even where fuel is plentiful are injured by too much fire heat. Remember that it is scarcely possible to draw or make a plant weak by sun heat if air is given early.

ORNAMENTAL DEPARTMENT.

Much the same as last week. Much time taken up with watering. Plant-houses were shaded by spattering the glass with whitened water, and flooded the floor, and syringed the stages, to keep the atmosphere moist and cool. Filled the frames with the cuttings alluded to last week. Moved all Scarlet Geraniums from the vineries, where the shade would make them weak, and planted great numbers of Calceolarias and Geraniums in "earth-pits," in rows 4 inches or so apart, where they will remain until bedding time, protected with cloth, mats, hurdles, and what we can obtain. The Calceolarias were a fine sight before being moved, as in most cases not one in a thousand cuttings had failed, and not a trace of an insect on them. It would never have done to have planted them out finally from such a thicket. We trust in three weeks or a month they will make nice balls for lifting. All these things require care and attention, and must have it to do well.—R. F.

COVENT GARDEN MARKET.—April 28.

A FAIR supply, and great improvement in the quality of many kinds of produce. Kidney Beans are now arriving in considerable quantities along with the other foreign imports, which comprise Asparagus, Artichokes, young Carrots and Turnips, Cardoons, and Green Peas. Dessert Apples and Pears are limited to a few varieties. Good samples of both Ash-leaved and Round Potatoes have come in from the west of England and the Channel Islands.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons..... each	0	10	0	0
Apricots doz.	0	0	0	0	Nectarines..... doz.	0	0	0	0
Cherries lb.	0	0	0	0	Oranges..... 100	6	0	13	0
Chestnuts..... bush.	8	0	16	0	Peaches..... doz.	0	0	0	0
Currants, Red ½ sieve	0	0	0	0	Pears (dessert) . doz.	10	0	15	0
Black..... doz.	0	0	0	0	kitchen..... doz.	0	0	0	0
Figs..... doz.	8	0	15	0	Pine Apples..... lb.	8	0	12	0
Filberts..... lb.	0	0	0	0	Plums..... ½ sieve	0	0	0	0
Cobs..... 100lbs.	0	0	16	0	Quinces..... ½ sieve	0	0	0	0
Gooseberries ½ sieve	0	0	0	0	Raspberries..... lb.	0	0	0	0
Grapes, Hothouse. lb.	12	0	18	0	Strawberries..... oz.	1	0	1	6
Lemons..... 100	6	0	10	0	Walnuts..... bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... each	0	6	10	0	Leeks..... bunch	0	3	10	0
Asparagus... bundle	3	0	8	0	Lettuce..... per doz.	1	0	1	6
Beans, Broad. bushel	0	0	0	0	Mushrooms..... pottle	2	0	3	0
Kidney..... 100	1	0	1	6	Mustd. & Cress, punnet	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... bushel	3	0	5	0
Broccoli..... bundle	1	0	1	6	Parsley..... sieve	2	0	3	0
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips..... doz.	0	9	1	6
Cabbage..... doz.	1	0	2	0	Peas..... ½ sieve	7	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	2	6	4	0
Carrots..... bunch	0	4	0	8	Kidney..... doz.	3	0	4	0
Cauliflower..... doz.	2	0	6	0	Radishes . doz. hands	0	6	1	0
Celery..... bundle	2	0	3	0	Rhubarb..... bundle	0	6	1	0
Cucumbers..... each	0	6	2	0	Savoys..... doz.	2	0	3	0
pickling..... doz.	0	0	0	0	Sea-kale..... basket	1	6	2	6
Endive..... doz.	2	0	0	0	Shallots..... lb.	0	8	0	0
Fennel..... bunch	0	3	0	0	Spinach..... bushel	3	6	0	0
Garlic..... lb.	1	0	0	0	Tomatoes..... ½ sieve	0	0	0	0
Herbs..... bunch	0	3	0	0	Turnips..... bunch	0	4	0	6
Horsoradish . bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUE RECEIVED.

James Carter & Co., 237, 238, and 261, High Holborn, London, W.C.—*Gardener's and Farmer's Vade-Mecum. Part III., Stove, Greenhouse, and Bedding Plants.*

TO CORRESPONDENTS.

COTTAGE GARDENERS' DICTIONARY (B. W. F.).—Thank you for the slip you enclosed. It is but a hunt on the trail of a red herring. Dr. Hogg never had the slightest pecuniary interest in the "Cottage Gardeners' Dictionary," and neither has "his partner," it being, we believe, the property of Mr. H. G. Bohn, or of his successors. The question of its merits is simply one of opinion. On one side there are ranged upwards of 20,000 of the gardening public who have purchased it, and on the other—Who? The writers of the work, as the preface testifies, were James Barnes, of Bletton; Robert Errington, of Oulton; Donald Boston, of Shrubland; Robert Fish, of Putteridgebury; Thomas Weaver, of Wischester; and Thomas Appleby; and who is their critic? Its price is about 5s., a convenient sum for the light pocket of a young gardener with 12s. a-week, who has not got, and would have some difficulty in finding, nearly seven guineas to purchase as text-books those excellent but expensive works, "The Book of the Garden," "The Theory and Practice of Horticulture," and "The Gardener's Assistant."

ROCKWORK (*A Constant Subscriber*).—No work has been published on this subject. A volume is now going to press on garden plants, fully illustrated, which will contain some examples of rockwork.

STOVE FOR PORTABLE GREENHOUSE.—"C. B." would thank any one who will give information as to the best hot-water apparatus for a portable greenhouse, 20 feet by 12.

DRAINAGE WATER (*Salterton*).—The colouring matter in it is probably vegetable extract, and, if so, would not be injurious to your plants. You could easily determine whether the colouring is caused by oxide of iron. Put a little powdered nut-galls into a glassful of the water. It will strike a black color if much of the oxide is present.

CALICO SUBSTITUTE FOR GLASS (*E. Gray*).—For your frame proceed as follows:—Old pale linseed oil, 3 pints; sugar of lead (acetate of lead), 1 oz.; white resin, 4 ozs. Grind the acetate with a little of the oil, then add the rest and the resin. Incorporate thoroughly in a large iron pot over a gentle fire; and, with a large brush, apply hot to a fine calico stretched loosely previously, by means of tacks, upon the frame. On the following day it is fit for use, and may be either done over a second time, or tacked on tightly to remain. The quantity made according to this receipt will be sufficient for about 100 square feet of calico.

PLANTING BEDS AND BORDERS (*W. B. H.*).—We cannot do this for you. All that we can do is to correct what we consider wrong in the planting submitted to our judgment.

RIBBON-BORDER (*G. P.*).—We cannot plant; but for colours, say four rows, beginning at the front—1, white; 2, purple; 3, yellow; 4, scarlet. We know nothing of the position or the surroundings.

HORTICULTURAL INVENTION (*Impecunia*).—Not knowing anything of its nature, it is quite impossible for us to offer any suggestion. Implementation makers and wireworkers are very different manufacturers.

EPHYPHYLLUM TRUNCATUM (*A. C. H.*).—The rooting of your plant from every joint is a sign that it has few, if any, roots in the soil, which has, probably, become sour through imperfect drainage. You will do well to have the plant repotted, removing all the soil from the roots, if any, and using a compost of turfy sandy peat and charcoal, from the size of a hazel nut down to that of a pea, and a free admixture of sand. If the plant has no roots place it deeper in the soil by two or three joints. Water sparingly until new roots are formed, and then give more copious supplies.

PLANTS FOR A SHADY PLACE (*Messeron*).—Few plants will do well in such a situation as you describe. The best plant would be to convert it into a rockery, and grow there the more common kinds of hardy Ferns and alpine. The shrubs that would succeed fairly are—*Aucuba japonica*, *Berberis aquifolium*, *B. repens*, and *B. darwinii*, *Box*, common and variegated *Hollies*, common *Laurels*, *Cotoneaster microphylla*, *Privet*, *Rhododendron ponticum*, *St. John's Wort*, *Spurge Laurel*, *Snowberry*, *Ivy* of sorts for the walls, and *Periwinkle* to place where nothing else will grow. If you add common *Yew*, *Alexandrian Laurel*, and the common *Butcher's Broom*, you have nearly all the plants or shrubs calculated to grow in your situation.

FRUIT TREES NOT BEARING (*P. C.*).—Your Pear and Cherry trees producing abundance of bloom, but little fruit in proportion, may, probably, be rendered productive by thinning the trusses of bloom. We have found this answer with trees from which we could not obtain nearly the quantity of fruit that we wanted, although they were annually covered with bloom. We simply removed half the blossoms, and this we would advise you to do at once, giving a good watering with liquid manure after setting, and again in July. Mulching the surface with 3 inches of short manure would be advantageous, placing it on the border in autumn and pointing it in in the spring. Try thinning the blossoms.

QUINCE BARKEN (*Idem*).—The Quince is not a shy bearer, and we can only account for its not fruiting by the soil and situation not being suitable. It likes a somewhat moist soil, but not water stagnant in the subsoil. Perhaps your trees are very vigorous; if so, taking them up next autumn and replanting them would check their vigour and induce the formation of fruit-buds. Digging out a trench a yard from the tree all round, and below the roots, would also check vigour, and might induce fruitfulness, the trench being filled in again after cutting all roots thicker than a quill or straw.

WOOLICE IN MELON-PIT (*P. C.*).—Wrap a little dry hay loosely round a boiled Potato and place it in a small flower-pot, lay the pot on its side within the frame at night, and in the morning you will find the woollice secreted in the hay; shake them out into boiling water. A number of these hairs, and perseverance in setting them, will soon clear the pit.

MONOCHETUM INFERSUM (*T. E. H.*).—We will inquire about this.

COCA-NUT FIBRE REFUSE AS A MULCH (*J. G. H.*).—It is an excellent mulch for Roses if put 2 or 3 inches deep on the surface. It is one of the best retainers of moisture, and, consequently, is a good preventive of mildew on the Rose leaves.

BLACK APRIDES (*R. A. F.*).—After smoking with tobacco, we know of nothing better than softsoap water, clear, and quassia water, made by boiling 4 ozs. of quassia chips in a gallon of water. See what is said in "Doings of the Last Week" as to using hot water. You must not expect to free your trees of the pest at once.

TANOEIRINE ORANGE UNFRUITFUL (*Wychite*).—We would stop the young shoots, and give the plant all the sun possible.

GRAPE BUNCHES BECOMING TENDRILS (*G. P.*).—The want of a made border, and the want of drainage after such a wet winter and spring, are the causes of your Grape bunches degenerating into tendrils. As palliatives that may answer in the case of your strong-growing Vines, dig a deep drain in front of what you may consider to be the border, and use plenty of fire heat in the autumn to ripen the wood. From such Vines under such circumstances, we have obtained good crops, and especially when the bearing wood was on rods and not spurs. For a thorough remedy when the Vines should be lifted in October, and, a good drained border having been made, they should be replanted carefully.

LUMNAGO.—In reply to "A Soffersa," Mr. Fish says that the band of brown paper round the loins lasts, with him, from one to seven days, according to the work he is engaged in. For instance, on Friday he was thinning Grapes from 4.30 A.M. to 9 A.M., and the paper was reduced to a pulp. When he has been tying and regulating Vines, &c., above his head, the paper would split and creep upwards over the back, instead of over the loins. He is not particular as to the paper; thin or thick, white or brown, the gentle continuous friction is the thing. He uses a light band or belt to keep the paper pretty well in its place. His sufferings on the slightest movement used to be dreadful at times, and all he can say is that since the paper remedy he has suffered next to nothing; and if he goes without for a few days and has a hint of the old enemy coming, a fresh paper stops its advances. The remedy was given to him by three different people who used to be great sufferers, and he will be pleased if by such a simple means others should escape such tortures as he endured.

HYACINTHS NOT BLOOMING (*F. G.*).—We think your Hyacinths did root, and have been supported by these roots up to this time. Your deep planting and very rich soil, added to fresh manure, were likely to cause the base of the bulbs to damp or decay, the roots perishing. Ours this year have been and are particularly fine, and we first dig the ground as deeply as we can, which on our light gravelly soil is not more than 15 inches. We then take up the bulbs, and replant, with the crown 3 inches below the surface, in the first week in October, and in November and not later than the middle of December, mulch the surface with 3 inches of the short litter from a spent Mushroom-bed. This becomes mould by spring, and what there is left is pointed-in in spring, serving to loosen the soil between the rows. These are 9 inches apart every way, with Crocuses of the same colour between, so that we have a line of early and general spring bloom. We merely take up the roots in autumn, remove the offsets, and replant at once. The offsets are planted around three bulbs of blooming size in clumps, and these are not removed annually, but are allowed to grow for two or three years, and then we have fine clumps with a dozen spikes of bloom. Taking up the roots of Hyacinths and other bulbs where the soil is not unsuitable to their growth, is the cause of the diseases which sooner or later seize them, as in the case of the Tulip and Gladiolus of late in many places. Your Hyacinths seem to have gone off in the same manner, for just when about to bloom they suddenly withered. Do not plant so deeply, 3 or 4 inches will be enough; do not use fresh but well-rotted manure, and none if the soil is in good heart; and place the bulbs with their base on a thin layer of river sand, and cover the crown with the same. Protect from frost by a top-dressing of short litter not more than 3 inches thick, and in spring point it neatly in between the plants. If you follow these recommendations we think you will have a good bloom.

ALOCASIA METALLICA CULTURE (*S. E. H.*).—Turfy peat and loam in equal parts broken up with the hand two-thirds, well-reduced leaf-mould and charcoal broken to the size of a pea and not larger than a hazel nut in equal parts one-third, along with one-sixth of silver sand, make a compost that suits this plant well. The drainage must be good, and there should be a thin layer of moss or the most fibrous parts of the compost over it. It will do with a shift from a 6 to a 9-inch, or from a 9 into a 12-inch pot. In potting be careful to preserve the thick fleshy roots, and keep the base of the bulb-like part rather high. When growing it requires abundance of water, and should have a very humid atmosphere. This, however, should not be created by constantly syringing the foliage, which, as you conjecture, is impatient of that. The cause of the leaf-stem being scorched was the sun shining on water standing upon it. Shade should be given from bright sun from the end of March to October. The plant requires plenty of room, and to be kept near the glass. A temperature from 70° to 75° by night is essential, and the thermometer may rise to 90° by day in summer; in winter the plant will do in a temperature of from 60° to 65°. It should not be very firmly potted; the soil should be left free, but not too open.

NAMES OF PLANTS (*Lachenalia*).—The Fern is *Pellaea adiantifolia*. The Primulas are not superior, though good. (*A. E. E. B.*)—1, *Polystichum aculeatum*; 2, *Lastrea dilatata*. (*D. G.*)—*Doudia epipactis*. (*Prospera*).—The specimen sent was insufficient for determination. (*F. T. P.*)—*Scolopendrium vulgare* var. *cristatum*. (*G. R. C.*)—1, *Scolopendrium vulgare*; 2, *Pellaea adiantifolia*, probably. (*G. N.*)—Specimens very incomplete. 1, *Lastrea* sp.; 2, *Pteris longifolia*; 4, *Lastrea Filix-mas*; 6, *Polystichum aculeatum*; 7, *Zamia* sp., probably *Z. pumila*. (*H. H.*)—11, *Leptostichon scoparium*; 13, *Rivina levis*; 13, *Clerodendron fragrans flore pleno*; 14, *Cyrtanthera Pohlana*; 15, *Maranta bicolor*; 17, *Franthemum nervosum*; 18, *Amaryllis Johnsoni*; 19, *A. formosissima*; 20, *Brugmansia sanguinea*; 21, *Coleonema alba*; 23, *Cantua buxifolia*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending April 28th.

DATE.	BAROMETER.		THERMOMETER.				Wind	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 22	30.480	30.337	56	34	52	48½	E.	.00	Fine; dry haze; very fine.
Mon... 23	30.367	30.322	56	34	52	49	E.	.00	Cold, dry, easterly wind; fine; very fine.
Tues... 24	30.195	30.099	60	36	52	49	E.	.00	Fine; dry air; fine; very fine at night.
Wed... 25	30.079	30.022	66	30	52	49	E.	.00	Dry haze; cloudless, with excessively dry air; very fine.
Thurs... 26	29.974	29.864	75	46	53	49½	E.	.00	Dry haze; hot and dry; very fine at night.
Fri... 27	29.827	29.649	79	43	54	50	E.	.00	Fine; very hot, with excessively dry air; fine.
Sat... 28	29.851	29.428	68	37	54½	51	N.W.	.74	Cloudy and warm; cloudy; cold and heavy rain at night.
Mean	30.104	29.960	65.71	37.85	52.85	49.83	..	0.74	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RAILWAY CHARGES FOR POULTRY.

The following is a copy of the memorial sent by the Poultry Club to the Directors of various railways. We hope it will be sustained by other memorials, for the greater the number the more likely is the object to be attained:—

"The breeders and exhibitors of poultry whose names are hereto attached, being members of the Poultry Club resident in different parts of the kingdom, beg respectfully to call the attention of your Board to the grievances under which they labour. The high rates chargeable for carriage on poultry going to or coming from agricultural meetings and poultry shows are felt by them as a serious obstacle to the extension of such exhibitions. In many cases exhibitors living at the extreme ends of the kingdom, and even those not very far distant from the shows, are deterred from sending their poultry by the high charges made for carriage. They would respectfully suggest either of the following plans for the consideration of the Directors, as meeting their wants and tending to increase traffic, both of poultry and visitors, to shows throughout the kingdom, either—

"First, To permit such packages to be sent to shows at the usual full rates, and to be returned, when unsold, free of charge;

"Second, To allow them to go and return at half the usual rates when unsold;

"Third, To carry all poultry to and from every show at van-panels rate, but by express or passenger trains;

"Fourth, To adopt a uniform rate of one halfpenny per pound for the first hundred miles, and one farthing per pound for each hundred miles after, for conveyance by express or passenger train. The two latter would be, probably, the most easy to accomplish, as they would not interfere with general arrangements, and would be a great boon to your memorialists.

"The objections to sending by slow or luggage trains are, that the poultry would be so long on the road, and it is of the utmost importance that they should be delivered with the greatest dispatch at their destinations.

"Your memorialists would call special attention to the anomalous and uncertain nature of the charges made, wide differences often occurring between the outward and homeward charge on the same package, as well as in the rate of charge from different stations, thus debarring your memorialists from making any calculation as to the probable end of their expenses when entering their specimens for exhibition.

"Your memorialists hope that, considering the national importance that poultry-breeding is assuming in the present time of scarcity of animal food, the amount of traffic which such exhibitions promote upon your lines, and the probable increase both of the pens exhibited and of the exhibitions, you will take their case into your favourable consideration." [Here follow the names of the members.]

My notice last week relative to this subject promised the concluding list in the course of a few weeks. Since sending the same to "our Editors" circumstances have taken place which induce me to alter my determination. The facts are simply these: It will be in the recollection of the readers of "our Journal," that in my first papers on this subject I urged the propriety of the Poultry Club taking this matter up, and Mr. Tudman brought the matter before the meeting at Rochdale. Though absent I was his supporter on that occasion, but I also urged a memorial independent of the Club; but I think all must have understood that I meant our memorial to be in support of that of the Club, not to cut away the ground from it, and certainly in no spirit of opposition—this, indeed, would have been utter folly. To this end I entered into communication with the Secretary of the Club, asking him to sign, and begging him, as I could not be at Rochdale, to procure me some signatures to the independent memorial. To this I received no reply, and on a second appeal I found that the Secretary did not like to have his name appended to two memorials. I then asked what the Poultry Club intended to propose to the railway companies, that we might ask the same, and strive for the same end. The reply said that the memorial would soon be completed, and that I should hear further shortly. Accordingly, last week I had a few lines to say that the memorial would be published on Saturday the 21st! I was not prepared for this, and I can hardly gather whether the memo-

rial has been presented or not; but I feel that if it have our ought immediately to follow. Accordingly, I propose to have the following lithographed, with the names of those who have permitted me to sign their names attached to it, and to forward the same as soon as possible to the head-quarters of the various companies. This is not exactly the plan I wished to adopt, but I am willing to sink any minor differences. I feel that the signatures appended to our memorial are well known in the poultry world, and must carry some weight; so we must launch our venture and hope for the best. We will wish the Poultry Club all success in their effort.

"Gentlemen,—The breeders and exhibitors of poultry whose names are attached to this memorial beg respectfully to draw your attention to the hardships they have to complain of. Poultry exhibitions are now very general over the country. Their establishment has materially increased the passenger traffic and added to the revenue of railways, whilst the exhibitors themselves, in the support of the various exhibitions, have already heavy expenses to bear. The varied rates for the carriage of the baskets, the different rates charged for the same hampers on the same journey, the delay that frequently arises in transit,—all tend to disgust exhibitors, and lessen the number both of exhibitions and entries. Your memorialists are aware that the National Poultry Club have forwarded you a memorial on this subject; and as they agree with the tenor of that memorial, they trust that your Board will favourably consider the subject and give them some relief.

"Your memorialists beg respectfully to suggest that a moderate rate, the same on all lines throughout the country, would best meet the difficulties of the case; but either the third or fourth proposition of the Poultry Club would be a great boon, and would be gratefully appreciated by all those who are interested in the welfare and stability of these exhibitions.—We are, &c."

I intend to enclose with this a note from myself, stating that the documents authorising the appending of these signatures are in my possession.

There will probably be time for other names to be added if any other exhibitors choose to write me. I have heard in the affirmative from

Mrs. Hayne, 10s. 6d.

Mr. J. J. Fox.

Mr. T. Walmesley, 10s. 6d.

Mr. E. Sheerman, 5s. paid.

Mr. F. Parlett, 5s. paid.

Mr. E. Hutton.

Mr. J. R. Jessop, 5s. paid.

—JOSEPH HIXTON (Y. B. A. Z.), Hinton, near Bath.

HOUDAN, LA FLÈCHE, AND CRÈVE CŒUR FOWLS.

As I have imported some very choice specimens of La Flèche, Crève Cœur, and Houdan fowls, I am much interested by your mention of those breeds in your article on "Comparative Healthiness." I find, with you, that the Houdan are certainly the most hardy, and thrive excellently in confinement, and mine are now laying at the rate of six eggs in seven days. The La Flèche have also rapidly acclimatised themselves, and with me the Crève Cœur have proved the most delicate.

You may be interested to know that a sitting of Houdan eggs that I put under a hen some days ago weighed 29½ ozs. troy, the four largest being short of 2½ ozs. each, respectively 8, 49, 66, and 83 grains. I fancy few English breeds lay such fine eggs.—A. H. S. W.

[The weight of the eggs is much less than that of the Spanish, whose eggs average 3½ ozs.—Eds.]

BEWARE OF PICK-BOXES.

It is not Reynard, the fox, that, as he does on the Continent, thins a poultry-yard in England—he is too well taken care of, and is seldom obliged to eke out his breakfast with a young chicken—neither is it the marten, nor the cat, nor the roop, that is most to be feared. In all these cases prevention is not quite out of the question; but, when the birds disappear from the hamper or the box whilst left at the mercy of "queer frequenters" of railway stations, then it is that safety becomes quite a matter of chance.

In the first week in April I received a box from the Continent, that ought to have contained five pairs of Pigeons, but there were only four; and an almost irreparable loss, the only pair of the rarest of crested yellow Tumblers, was conspicuous by its absence. The thief must have had ample time to forcibly

pick his way through the wooden bars that let the air in from the top, and to tastefully select just the only pair of Pigeons, that even Mr. Brent in his book believes to be almost of fabulous origin. However, the unknown connoisseur did not stop there. During the second week another box arrived, which ought to have contained eight pairs of Pigeons, chiefly Hungarians and Siberian Ice Pigeons; but in reality there were no more than fifteen birds, one Siberian Ice Pigeon having taken flight through the oak boards of the box, as I am led to believe. Question, On which company to fix a claim for compensation? The journey extended over six or seven different railways, foreign and English, the birds having originally been entrusted, and complete in number, to a royal post office. I suppose I have to confine myself to grumbling, and to find consolation in the well-known phrase "There is no help for it" Therefore, now, when the gathering of the winged clans will commence, exhibitors beware of, "nimble hands;" they are more real than those which the Brothers Davenport ever made appear in the window of their magic closet.

The purpose of this communication, however, is not merely to serve as a caution for the benefit of Pigeon fanciers, like myself, but the motive is rather a selfish one, and shortly this: I am, to the best of my belief, at present the only possessor of Siberian Ice Pigeons in England, and I am equally sure that nobody else has imported crested Pigeons of the variety named, and, therefore, I should feel exceedingly obliged if managers of Pigeon shows would kindly communicate with me as soon as any other person may enter for exhibition birds answering to the names given.—FRANCIS BROEMEL, 2, Church Grove, Ladywell, Kent.

BEEES IN THE HOLY LAND.

My attention has been drawn to a note in your impression of the 10th ult., by "A DEVONSHIRE BEE-KEEPER," correcting a statement in my volume, "The Land of Israel," that the bee of Palestine is *Apis ligustica*.

I did not make the statement without the authority of eminent naturalists, and in support of the opinion that *A. ligustica* and *A. fasciata* are identical, I beg to forward the following extract from a letter of Mr. Frederick Smith, of the British Museum:—"The authority on which *Apis fasciata* is considered to be identical with *A. ligustica* is that of Gerstäcker, who has reduced the number of honey-bees of the genus *Apis* to four. I have published my own opinion in the 'Transactions of the Entomological Society,' and have more material in hand on the subject which I hope to publish shortly." There cannot be much higher authority than Mr. F. Smith.

Though I have reserved the details of the fauna of Palestine for my forthcoming work, under the auspices of the Ray Society, I have been careful in "The Land of Israel" never to introduce scientific names without the best authority within my reach. Your correspondent has rightly corrected me about the yellow bands on the thorax, but the antennæ do appear to me on comparison longer proportionally than those of *Apis mellifica*.—H. B. TRISTRAM, Greatham Vicarage, Stockton-on-Tees.

[As I most cordially indorse the opinion advanced by Mr. Tristram that "there cannot be much higher authority than Mr. F. Smith," I imagine he will at once accept the following passage, which I quote from a letter just received by me from that gentleman, as conclusively settling the point at issue between us.

"Since I published my paper, you sent me such material as at once settled the question of *A. fasciata* being abundantly distinct. . . . I certainly could not reject Gerstäcker's opinion eighteen months ago, but I am in a very different position now, and I am quite as satisfied that *A. fasciata* is distinct from *A. ligustica* as a species as I am of *A. dorsata* being distinct from *A. mellifica*."

I may state in elucidation of this last sentence that *A. dorsata* is the large and beautiful honey bee of the tropics, which, in point of size and brilliancy of colouring, may well rival our English hornet. The difference between this magnificent *Apis* and the ordinary English honey bee, *A. mellifica*, is, of course, so great that they may be deemed "wide as the poles asunder."

Dr. Gerstäcker himself declares that *Apis fasciata* is the form of honey bee "which is most distinguished from all others by its smaller size and light colour," and although he afterwards states that "the identity of the Italian with the northern bee

is demonstrated by the perfect mutual fertility of the two forms, and the African form approaches much more closely to the Italian than the latter does to the northern bee," he separately mentions *A. fasciata* and *A. ligustica* as two out of the six principal varieties which he enumerates as being comprised in one of the three perfectly distinct species into which he considers the genus *Apis* should be divided. How, therefore, the idea originated that this distinguished German naturalist declares these two varieties to be absolutely identical I am perfectly unable to discover.

With regard to the supposed "very long antennæ" of *A. fasciata*, I have carefully compared the antennæ of this species with those of both *A. ligustica* and *A. mellifica*, and find that there is really no difference whatever in their length.—A DEVONSHIRE BEE-KEEPER.]

FERTILE WORKERS.

EARLY this month (April), I missed a Ligurian queen which I had placed at the head of a stock of common bees driven from a cottager's hive last autumn. Notwithstanding her apparent absence, there were a great number of eggs deposited with the utmost regularity in the cells of one of the worker-combs, the presence of which caused me many unavailing searches after the missing sovereign. At the expiration of ten days, however, all doubts were set at rest by the discovery that the cells occupied in this manner were being elongated for the accommodation of drone larvæ. Finding, therefore, that the hive was indeed queenless, I speedily united the remaining bees to the stock which stood next to it, but deem the case worth notice as an unquestionable instance of the existence of fertile workers.—A DEVONSHIRE BEE-KEEPER.

NEVER DESPAIR.

For the encouragement of those inclined to despair when a calamity of any sort befalls their bees I write these lines. During the heavy gales of last November one of my strongest stocks was capsized. Those who love their bees may imagine my surprise and horror. I was, as it were, thunderstruck and helpless. There lay my splendid stock prostrate on the ground, and I felt at the moment more inclined to rush from the garden and leave the hive to its fate, than to do anything else. Shame and remorse, however, for such a feeling soon rallied me, and calling my man to my assistance, we set to work to replace the hive on its stand. When this was accomplished the honey poured out in streams, and with it the bodies of many beehonied and half-smothered bees. I found then that the only thing I could do was to raise the hive an inch from the floor-board all round, by this means giving free egress for the honey, and, above all, giving the bees an opportunity of collecting at the top of the hive where they might clean themselves, and be free from the broken combs. Having put saucers to catch the running honey, I, with a low heart, left them till the next morning. When I then went to them I found all the honey had run from the broken combs, and so, gently raising the hive, I discovered, to my delight, the bees that were alive all collected in a bunch at the top, and quiet. This gave me hope that the queen had escaped with her life, and so it has proved.

The stock I write of was a last year's swarm, at least it was two swarms joined, and, consequently, they were very strong; but, curiously enough, they had begun working on the floor-board, so that when I raised the hive there stood the combs, except those parts that were broken, erect on the board, and hardly a bit of comb left in the hive. I determined if possible to save the stock; so giving them a fresh floor-board, I put them on it, set them in their place, filled a super with about 10 lbs. of their honeycomb, and gave it them on the top of the hive, did them up for the winter, and left them to their fate. On the 1st of February I examined them, found them alive and well; gave them some more honey, as they had nearly consumed the 10 lbs., and now they are working hard making comb, and giving every promise of doing well.

The weight of honey taken from the hive was 34 lbs. The bees are in a wooden hive with a large glass window, and a hole at the top for supering. Through the window I can see the progress they are making with their comb, and as soon as they can rear a few young bees, no doubt the work will proceed more rapidly, and the hive will soon be filled.

These particulars may interest some, therefore I give them; for I do not imagine that the tenants of many hives in bee-history have escaped with their lives when they have had the misfortune to meet with such an accident as that which I relate.

As I am writing on bees, I will just mention my last year's success. I commenced the year with four stocks, and from these I had seven swarms, and took in supers, and from the hive that was blown down, 128 lbs. of virgin honey.—A GLOUCESTERSHIRE BEE-KEEPER.

IS THE TOMTIT AN ENEMY OF BEES?

Noticing the reply to "A SUBSCRIBER" in page 282, I wish to raise the question whether the tomtit, *alias* the "Hampshire bee-biter," is the friend of the apiary or its foe. I am inclined to believe he is only a scavenger, never having seen him seize a bee in an active state. When benumbed by cold, or paralysed upon the snow, the unfortunate bees in such circumstances afford him a rich repast; but then this is just as it should be. In any case the bees would be lost if the bee-master failed to collect and cherish them.—R. S.

IMPROVED FRAME-HIVE.

In reference to the remarks under the above heading, in page 300, allow me to state that the alteration there referred to will not be found the least troublesome, even by those who have adopted "another pattern." It never ought to be necessary for the front of any kind of hive to fit closely to the front of any bee-house. I invariably allow certainly not less than 2 or 3 inches space, which allows a free current of air to pass all round the hives, materially assisting the ventilation, and preventing the bees feeling the effects of a hot summer's sun playing upon the front of the bee-house.

Many bee-keepers have experienced the difficulty of loosening and lifting out the frames with the finger and thumb, which is obviated by the bars projecting through the back and front of the hive. The ends of the projecting bars can be held by both hands, and if the bar is placed at the proper distance from the front of the bee-house, there can be no difficulty whatever in manipulating.

It is true that when the top bar was cut through the solid wood, the divisions sometimes broke quite away, thereby causing great inconvenience and trouble; but this is entirely obviated by the use of Pettitt's patent metallic bar rest, as mentioned at page 266. These rests are made on the seven-eighths or Woodbury scale, the one-inch scale, and the 1½-inch, or Langstroth scale, and can be adapted to any frame (a Woodbury frame for instance), by the addition of a top bar of the required length, which can be attached to a Woodbury frame with a couple of screws, without in the least interfering with its present construction.—WYATT J. PETTITT, *The Apiary, Dover.*

OUR LETTER BOX.

DORKING COCKEREL WITH DISEASED HEAD (F. H.).—Bleeding in the foot was a mistake, and we imagine was carried to excess from the look of the comb, which was blanched as much as if the bird had had its throat cut. Bleeding should only be resorted to where there is giddiness and staggering, and then it should be from the comb, which in these cases is dark and lead-coloured. An egg-spoonful is enough to take. The eyes were gone, in a manner we have never before seen in a Dorking. It is a disease almost peculiar to Spanish, and incurable. We do not know the origin of it, and there is no treatment for it. It is not, however, likely to occur again. The brain was quite healthy.

ARTIFICIAL INCUBATION FAILING (G. M. F.).—There is little doubt but that the temperature of your incubator fell too low, and the chickens died. The water in which you try your eggs need not be at 103°, all that is necessary is that it should be warm.

DORKING CHICKENS' FEET DISEASED (A. L. B.).—Such a complaint as you describe will arise from bad flooring, such as stone, brick, or wood. This induces paralysis, and causes death. We always look with suspicion when we find our correspondents talk of keeping the "chickens warm." All the warmth they require they should get from food, and if they are freed from draughts, that is almost all the shelter necessary. Put the hen out of doors under her rip with the chickens, and feed them well. They will then recover from all their ailments.

NON-SITTING FOWLS FOR A CLAY SOIL (J. T. F. R.).—If you pin your faith to non-sitters, you must have Spanish; but we think you might keep Brahmas more advantageously. We do not think your cross would be a good one. You fear roup, and Hamburgs are subject to it. We have kept Brahmas twelve years and never had a case of roup.

DUCKLING LAME (J. R. B.).—Your Ducklings are perishing from being uncared for while too young to shift for themselves. You should have confined the hen where she could not have roosted. We fear all the brood will die.

FOWLS FOR A CONFINED SPACE (A. J.).—Spanish, Brahmas, and Cochins will all do in such a space as you describe. A cock is not necessary for the production of eggs.

BUFF COCHINS (N.).—We hardly know what you mean by fine eggs; but Cochins never lay large ones. It is certain that May pullets ought to have reared chickens and laid again before now. We believe you will make a very good hardy fowl by the cross you mention. Choose your pullets with white, clean legs.

DUCKS HATCHED UNDER A HEN (R. K. H.).—Yes, beyond a doubt they are good for stock. Assertions to the contrary are nonsense.

HENS EATING EGGS (E. H.).—There is no doubt it arises from a disordered state of body. It is fortunately an uncommon occurrence, but we fear those that begin seldom leave it off. In all cases of egg-eating we advise placing hard composition eggs under the culprits, they peck at them till their beaks are sore, and they are tired. They then give up the job in despair.

GEESE EATING THEIR EGGS—HAMBURGERS LOSING TAIL FEATHERS (F. B.).—Geese, like other poultry, eat their eggs sometimes. All poultry also addle their eggs. We always feel disposed to laugh or question when people declare so freely that "no hen could sit better or closer." It is very often the case that she sits well for forty-eight hours, till a gorm is developed, then she leaves till the eggs are cold, and then resily does sit closely. These eggs are spoiled. She is eating the Duck's eggs. If the hens lose their tail feathers it is probable that the places in which they lay are too small for them, and the feathers get broken. It is a serious disadvantage in some breeds for a cock to lose his sickle feathers, especially in Game and Cochins. If the stumps be pulled out, the feather will grow again in about ten weeks; if there is not time for them to grow again, it is better to leave the stumps in than to pull them out. The growth of the tail is considered to be a greater effort than making any other part of the plumage, but it is not injurious.

CAVING DUCKS (H. C. P.).—The account of these Ducks we extracted from one of the American journals. They could be obtained, we have no doubt, by application to a friend at Boston, or Chicago. We shall be obliged by being informed where they can be obtained.

BEE CEASED FROM WORKING (A Lady Bee-keeper).—The queen bee which accompanied your note was alive when she reached us. We warmed and fed her, and, when somewhat revived, introduced her to a queenless colony where she seemed well received, but was too far gone to recover, being cast out dead in about an hour. We then dissected her, and found her perfectly fertile. She was, in fact, a very fine queen, and we doubt not quite capable of keeping up the population of a strong colony. The nymphs contained in the five cells which were sent with the queen were those of workers.

CLEANING FLOOR-BOARD OF HIVE (G. W.).—If your bees are healthy and strong they have probably cleared out their hives ere this, and it would, therefore, now be useless to meddle with them. The floor-boards of weak stocks may, however, still be cleaned with advantage. The white specks on the floor near the hive's entrance you mention are probably the waxen covers of the honey cells which, during winter, have been gnawed off by the bees; or, if comb-building is going on, they may be newly secreted scales of wax, many of which are at such times dropped by the little artificers.

CREAM CHEESE (Kate).—Hang the quantity of cream to be made in a wet cloth in a cool place for six or seven days, which will depend upon the weather and the state of the cream. Put it into a mould lined with a cloth; put on the press with a light weight; turn it twice a day, and it will be fit for use in a short time. Roberts on "Wine Making" will suit you, and so will Ward's "World in its Workshops."

AQUARIUM REQUISITES (Julia M.).—Apply to Mr. King, Naturalist, Great Portland Street, London.

BREEDING PIED GOLDFINCH MULES (A Notice).—Pied Goldfinch Mules are bred from hen Calaries reared on purpose. They are bred from Pied birds, and in-and-in bred to make them break in colour. Instances are on record of Goldfinch Mules breeding, but they are so rare that they can only be regarded as the exception to the rule that Mules do not breed. Your food for young Bullfinches is good if you do not use much hempseed; rape would be better if well scalded, and washed to remove its pungency. I think the reason of their dying is apoplexy, they being too fat, owing to the egg and hempseed being too stimulating a diet. Death seems to occur after they have completed their plumage, when the drain on the system owing to growth and plumage-making is at an end. Bird organs may be purchased of most London dealers.—B. P. BRENT.

HAND-REARING YOUNG BLACKBIRDS AND THRUSHER (C. Sedgley).—Feed the nestlings on ground oats and sharps mixed with milk, and with a flattened stick feed them every two hours as long as they will open their mouths. Keep them very clean, and you will be rewarded by fine, large, healthy birds. Sharps, I think, is sold in London under the name of toppings or figdust.—B. P. B.

BOOKS TO AMERICA (J. P. Clark).—The bill of exchange was duly received, and the books sent as you desired to the Liverpool firm, on the 15th of February. There is no safer way of sending money than as you did.

POULTRY MARKET.—APRIL 30.

The supply is moderate, but the trade is unusually dull, and there is little demand.

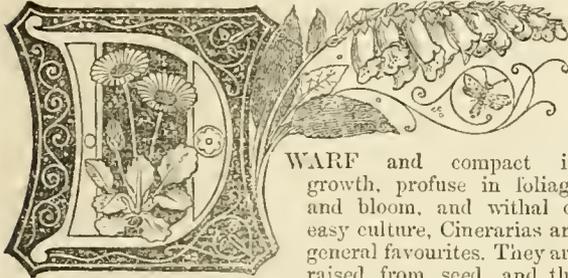
	s. d.	s. d.		s. d.	s. d.		
Large Fowls.....	4	0 to 4	6	Guloea Fowls.....	2	6 to 3	0
Smaller do.....	3	6	4	0	Partridges.....	0	0
Fowls.....	3	6	0	Hares.....	0	0	0
Chickens.....	2	6	3	0	Rabbits.....	1	4
Goslings.....	7	0	7	6	Wild do.....	0	8
Ducklings.....	3	6	4	0	Pigeons.....	0	8

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 8—14, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon. Sets.	Moon's Age.	Clock after Sun.	Day of Year.					
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	Days.	m.	a.			
8	TU	<i>Entaxia pungenis.</i>	61.4	39.2	50.3	16	22	af 4	31	af 7	18	1	47	11	23	3	42	128
9	W	<i>Euchilus obovatus.</i>	61.7	39.7	50.7	16	20	4	33	7	47	1	after.	24	3	45	129	
10	TH	ASCENSION. HOLY THURSDAY.	62.0	40.0	51.0	17	18	4	34	7	15	2	14	2	25	3	48	130
11	F	<i>Garloquia multiflora.</i>	62.2	40.8	51.5	17	16	4	36	7	43	2	31	3	26	3	50	131
12	S	<i>Gastrolobium spicosum.</i>	63.0	41.2	52.1	18	15	4	37	7	15	3	52	4	27	3	52	132
13	STW	SUNDAY AFTER ASCENSION.	63.9	38.9	51.4	18	13	4	39	7	45	3	12	6	28	3	53	133
14	M	<i>Gastrolobium obovatum.</i>	63.7	41.0	52.3	15	12	4	40	7	24	4	31	7	29	3	53	134

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 62.5°; and its night temperature 40.1°. The greatest heat was 81°, on the 12th, 1833; and the lowest cold 21°, on the 8th, 1855. The greatest fall of rain was 1.14 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

CINERARIA CULTURE.



LWARF and compact in growth, profuse in foliage and bloom, and withal of easy culture, Cinerarias are general favourites. They are raised from seed, and the

named sorts and desirable seedlings propagated by offsets.

FROM SEED.—Good seed, and saved from the finest flowers only, should be sown. Cheap seed is not worth sowing, let alone the trouble of rearing and growing the plants from it. For plants for autumn bloom the seed should be sown in the beginning of March in pans drained to one-third their depth with broken pots, some large pieces being placed over the holes, some smaller ones above them, and then half an inch or so of the siftings of the compost, which may consist of turfy loam two-thirds, and leaf mould one-third, adding one-sixth of silver sand. With this compost fill the pan to the rim; then take a flower-pot, and pat the surface of the pan gently with the bottom of the pot. This will lower the soil half an inch or so, and make the surface quite smooth. Now scatter the seeds thinly (half an inch apart) over the soil, just cover them with finely-sifted soil, give a gentle watering, and place the pans in a frame where there is a bottom heat of 70° and a top heat of from 55° to 60°. Keep the soil just moist, and immediately the plants appear place them within a foot of the glass, for they must not be allowed to become drawn. A gentle sprinkling of water from a fine-rosed watering-pot or syringe in the morning will generally keep the soil sufficiently moist; but whether that is the case or not the soil is never to be allowed to become thoroughly dry.

After the plants are up, and the rough leaves appear, give air whenever the weather is mild, and harden off gradually, so that they will bear potting when sufficiently large to handle. Pot them singly in three-inch pots, using the same compost as in sowing the seed; place them in a frame with a gentle heat, and keep close and shaded for a few days, sprinkling them overhead in the morning. Keep them thus until they begin to grow, then gradually harden them off, and place them in a cold frame with the pots set on coal ashes, or, whilst the plants are small, let the pots stand on those to be used at the next shift, so as to bring the plants nearer the glass. Give abundance of air, and draw down the lights whenever the weather is mild and showery, but keep them on during dry hot weather, and when heavy rains occur; then tilt the sashes, for abundance of air and light are the essentials to success. Never allow the plants to suffer from want of water, but keep the soil moist, yet let moisture be needed before it is given. Preserve a moist atmosphere by sprinkling water overhead morning and evening, and especially in the evenings of hot days.

Under the above treatment the plants will grow well, and must have a shift when the pots are full of roots, and before the latter become matted so as to resemble muslin. Shift the plants into 4½-inch pots, then into 6-inch pots, and when these become full of roots select the best plants, and place them in 8-inch pots. In all cases the drainage must be good, and consist of one large crock over the hole, two or three of good size above that, and then from half an inch to an inch of smaller ones, and over these again an inch or so of the rougher parts of the compost. The smaller plants may remain in 6-inch pots, and though not so large they will be none the less useful on that account. The compost to be preferred is that from turves cut 2 inches thick, and laid up in alternate layers with fresh cowdung from the fields, an inch of this between every layer of sods. This compost laid up for six months, then turned over, and again turned at the end of three months, will in three months more be fit to be chopped up with a spade, and placed under cover. When it is neither wet nor dry add to it one-fourth of leaf mould three-parts reduced, and one-sixth of silver sand; and this compost, well mixed together and incorporated, will grow Cinerarias to perfection. Chop up the compost with a spade, and break it as fine as you like with the hand, but no sifting is to be allowed. Pot firmly, but not very tightly. If the plants are to be well watered the soil should not be soddened with moisture, and if they are not to become pot-bound they must not be repotted until the pots they are in become filled with roots, nor should too large a shift be given.

After June use the lights only during windy and very wet or dry weather, and when kept on tilt them, at the same time elevating the frame on bricks laid flat at each corner. Thus the air will play all round the plants, and air, coolness, and moisture are their delight.

After the last potting, when the roots reach the sides of the pots, water once a-week with liquid manure, and when the plants show for bloom give a weak application twice a-week. Keep them in frames as long as possible, and then remove them to a light airy situation in a house having a temperature of 50°, and they will be fine when bloom is becoming scarce.

For the general spring bloom seeds should be sown from the middle of May to the end of June, the plants blooming early or late according to the time of sowing. If sown in May the pan should be placed in a gentle hotbed until the plants appear, and when hardened off these should be removed to a cold frame; but if not sown until an advanced period in June it will suffice if the pan be placed in a frame kept close. The above directions as to potting off and repotting the plants are equally applicable to these sowings; and though they are later, they will produce the finest plants. By October these will have splendid foliage, and if sown in May will be in their last pot but one—viz., a six-inch pot. So long as the weather continues mild they could not have a better situation than a cold frame; but mats or other material for covering must be in readiness to protect them on frosty nights. When they can no longer be kept in frames on account of the frost and damp, remove them to a cool house with a temperature of from 40°

to 45° from fire heat, and put them as far from the heating apparatus and as near the glass as possible, and where the air is admitted into the house. Air must be given whenever the weather is mild. If the plants are kept near the heated surface the air is too dry for them, and aphid is the consequence; if they are not near the glass they become drawn, and if they are not afforded enough of air they will mildew, damp-off, grow lank, and flag with the first gleam of sunshine.

By the middle of October the plants in six-inch pots which have filled these with roots should have their blooming pots, and this refers to the earliest sown. Eight-inch pots are a good size, and large enough for plants to bloom in, as these will, in February or March. Those in smaller pots should have a shift, say from 4½ to 6-inch pots, in October; in December they will need 8-inch pots, which they will fill by the end of January, and they may then have 10-inch pots, which are large enough. In this way they are to be grown on until they are placed in their blooming pots, and when these become full of roots liquid manure once or twice a-week is applied instead of affording another shift.

Seed may also be sown in August for late-blooming plants. From the time they make their appearance the seedlings are never allowed to stand still. They are potted off, repotted, and all the while kept growing slowly up to the time of blooming, and that is the grand secret in growing *Cinerarias*.

FROM OFFSETS OR SUCKERS.—When the plants have done blooming the flower-stems should be cut away to within an inch or two of the soil, and they should then be placed in a frame and fumigated with tobacco, as there is generally plenty of aphid. The frame being kept close and moist, suckers will be freely produced; when they appear give abundance of air until they are of a size fit for potting, then pot them directly into small pots, and keep them close and shaded until established, afterwards admit air, and treat them in the same manner as seedlings, only they will not grow so rapidly, and will never be so robust. The first suckers may be taken off in June, or early in July, and these, potted then in three-inch pots, will require a shift in six weeks, another shift six weeks later, and by October they will be in six-inch pots, and be ready for shifting into their blooming pots. These plants will flower early. For general spring-bloom, plants are obtained from suckers taken off in August from plants which after blooming were turned out into the open ground, in a moist, shady situation. Such suckers are to be potted and placed in a frame, kept close and moist until established, then hardened off, and the lights drawn off whenever the weather is mild, and kept over them tilted when it is very wet, or dry and hot. They must be potted on as they require it, and they will need a shift early in September, which should be into pots 4½ inches in diameter. If the lights over them are tilted day and night, the plants will grow strong and stocky, and will not be so apt to run as those exposed to all weathers. In the evening a sprinkling of water resembling a slight shower will do them good. Keep the soil moist, and do not allow them to stand too close together, allow room between each for light and air. Continue them in the frame until the nights become cold, and the air damp, then remove them to the lightest and most airy situation which the greenhouse affords; placing them on a shelf so as to be about a foot from the glass is best. This will be towards the end of October, and as the atmosphere of greenhouses is often much drier than that of frames and pits, a gentle bedewing of the foliage in the mornings of bright days will be of advantage; but unless the day be such that air can be given, it must be omitted.

If there is the convenience of a pit affording accommodation for the plants at 1 foot from the glass, and provided with means for air being given whenever the external temperature exceeds 35°, and having a hot-water pipe or two in front to keep the temperature from falling below 35°, and also to promote a circulation of air in dull, damp weather, that is the most suitable place of all for *Cinerarias*.

The plants should have a shift prior to being removed from the frames to the greenhouse, or if kept in pits, the second shift is to be given in the second week in October, always bearing in mind that they are not to be shifted into larger pots until those in which they are at the time are full of roots. The plants will run for flower, and as it is not desirable to have them all alike, the points may be taken out at the third joint, though some plants may be left unstopped, and will have all the flowers on a single stem. The stopping will induce side shoots, three or more, and as these grow the large leaves should be pegged down, so as to keep the centre of the plants clear, which will cause the shoots resulting from stopping to become

strong. Be careful not to over-water, and be very particular not to allow the plants to suffer from dryness, or the loss of the best leaves will be the consequence. When the shoots have made four joints peg them down, and take out their points above the fourth leaf of the last growth; by this time they will require eight-inch pots, and that will be early in January. The plants will now grow rapidly, and if the shoots still come strong and make three joints without flower showing in the axils of the leaves, and the pots are full of roots, shift into 11-inch pots, pegging down the shoots towards the sides of the pot, but not so as to break them, and take out their points at the third joint.

If the plants are required to be grown in eight-inch pots, and if the shoots produced are still strong, and do not show for bloom, they may be stopped at the third joint, pegging or tying them down as in the case of those potted into larger pots, and water once a-week with weak liquid manure. Should the plants show for bloom, the shoots must not be stopped, but be tied out to neat deal stakes painted green, and remember that the shoots must not be huddled together or two tied to one stake, but so distribute the stakes that every stem shall be so far from its neighbour as to allow of each displaying its head of bloom; and aim at a close, flat head, and yet not so close as to have some flowers hiding more than those seen. Allow room enough, so that the plants may have light and air on every side, and turn them round frequently, if inclined to become lop-sided, for nothing is more ugly in a *Cineraria*. The plants stopped should be staked out, stopping ought to be discontinued, and regulating and tying out the shoots must be attended to frequently.

When the pots become full of roots, water once a-week with liquid manure, and as the plants advance for blooming it may be given at every alternate watering, until the flowers have for the most part fully expanded, when water only is best. Towards blooming a slight shade from bright sun is advantageous, and the beauty of the plants when in bloom will be much prolonged if the roof be shaded from sun by a covering of tiffany; they should also be well attended to as regards watering.

Suckers taken off in September will make small plants for blooming in April, and larger ones may be obtained by stopping them up to March, and shifting them in the first week of that month into their blooming pots. The latter will bloom in May and June. The temperature for growing plants should never exceed 45° from fire heat, and to grow them slowly it should be from 40° to 45°. They will sustain no injury in a temperature as low as 35°. For plants coming into flower a temperature of 50°, and not exceeding 55° from fire heat, is essential. Air, whenever the external air will permit of its being given, cannot be too liberally afforded, nor can they be kept too cool if only protected from frost. If allowed to become pot-bound they start for bloom, and then specimens cannot be expected. Moisture with air they flourish in; but a moist stagnant atmosphere brings mildew and aphid, and a dry atmosphere, even with air, causes the leaves to curl through the attacks of aphides; and if dry from fire heat thrips appear on the scene. If the plants suffer from want of water the foliage becomes miserably poor.

INSECTS.—Green fly is the most troublesome. The house, pit, or frame should be smoked with tobacco whenever an insect is seen, taking care to let the smoke reach the plants cool, and to have their foliage dry. It is a good plan to fumigate every fortnight by way of precaution, and even if this be done once a-week it will not be labour in vain. Should the plants become much infested, smoke on two consecutive evenings, and syringe the plants in the morning forcibly, but not so as to break the leaves, laying the pots on their sides and then turning the plants so as to give a thorough cleansing. Thrips are to be dealt with in the same manner.

Black fly is frequently a most troublesome pest on young plants. Use the following wash:—A pound of soft soap and a quarter of a pound of tobacco placed in a gallon of boiling water, stirred until the soft soap dissolves, and then covered over and allowed to stand until cool, when it is to be strained, adding five gallons of soft water. In this the plants are to be immersed with their heads downwards. It is an excellent wash for young plants infested with this pest, thrips, or green fly, and drawing the suckers through the mixture prior to potting frees them of these pests. It must not be used for plants showing for bloom.

Snails and slugs make great havoc among the seedlings and offsets; the succulent leaves of the *Cineraria* they always like. Lay fresh Cabbage leaves near the plants at night, and on examining them in the morning on the under side of the leaves

some will be found. Search for the marauders at night with a lantern, or sprinkle a little dry soot around the insides of the frames, around the plants, and on the surface of the pots or pans.

MILDEW is too well known to Cineraria-growers. Dust the infected parts with sulphur vivum, and wash off in a few days.—G. ABBEY.

NEW PLANTS

AS SEEN AT MR. W. BULL'S, CHELSEA.

ABOUT two years ago I visited this new well-known establishment, and endeavoured to describe the large collection of novelties that were then to be found there; and now again "the cry is still, They come." From all parts of the world, and from all departments of the vegetable kingdom, if not "from the Cedar of Lebanon to the Hyssop that groweth on the wall," at any rate from the magnificent Palm to the tiny Lycopod, are contributions levied to satisfy the ever-increasing cry for new things. Wherever anything good is to be obtained Mr. Bull is sure to have arms long enough to reach it, and the result is seen in the constant change of novelties that his houses display.

Of those which I spoke of last year I am glad to find that a large number have established the reputation that was then predicted for them; and of those which I have now seen I am sure that many will be found as great favourites as their predecessors. Let not any one imagine that it is only the owner of some large establishment who need apply here, for while there are denizens of the stove and Orchid-house, the lovers of Ferns whether British or exotic will find something to gratify their taste; the "bedder-out" may see some of the very best strains of Geraniums in existence; the exhibitor will find Verbenas which will help his stands; and the lover of herbaceous plants may add to his stock of gems. The difficulty is really where to begin, and how to obtain a supply of adjectives which shall be adequate for the demand made on them. However, to the Palm's must, I suppose, be accorded the first place, especially as the taste for their cultivation seems to be rising in England. Foremost amongst these was *Verschaffeltia splendida*, a beautiful feathery-looking Palm, with the stem completely covered with thickset and sharp spines. Equally good is the plant now popularly known as the Thief Palm, a name which I should think had better be dropped, its true name being *Phœnicophorum sechellarum*. Here I would also mention among Cycads *Zamia cycadifolia* from Port Natal. Here, too, is the true *Lantana rubra* or Bourbon Palm, the one ordinarily sold as such being *Comersonii* (?), very handsome; and *Cycas plumosa*, very feathery and beautiful.

Of the now very popular family of Maranta, a good example was *Maranta splendida*, from Para, which has been already exhibited and obtained a first-class certificate: it has light green foliage banded with darker green. Amongst Orchids was *Schistocasia Portei* from the Philippines. *Amorphophallus nebilis*, from Java, was a remarkable-looking plant, with stems 4½ inches in circumference. Of those plants remarkable for their variegated foliage the greatest gems were *Bertolonia margaritacea*, a name thoroughly well deserved, for the leaves look as if dotted over with pearls; and *Eranthemum argyreum*, similar in its habit of growth to *Gymnostachyum Verschaffeltii*, but entirely different in colour, which is a very bright lively green, and the nerves of a beautiful silvery white. This has been obtained from the High Amazons, and the entire stock of it is in Mr. Bull's hands. *Peperomia argyrea* has a large ovate leaf beautifully marked with spiral bands, while *Dioscorea amœtochilus* is now well known. Its large leaves, 8 inches in length by 4½ in diameter, are produced first quite green, but gradually change to a bright olive and gold, very similar to some of those little beauties from whence its specific name is derived. *Bignonia argyrea violascens* has been so frequently exhibited lately by Mr. Bull that it ought now to be well known. It may suffice to say that it fully maintains its character for its beautiful soft colouring; and a variety of *Tradescantia*, white and green, will form a nice contrast to *zebrina*, so well seen and so much used in baskets. There was also *Ananassa Porteana*, from the Philippines, variegated olive, green, and white.

To remarkable-odd plants there were also some fine additions, such as *Pandanus latissimus*, a rare plant, with the broadest foliage known in this family, and *Pandanus Porteanus* from the Philippines. There was likewise from Madagascar a

very pretty plant, like *Pavetta borbonica*, but trifoliate. There was also to be seen *Cassignia borbonica*, not a new but a rare plant, with orange midribs and cinnamon-coloured stem, exceedingly handsome. Amongst curious-foliaged plants were some remarkable productions:—*Nidularia Pinellii*, with its inflorescence almost like a nest settled down in the heart of the plant, and *Coccoloba pubescens*, with a most curious character of foliage. The leaves are 32 inches by 28, slightly pubescent, and are produced apparently one above the other, giving, doubtless, to the plant naturally a most curious appearance; not more singular, however, than *Pitcairnia tabulariformis*, a plant about 16 inches across and as flat as a table, from the centre of which rises a spike of orange-coloured flowers. Amongst Orchids was a variegated-leaved variety of *Phajus grandifolius*, and *Vanilla phalenopsis*, very remarkable for its flowers.

In plants that come more within the reach of everybody Mr. Bull has a varied assortment of novelties, in Verbenas, Fuchsias, Pelargoniums, and Petunias. Many of these I have seen, and about their value there can be little doubt. His new Lobelias, for instance, open out quite a new field, and we cannot do better than quote the opinion of a contemporary, which says, "We hail these as great acquisitions; for the Lobelia is one of the good old summer flowers which have been elbowed out of the garden by the bedding system, though few subjects are more brilliant than it under good management." The colours of these new seedlings comprise many quite new, such as pink, carmine, and ruby; and we certainly see no reason why we should not have as great varieties in this flower as have rewarded the labour and skill of the hybridiser in other departments of floriculture. When the Italian Verbenas were introduced, poor as they doubtless were, I hailed their advent as being, I hoped, the precursors of a new race, and these anticipations have soon been realised. Mr. Bull has this season several, which I look upon as a great improvement on any that have been as yet sent out. They will not from their very character be of much service for the garden, but will be very pretty for pot culture and for the exhibition table, where their contrasts will be much valued. His double Mimuli are too well known now to need any comment. Their value is greatly increased by the lengthened duration of their blooms, the single Mimulus lasting only a very short time; whereas the calyx of these, equally ornamental as the flower, remains on for a long period.

I have more than once alluded to the superior strain of bedding Pelargoniums which Mr. Bull has possession of, some of those of last season being wonderfully fine in colour, and the individual flowers very large. He has this year again eight new varieties to send out, among which Edith, Cherbun, Peach Blossom, and Speaker are spoken of as being very fine. Of Hybrid Nosegay varieties he has also a selection; and having chosen Clipper as one parent and Stella as the other, he has obtained for those who admire this class some telling novelties.

Fern-lovers are so numerous that acquisitions to this tribe are sure to be of interest, but where they are to stop one hardly knows. Thus, for example, from a crested form of *Nephrodium molle*, the spores of which Mr. Bull saved in the hope of obtaining the same variety, he found that when once the divergence begins there is no knowing how far it may go; for a number of varieties have been produced, some of which have been named, as *ramosissimum*, *grandiceps*, *ramosum cristatum*. *Athyrium Filix-fœmina* contributes a very beautiful variety called *sagittatum*, with very sharp arrow-shaped fronds, somewhat in the style of *Fieldia*. *Polystichum angulare grandiceps* is a fine form of that well-known species; while amongst exotic Ferns, both tree and herbaceous, are many fine sorts.

It is well known that Mr. Bull has a large collection of officinal and medicinal plants. Here may be seen the various spices, such as Pepper, Allspice, Ginger, Cinnamon, and Clove; the fruits of the tropics, the delicious Mangosteen, the Loquat, the Mango, and the Date; the plants from which castor oil, ipecacuanha, sarsaparilla, and all such "nasties" are obtained; the plants or shrubs that produce our beverages, tea, coffee, chocolate, &c.; those in which ladies, and even men, like Hoispur's fop, "perfumed like a milliner," delight as scents—that queer "opopanax," whose letters puzzled the town last winter, and patchouli, suggestive always of a dread of soap and water in those who use it;—in fact plants (many of them small, doubtless), whose interest is derived not from their extreme beauty but from the uses to which they are put.

Some people say you never can be tired of a good thing. Well, I honestly confess, great as is my love of flowers and

plants, I do become tired when, one after another, novelties are produced, and their beauties are to be recognised; and as I began this tour through Mr. Bull's houses at six o'clock in the morning, I can safely say I was ready for my breakfast when the time came. Many of the things which I have noted will be brought before the public ere long, and I shall not be surprised to find them much appreciated. All praise is due to those who, like Mr. Bull, Messrs. Veitch, and others, spare no expense in introducing new plants—doubtless with an eye to their own advantage, but I believe in many cases out of a sincere love for the objects of their care.—D., *Deal*.

THE PINE APPLE.

AND MR. THOMSON'S TREATISE ON ITS CULTIVATION.

If we look into the history of most of our fruits in the cultivation of which success depends more upon management than on natural advantages, we shall find that from time to time revolutionary changes have taken place in their treatment. The wisdom of some of these wide deviations from the beaten track was usually more or less questioned at the time, but when confirmed by success they soon became the general practice. The advent of Keens' Seedling amongst Strawberries was a great stride in the right direction, and that variety has retained its position up to the present day—not but that there are some even older varieties, as the Old Pine, Hautbois, and others still deserving a place; still none of the period to which I refer has enjoyed so long and well-sustained a reputation. Gooseberries, too, had their period of change, and the first quarter of the present century saw the weight of their berries advance from half an ounce or so to nearly four times that weight. This result, however, was effected more gradually than in the case of Keens' Seedling Strawberry, which might be regarded more as a lucky hit; for careful cultivation and selection from innumerable seedlings were the means by which the size of the Gooseberry was so much increased. Other fruits have likewise had their period of improvement—the golden age in their history. Now and then, it is true, there are misgivings about the wisdom of discarding some old favourites, still it is questionable whether the favourite Apples of 1806, even if produced in the condition they were in at that time, would not have to succumb to some of the later introductions.

Taking for granted the improvement effected in the Gooseberry and Strawberry during the last fifty years, the question is, Have other fruits advanced in an equal degree? With most of them some progress has doubtless been made, and especially in the management of the Pine Apple; but there is at least one other fruit which can hardly be said to have undergone any improvement during that period; on the contrary, we may ask ourselves the serious question if it has not retrograded, and the Peach certainly was grown to as great perfection thirty or forty years ago as now, and with much less trouble, whilst the crop was abundant. Why this should be so is a very grave question deserving of special inquiry; but as it is my object at present to direct attention to another fruit, I will proceed at once to that subject.

It is nearly two centuries since the Pine Apple was first introduced into our gardens. Doubtless its extension at that period would be very slow, for apart from the non-existence of those facilities of transit which now bring almost all parts of the United Kingdom within thirty hours' travel of each other, there was in early times a feeling of selfish pride in one person possessing what his neighbour did not. It is not necessary, however, to trace the early history of the Pine Apple; suffice it to say that the number of places where it was grown at the beginning of the present century was not great; but since then, the increase of wealth, and a more widely-diffused taste for horticulture, have tended to encourage the cultivation of plants and fruits out of the common way, and the Pine Apple amongst others received its share of attention. Each county could boast of a place where the Pine Apple was said to be well managed, and the young man who had the good fortune to serve his time at that place was considered to possess advantages over his fellows. By degrees, however, the culture of this fruit became extended, and the more general diffusion of garden literature enabled most people to comprehend that, after all, no secret was involved in the matter, and that no extraordinary management was necessary to attain a moderate degree of success; but that the whole affair was one of the pocket, coupled, of course, with some cultural details not difficult to understand. The expensive items being fuel and glass, re-

course was had to fermenting material as a substitute for the former, the space to be heated being at the same time limited as much as possible, and it was found that the plant rather liked this than otherwise. These modes of growing the fruit date much further back than my experience extends, but forty years ago some very good Pines were grown in England, and in a manner that is still pursued at many places at the present day.

So popular a fruit as the Pine Apple would not, of course, be cultivated in a few places without strange stories going forth as to the means used to secure success, and suspicions were entertained that beyond what was stated to the general public something of importance was withheld which the outer world were not to be made acquainted with. To help this delusion, marvellous results were now and then said to follow certain modes of treatment. Plants were said to have ripened fruit that individually weighed more when cut in the ordinary way with 3 inches of stalk than the whole of the rest of the plant, as well as the pot and soil in which it was grown. Some extraordinary results have doubtless been accomplished, but the dealers in the marvellous had their day, and horticultural exhibitions tended to dissipate false notions about these and other matters; for at such exhibitions it frequently happened that the produce of a place noted for a lifetime for its Pines was eclipsed by fruit grown by an exhibitor never before heard of. A good Pine Apple, however, continued to be regarded as the monarch of fruits, and was thought a fitting present to the highest in the land, and it is said that one of a family of note was knighted for some splendid fruit of this kind presented to the reigning prince at a particular time. The last thirty years, however, have witnessed the greatest advance in the culture of this fruit, and from being an object of curiosity rarely seen by the multitude, fruit imported from abroad are hawked about the streets, and sold at a halfpenny a-slice, and some of them are not to be despised for flavour and size. Before, however, such fruit had found its way into this country, some changes had come over the management of the Pine Apple in our own stoves, and resulted in its cultivation being more fully understood.

The impetus given to the erection of glass structures by the removal of the duty cannot fairly be said to have been of so much advantage to Pine cultivators as to those engaged in some other branches of gardening, and some of the great advances made in the cultivation of the Pine Apple took place before that period. Supplying bottom heat by means of hot water had been successfully carried out, and the steady heat afforded to the roots by that mode of communicating warmth led to the use of pots being altogether abandoned, the plants being merely planted in the bed which was heated from below, and great and manifold were said to be the advantages of this plan. By-and-by, however, it was found to have disadvantages, and recourse was had to pots again; but hot water was still used as the medium for supplying bottom heat. Some other innovations in Pine-growing were tried, and I believe a Providence Pine upwards of 13 lbs. in weight was grown without the use of fire heat in any way.

Soils, too, began to attract attention, and as is common in such matters, people went to great extremes. At one time some pinned their faith to charcoal, while another urged brick-dust as being as good as half-burnt wood, and great advantages were said to be derived from peat. This was strongly recommended in consequence of such extraordinary results attending its use in France, where it was stated fruit exceeding in weight any that had ever been grown in England were produced by the use of this material. The reign of peat, however, was not a long one, neither was it successful to any great extent, and growers had again to fall back on their own resources, and to adopt for themselves such substances as best suited their particular cases. In the latter view of the matter they were materially assisted by an excellent paper contributed by Mr. Barnes to one of the last numbers of London's "Gardener's Magazine," which was backed by some remarkable fruit obtained by the means he advocated. On the subject of soils, Mr. Barnes startled many who thought that mixtures of some half a dozen materials carefully and accurately compounded were absolutely necessary to anything like success, while the substance which he used for potting his plants was obtained from some moorland of very indifferent character. Mr. Barnes affirmed at the time, that land that would grow good Wheat would produce good Pine Apples; and certainly some very fine Queen Pines were sent by him to the metropolitan shows upwards of twenty years ago. This, as well as the other results above recorded, all happened prior to the cheapening of glass

structures by the removal of the duty. After the latter epoch, however, the number of Pine-houses and Pine-pits was much increased, and all the old and new modes of culture were in requisition, and fresh attempts were made in order to discover a more rapid and easy way of obtaining this fruit in perfection. Mr. Hamilton, in Lancashire, advocated the planting-out system, with closely confined pits, and a greater amount of heat than had hitherto been afforded. The planting-out system was also adopted at Trentham with good results. The number of places where Pines were grown increased rapidly, and certain districts appearing to have a decided partiality to particular varieties. In the neighbourhood of Manchester, where excellent Pines, and Grapes too, are grown, the Black Jamaica, or Montserrat, as it is there called, is the prevailing fruit. Queens certainly predominate near London, while our neighbours across the Tweed seem to give the preference to the Smooth-leaved Cayenne. The large Pines, as Providence, Charlotte Rothschild, and Enville, seem to gather in greater strength in the central and northern counties than elsewhere; but they are yearly giving way to the kinds before mentioned, and others of like quality at table, size having ceased to be regarded as a point of merit, unless other good properties accompany it.

The above outline of the cultural history of the Pine Apple, which the reader may, perhaps, complain of as being long and tedious, was intended as a preface to some notes which I purpose to make on a treatise on the cultivation of this fruit by Mr. David Thomson, of Archerfield, whom the readers of this Journal will remember as being one of the most able writers in its pages, and from whose pen occasional articles still appear. Of the merit of the work as a literary production I must leave abler critics to give an opinion, but as a work conveying a clear idea of the mode of culture adopted at Archerfield, and the results there attained, the testimony of an eye-witness may, perhaps, not be regarded intrusive by the author, nor mistaken by the public as being akin to puffing, for it will be perceived that something has, in my opinion, been omitted. Do not, however, let my saying this prevent the reader ordering the work at once, for I can affirm that it fully and faithfully reflects the practice of one of the best Pine-growers in the United Kingdom. More than this need not be said, and had I not seen the garden at Archerfield I would not have said this much. However, as generalities are useless without details, I propose in my next article to take the little work in hand, and commencing at the beginning, follow the author through such portions of it as may appear necessary.—J. ROBINSON.

(To be continued.)

ROYAL HORTICULTURAL SOCIETY.

MAY 1ST.

FLORAL COMMITTEE.—Mr. Cox, gardener to W. Wells, Esq., Redleaf, brought out flowers of a seedling Camellia, a light rose colour; also, *Rhododendron Aucklandii*, and two kinds of *Magnolia*. Messrs. Veitch exhibited a new *Lycaste* with strong foliage and a large dull yellow and green flower; also, a collection of plants, consisting of *Rhododendrons*, *Azaleas*, &c., for which a special certificate was awarded. Mr. Turner, Slough, sent a very large and beautiful collection of *Auriculas*, affording good examples of this old favourite in its various forms of green, grey, and white-edged flowers; also many beautiful selfs or one-coloured flowers, and a beautiful collection of *Alpines* in every shade of colour. Never was such a group of *Auriculas* seen before; they were most deservedly the admiration of all who saw them, and well merited the Lindley medal which the Committee awarded them. Two of the seedling *Alpines*, *Defiance*, a dark-shaded violet flower; and *Victorious*, a bright-shaded chocolate with conspicuous yellow centre, received first-class certificates. Mr. James Hedges, Birmingham, sent out flowers of *Cattleya amethystina* and *Rhododendron lancifolium*, a delicate rose-coloured flower. A very nice collection of stove plants was sent up from Chiswick, and a special certificate was awarded for them; also, a collection of *Orchids* from the stoves at South Kensington. A first-class certificate was awarded to *Psychotria macrocephala*, a beautiful plant exhibited by Mr. Ball at the previous meeting, some doubts being then expressed as to its having received an award.

FRUIT COMMITTEE.—Mr. Tillery, gardener to the Duke of Portland, Welbeck, sent Lady Downe's Grapes, damaged on the journey, but very good in flavour; and from W. Burrell, Esq., Ockenden House, Cockfield, came two kinds of Apples, the names of which were not determined. Richmond Late White Broccoli, a large-headed kind, was shown by Mr. Turner, of Slough.

FORTNIGHTLY MEETING.—W. Wilson Saunders, Esq., F.R.S., in the chair. The awards having been reported, and nineteen new

Fellows elected, the Rev. M. J. Berkeley offered some remarks. The first subject touched upon was *Psychotria macrocephala* exhibited at the last meeting by Mr. Bull, and respecting which some doubts had been entertained as to whether it was really a new species of *Psychotria* or not; but Mr. Berkeley stated that he had been to Kew herbarium, and without venturing to say that he had compared it closely with some 170 species of *Psychotria* and twenty or thirty of *Rudaea* which he there found, he had great reason to believe it to be quite distinct. *Rhododendron Princess Alice*, from Messrs. Veitch & Sons, and another *Rhododendron*, unnamed, from Mr. Cox, of Redleaf, were then adverted to, the former as a hybrid between *R. eiliatum* and *Edgworthii*, and the latter as probably a form of *R. cinereum*, Mr. Cox had also sent two forms of *Magnolia conspicua*, one out from a tree covered with an extraordinary profusion of flowers, as well as an interesting collection showing the fructification of various *Conifers*. *Rubus Girceodiana*, which was exhibited among the plants from the Society's garden, then came under notice, and it was stated to have been received from Berlin, but in the absence of flowers it was impossible to know whether it was a *Rubus* or not. It appeared, however, to be new. Two beautiful *Gordis*, both grown in the Botanic Garden at Hyères, next occupied attention. That named *Lagenaria sphaerica* came from Natal, and had been exhibited before; but the other, *L. Monteiroi* (Naudin), which was a native of the west coast of Africa had, Mr. Berkeley believed, never before been seen in this country. There was, in addition, a fungus sent by Mr. W. G. Smith, which was evidently a *Morcl*, but apparently different from the ordinary one. Disease in Peach trees was the next subject to which attention was directed. This had been very prevalent, and on examining shoots which had been submitted to his inspection, he found that it had commenced in the terminal bud, and that the wood below it exhibited a number of little cavities. In the case of some trees in the Isle of Wight, the roots were found to be covered with little knots, and these were studded all over with facets from which adventitious roots would have been emitted under conditions favourable to their development. Those who had visited Chatsworth had no doubt admired an enormous Peach tree growing in a house at that place, and which was remarkable for the size and beauty of the fruit which it produced, but it, too, had fallen into bad health, as well as some other trees at the same place. The Duke of Devonshire applied to the Society to send some one to examine these trees, and Mr. R. Thompson went down to Chatsworth and made a valuable report on the condition of the trees. There was nothing apparently wrong in the management, but on examining the roots he thought that the bad condition of the trees must have been caused by some fungus. Shoots and roots were, therefore, submitted to Mr. Berkeley, and he found in every case, even when to all outward appearance sound, indications of incipient decay, and cells containing mycelium. The soil of which the border was made contained a large proportion of fibre and vegetable matter, such as was likely to favour the development of the spawn of fungi, and it was in a peculiarly solid and sodden condition. On mentioning the subject to Dr. Hogg he said that he recollected the trees being in the same condition some years ago, but on the soil being removed and the trees root-pruned, they again pushed vigorously. Some gardeners, Mr. Berkeley remarked in continuation, are in the habit of using forcing manures, but it is a dangerous practice, which, though it may cause increased production for one or two years, is often the cause of lasting injury; and he further recommended especial caution in employing those of which the composition is not known.

Mr. Saunders said that, before calling upon Mr. Bateman for his remarks on the *Orchids*, he wished to direct attention to a little *Radish* which by some extraordinary freak of nature had tied itself into a knot. This he ascribed to the tap-root having come in contact with some hard curved surface in the soil.

Mr. Bateman said, that before proceeding with his observations he had a grievance to complain of, which he hoped would be made public. On several occasions plants had been dispatched from the country to the Society's meetings, but had not arrived in time. Taught by experience, ample time had been allowed for the journey—as much as was consistent with the plants arriving in good condition, but whether their delivery was left to the railway companies, or special messengers were sent after them to the terminus, the result had been the same; and, as an instance, it was not necessary to go further back than the last meeting, when *Dendrobium MacCartiae* did not arrive, though dispatched in good time. He hoped, therefore, that something would be done to redress this great grievance. The first subject to which he would allude was a remarkable Pear tree growing in the vicarage gardens at Holme Lacy, and the seat of Sir E. Scudamore Stanhope, Bart., and of which he had received a photograph. The tree formerly covered nearly an acre of ground, but much of it had been cut down from time to time, owing to its too closely surrounding the mansion. From fourteen to sixteen hogsheds of perry, of one hundred gallons each, had been made from its produce in some years. Mr. Bateman expressed a hope that the example of sending photographs of remarkable trees would be followed by others. With regard to the *Orchids*, the show was rather meagre, owing to the weather being so cold as to make those having valuable plants afraid to venture them from home. There were some, however, well deserving of notice, and among such was a fine specimen of *Cattleya amethystina*, which was only a variety, but a beautiful one, of the old *C. intermedia*; also, *Lycaste Harrisonia*, one of our oldest *Orchids*, of which a magnificent specimen

came from the Society's garden. The next subject to which he would refer was an Epidendrum of peculiar interest. Last year when lecturing on Dendrobium, he referred to a map showing the distribution of Orchids over the world, and he would again revert to it, in order to point out that in each continent a certain genus prevailed. Thus in Africa it was *Angraecum*; in Asia, *Dendrobium*; in America, *Epidendrum*. Between the last two genera no great difference existed as regards the number of their species. Last year there were somewhat more than two hundred species of *Dendrobium*, and about the same number of *Epidendrum*, and in the present year it would be difficult to say which genus had the lead. Although thus on an equality as regards numbers, there was a wide difference in point of beauty, for while a large proportion of the *Dendrobium* had found their way into cultivation, not more than half a dozen *Epidendrum* were considered worth growing. In the genus *Dendrobium*, ugliness was the exception, and beauty the rule; whilst with *Epidendrum* the case was just reversed. Of the latter, however, several fine species had yet to be introduced, and among such until lately was *E. erubescens*. A coloured plate of it which in no way exaggerated its beauty had been made by Miss Drake, for his work on the "Orchidaceae of Mexico and Guatemala," and this was exhibited to the meeting. The *Epidendrum* in question was thought to belong to the section of the genus having leafy stems, and collectors were, therefore, instructed to look for such a plant, but their researches proved fruitless, for the flowers are in reality produced from the pseudo-bulbs, a fact which was only discovered the other day by Mr. Skinner, at a sale at Stevens's. It happened that on that occasion several new species of *Epidendrum* were put up for sale, and accompanying one of these was a dried flower which Mr. Skinner recognised as being like that of *erubescens*. He accordingly purchased half a dozen plants for 21s., although had the fact been known that they were the long-sought-for *E. erubescens* they would have brought many pounds.

Mr. Skinner here observed, that another importation from the same collector was on its way to this country.

Mr. Bateman having remarked that cool treatment would probably be the most suitable for this *Epidendrum*, passed on to his special subject, *Dendrobium MacCarthiae*, of which a plant with a single flower was shown by his gardener, Mr. Sherratt. This beautiful species had been described about ten years ago in the "Botanical Magazine," where it was stated to grow pendulous from the trunks of large trees in the forests about Ratnapoora, and towards Galle, in Ceylon, where it was pretty generally known to the natives as the Rainy-month flower. Its purple and white flowers are produced to the number of four or five, in racemes 1 foot or 1½ foot long, during the rainy season, hence its native name. It might serve as an encouragement to plant collectors to state, that after all the island was thought to have been ransacked this beautiful species was discovered. Mr. Bateman then remarked that the annual rainfall in Ceylon averaged 120 inches, and four-fifths of that amount fell between November and May. It would, however, be interesting to know what was the climate of the particular district of the coast where the plant is found.

MAY SHOW.—The first principal Show for the season was held on the 3rd inst., and was well attended by exhibitors notwithstanding the cold and unfavourable character of the early part of the day, which no doubt served to deter many from risking their valuable Orchids and other tender plants from home. The afternoon, however, was tolerably fine, and there was a numerous and fashionable company to witness what was altogether a very gay display of flowering plants, prominent among which were Orchids, remarkably fine Azaleas and Roses, and for the season very good Pelargoniums.

STOVE AND GREENHOUSE PLANTS.—Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, contributed an excellent collection, consisting of *Medinilla magnifica*, with fifteen fine spikes of bloom; a fine specimen of *Stephanotis floribunda*, which when more fully in bloom will be very beautiful; *Vinca oculata*; a fine plant of *Eriostemon linearifolium*; *Azalea purpurea*, and *Hedera tulipifera*. From Messrs. Lee, of Hammersmith, came a fine plant of the last-mentioned, measuring about 1 foot through in every direction, and with its numerous pendulous blooms very bright in colour; *Fraxinea confertiflora*; *Epacris grandiflora rubra*; a good plant of *Erica ventricosa coccinea minor*; *Hibbertia Reddii*, and *Bougainvillea glabra* trained as a balloon-shaped specimen, and in that form having a very good appearance as an exhibition plant. In a miscellaneous collection from the same firm were *Adenandra fragrans*, not yet in perfection; the beautiful *Clerodendron Thomsoni*; *Chorozeas*, *Hedera fuchsoides*, a *Stephanotis*, two or three *Heaths*, *Azaleas*, *Camellias*, and a white-flowered *Epacris* from New Zealand. Messrs. Cuthash also exhibited a collection of small plants, among which was a number of dwarf standard Azaleas in good bloom, *Heaths*, *Eriostemons*, *Boronia*s, *Aphelaxis*, and *Chorozeas*.

Awards—First, Mr. Donald. Second, Messrs. Lee.

ORCHIDS constituted one of the principal features of the Show, but were not so numerous as would have been the case had the weather been finer. They made, nevertheless, a very good display. The only collection of twelve put up for competition in the Nurserymen's class came from Messrs. Lee, and included *Phalaenopsis amabilis* and *grandiflora*, *Cattleya Skinneri* and *amoethystina*, *Aerides roseum*, *Saccolabium guttatum* and *ampullaceum*, *Cypripedium barbatum* and its variety *superbum*, *Oncidium roseum*, and *Dendrobium nobile*.

Mr. Ball also exhibited a collection of twelve, in which were a *Phajus* with six spikes of bloom, *Cypripedium Hookeri* and *villosum*, and a *Lycaste* unnamed; but as the rules with regard to entries had not been complied with, it was excluded from competition. In the class for nine several good groups were shown. That from Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, consisted of two varieties of *Cattleya Skinneri*, *Cypripedium Lowii* and *villosum*, *Vanda suavis*, *Phalaenopsis grandiflora* with two remarkably fine spikes of bloom, *Oncidium sarcodeum*, very handsome; *Dendrobium albo-sanguineum*, and *Trichopilia crispata*. From Mr. Page, gardener to W. Leaf, Esq., came *Vanda tricolor* and *insignis*, *Phalaenopsis*, *Cypripedium barbatum*, a *Lycaste*, supposed to be a variety of *Lawrenceana*, *Aerides virens*, *Dendrobium tortile roseum*, and *Oncidium ampliatum majas*, the last one of the most effective Orchids in the Show, having two fine spikes bearing numerous flowers. Mr. Hill, gardener to R. Haubary, Esq., The Poles, Ware, also contributed some fine specimens, especially two large *Vandas*, being Rollisson's and Veitch's varieties of *Vanda suavis*, some excellent *Dendrobiums* and *Cattleyas*, *Phajus grandifolius* with ten fine spikes, and *Chysis Limminghii* in fine condition. Mr. Robson, gardener to G. Cooper, Esq., Coburg Road, had also a well-grown example of *Phajus grandifolius* with nine spikes; *Phalaenopsis Schilleriana* with a fine spike; *P. Luddemanniana* bearing two blooms, the older *P. amabilis* and *grandiflora*; *Vanda tricolor*, *Trichopilia tortilis*, and *Cattleya Mossiae*. Mr. Howard gardener to J. Brande, Esq., Balham, sent a collection of six, among which there were a fine specimen of *Cattleya intermedia*, *Dendrobium pulchellum*, forming a pretty mass of pinkish lilac and orange blossoms, and several others of the same extensive and ornamental genus. In the class for single specimens *Dendrobium Farmeri* with eight fine spikes, and *Lycaste Skinneri* with upwards of a score of blooms, the one from Mr. Howard, the other from Mr. Penny, received equal first prizes.

Awards—For twelve: second, Messrs. Lee. For nine: first, Mr. Penny; second, Mr. Page; third, Mr. Hill; extra, Mr. Robson. For six: first, Mr. Howard; second, Mr. Robson. For single specimens: Equal first, Mr. Penny and Mr. Howard.

AZALEAS.—Mr. Turner again produced magnificent pyramidal plants, ranging in height from 5 to 6 feet, some perhaps more. The varieties were Holfordii dazzling in colour, Gem, Louise Margottin, Perryana, Petuniaeflora, Coronata, Mary, Madame Mieliez, and Empress Eugénie. Mr. Carson, gardener to W. R. G. Farmer, Esq., had also half a dozen fine specimens, consisting of Duke of Devonshire, Stanleiana, Optima, Lateritia, Sir Charles Napier, and Holfordii. Half a dozen good plants were shown by Mr. Penny, and a like number by Mr. Young, gardener to R. Barclay Esq. Single specimens consisted of a fine plant of *Iveryana* from Mr. Turner, a very large example of *Rabra plena* in excellent bloom from Mr. Carson, and *Macrautha purpurea* from Mr. Young.

Awards—For nine: first, Mr. Turner. For six: first, Mr. Carson; second, Mr. Penny. For a single specimen: first, Mr. Turner; second, Mr. Carson; third, Mr. Young.

PELARGONIUMS.—There was a gay bank of these, although the majority of the plants did not exhibit that profusion of bloom which they may be expected soon to attain. Those from Mr. Turner were the farthest advanced, and constituted a very attractive exhibition of themselves. They consisted of Beacon, Rose Celestial, Fairest of the Fair, Patroness, Candidate, Lady Canning, Lilacina, Celeste, and Empress Eugénie. Mr. Fraser, Lea Bridge Road, had good plants of Lorine, Fairest of the Fair, Mer Polaire, Rose Celestial, Leviathan, Roseum, Fair Rosamond, Beadsman, and Candidate. Mr. Ward, gardener to F. G. Wilkins, Esq., Leytonstone, had Fairest of the Fair, Nestor, Sir Colin Campbell, The Bride, Braeclat, and Lilacina; and Mr. Wiggins likewise sent a collection of six. Single specimens consisted of *Desdemona* in fine bloom from Mr. Turner, *Empress Eugénie* from Mr. Fraser, and *Rose Celestial* from Mr. Ward.

Awards—For nine: first, Mr. Turner; second, Mr. Fraser. For six: first, Mr. Ward; third, Mr. Wiggins. For single specimens: first, Mr. Turner; second, Mr. Fraser; third, Mr. Ward.

ROSES.—From Mr. William Paul came an excellent group, comprising Victor Verdier, Souvenir d'un Ami, Paul Perras, John Hopper, Anna Alexiiff, and others; also, a fine specimen plant of President; and other groups were exhibited by Mr. Turner, Mr. Wiggins, and Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Apton.

Awards—For nine: first, Mr. W. Paul. For six: first, withheld; second, Mr. Wiggins; third, Mr. Beasley.

FERNS.—An excellent collection of exotic kinds was exhibited by Mr. Burnard, gardener to J. W. Taylor, Esq., Woodberry Down, in which were fine specimens of *Cyathea medullaris*, Cooperi, and *denhata*; *Cibotium princeps*, *Dicksonia antarctica*, and *Gleichenia speculata*. In another collection exhibited by Mr. Bull, there were a very handsome example of *Marattia elegans*, large specimens of *Dicksonia antarctica* and *Cyathea denhata*, *Alsophila australis*, and *Platyceium alcockii*. Mr. Preece, gardener to E. Wood, Esq., Acton, and Mr. Young also furnished groups. Of Hardy Ferns, the finest group was that from Messrs. Ivery, of Dorking, which included several rare and beautiful forms of *Athyrium Filix-femina*, such as *plumosum*, *Fieldia*, and its variety *diffusum*, *Vernonia*, *crispum*; *Pseudathyrium flexile*, and a *Wardia* case of *Trichomanes radicans*. From Mr. Bull came *A. F. f. thyssanotum*, *Jervisi*, *Vernonia*, and *sagittatum*, the erected Royal Fern, *Lastrea Standishii*, *Woodwardia orientalis*, *Polystichum*

angulare Heleana, a fine mass of *Trichomanes speciosum*, and *Hymenophyllum tunbridgeense*.

Awards—For six Exotic kinds: first, Mr. Barnard; second, Mr. Bull; third, Mr. Preece. For twelve Hardy kinds: first, Messrs. Ivery; second, Mr. Bull; third, Mr. Young.

MISCELLANEOUS subjects, as usual, were numerous. Three fine plants of *Adiantum cuneatum* were shown by Mr. Bartlett, and a group of *Cinerarias* in good bloom by Mr. Lavey, gardener to C. S. Mortimer, Esq., Morden Park. From Mr. Parker, Tooting, came eight plants of *Rhododendron* Countess of Haddington, bearing a number of its large blush flowers; *Rhododendrons* of the hardier kinds were also shown by Messrs. Ivery, who received a third prize in the class provided for such. Mr. Bull contributed a collection consisting of *Rhododendron Dalhousianum*, *Palms*, *Dracaenas*, new double-flowering *Mimulus*, *Primula intermedia*, *Zonale Pelargoniums*; also one of new plants, noticed beneath. Of *Auriculas*, Mr. Turner again produced the fine collection exhibited before the Floral Committee on the previous Tuesday; also a plant of *Trillium grandiflorum*, covered with its large white flowers. Of *Nosegay Pelargoniums* a fine collection was exhibited by Mr. W. Paul, and among them *Salmon Nosegay* was noticeable for its large trusses and the size of the pips. *Calceolarias*, *Pansies*, and *Auriculas* were again shown by Mr. James, and a number of handsome and tastefully filled plant-cases by Messrs. Barr & Saunden. A Prickly Cayenne Pine Apple of 7 lbs. weight, was also exhibited by Mr. Page.

FLORAL SUB-COMMITTEE, May 3rd.—Mr. Bull sent a new plant, *Clachium firmum*, which was requested to be sent again; *Brownia princeps*; *Ahntilon vexillarium*; and *Rhododendron Bianca*, a very pretty plant, producing small compact trusses of pure white flowers. The whole plant seemed to be a miniature form of *Rhododendron*. Its history we did not learn. As a useful decorative plant it received a first-class certificate. *Azalea Reine des Roses*, *Azalea Grande Duchesse de Bade*, *Azalea President Humann*, *Azalea Madame Dominique Verreaux*, and *Azalea Mout Blanc*, also came from Mr. Bull, but were not considered equal to existing varieties. He also exhibited three seedling *Petunias*—*Granville*, a white-striped flower; *Fresco*, a white flower with broad purple band; and *Aurita*, a well-formed dark purple flower. Mr. Page, gardener to W. Leaf, Esq., exhibited a *Phalenopsis*, which was determined to be a good variety of *P. grandiflora*, but with darker yellow markings at the centre; it was a very fine variety. Mr. Turner sent a large specimen of the old well-known hardy plant *Trillium grandiflorum*, producing a mass of its conspicuous three-petalled flowers. A special certificate was awarded it. Mr. William Paul, Waltham Cross, sent a collection of his seedling *Pelargoniums*; but it was much too early in the season to judge of their merits. Two were selected for awards: *St. George*, the darkest scarlet yet raised, with globular trusses of flowers—first-class certificate; *Salmon Nosegay*, after the style of *Duchess*, but a brighter shade of colour—first-class certificate. *Rebecca*, a fine rose shaded with purple, flowers of good form and truss large—it will prove a first-class plant when seen later in the season; *Phoenix*, bright scarlet; *Peach Nosegay*, fine deep rose with large truss; *Cardinal*, dark orange scarlet; *Sir Joseph Paxton*, a very distinct bright scarlet *Nosegay*; *Zephyr*, pale pink *Nosegay*, and *Wood Nymph*. When these plants shall have been seen later in the season, and in a more favourable condition, they will all take their stand as first-class flowers.

WEEKLY SHOW, May 5th.—In the class for the best collection of three *Pelargoniums*, Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey, Acton, received the first prize; and in that for six miscellaneous plants, Mr. Young, of Highgate, was first, and Mr. Beasley, second. For three *Azaleas*, Mr. Young was again first, as well as for the best collection of cut flowers, for which Mr. Bartlett was second. Mr. Morgan, gardener to the Marquis of Townshend, obtained a prize for a fine dish of Strawberries; and Mr. Beasley one for a fine dish of Black Hamburg Grapes. In the miscellaneous class, Messrs. Catbush, of Highgate, received prizes for twelve *Hyacinths*, for twelve miscellaneous plants and *Azaleas*, and for six very fine pots of *Forget-me-not*. Mr. Bartlett exhibited three handsome specimens of *Adiantum cuneatum*, for which he received a prize; and Mr. Young was equally successful with a collection of Ferns. Messrs. Lucking received a first prize for a collection of *Pelargoniums*, and Mr. Morgan a first-class certificate for flowers of *Gloire de Dijon Rose*.

COCOA-NUT FIBRE REFUSE.

For thirteen years this refuse had been accumulating, and we thought it would ultimately become a trouble and expense to us. In 1862 we had just commenced burning it with coal tar under our steam-engine boiler in lieu of coal, when the late Mr. Donald Beaton drew our attention to its valuable uses for the garden, and induced us to advertise it. In the course of four years we have sold about three-fourths of these mountains of refuse, besides what we have been producing in the meantime, so that shortly we fear there will be very little to be had, for during the last few years the supply of *Cococa-nuts* has been decreasing and the price increasing. We, of course, lament this, and so will all those who have used this refuse if we may

judge from their repetitions of orders for it, and their letters expressing the satisfactory results in the variety of uses to which it has been applied.—J. BARSHAM & Co.

THE MANGO AND MANGOSTEEN.

HAVING received several communications impugning the correctness of the statements made by our correspondent "J. H." relative to the cultivation and fruiting of these tropical trees, we thought it due to the public, to our correspondent, and to ourselves, to ask him to inform us where and when he had produced these fruits in England. Several letters have been interchanged between us; but on our asking permission to publish them, our correspondent declined giving that permission. He has sent us, however, the following, which is a fair summary of his various replies:—

"Dear Sir,—In answer to your letter of the 4th inst., requesting me to allow our correspondence to be published in THE JOURNAL OF HORTICULTURE, I beg to say that, as the letters were all written without the very faintest idea of their being made public, I must decline to accede to your request. At the same time, as I said before, you are perfectly at liberty to give my name and address to any one asking for it.

"With regard to the small Mangosteen tree alluded to by your correspondent in last week's Number, it was fruited by me at my father's residence at Allestree, near Derby, in the years 1859-60-61; but much of the fruit was not ripened, as my means for growing it consisted of only one small house at that time, and I have, since writing the article on the subject, made the discovery that it was not the true Mangosteen, but the sort commonly sold as such. I must, however, mention that all the Mango or Mangosteen trees I have sold during the last three years have been, with few exceptions, imported by myself from Karang, or Singapore, where our gardener at the time I speak of is now living; and I say to you, as I said to those ordering plants, that I am always ready and willing to take back any Mango or Mangosteen trees if in as good a state as when I sent them out.

"I have for some years, as I mentioned to you when I sent my first papers to your Journal, given up growing tropical fruit trees for fruiting-purposes, as I have not the means now for so doing; but whether my instructions are contrary to the condition under which the tree usually grows or not, I will guarantee to take any moderately sized Mango or Mangosteen tree now, and before this time next year, by my mode of culture as detailed in your pages, have it in blossom if not in young fruit, provided any one interested in the experiment will pay the necessary expenses should I succeed.

"I must add, in conclusion, that I am truly sorry I was ever persuaded by friends who have had trees from me to send the papers on tropical fruit culture to your Journal, and I am still more grieved that my statements should have been taken to mean more than I intended when writing them; but I can truly say that my one only object was the earnest wish to see these noble tropical fruits more generally cultivated.—J. H."

We do not coincide with our correspondent in regretting the publication of his communications, accepting them as truthful. They have aroused attention to the subject; and but for such arousing he would have gone on inculcating that about the Mangosteen which he now finds was based on error.

More than one inquiry has reached us relative to another "tree," which our correspondent has been offering for sale under the name of *Passiflora macrocarpa splendens*, stating that it bears an excellent fruit weighing from 10 to 14 lbs. We can only say that it is not mentioned in any botanical work that we know, nor do we know any *Passiflora* that assumes the habit of a tree. There may be some mistake here also.

HORTICULTURAL DINNER.—We are glad to hear that a large number of gentlemen holding leading positions in the horticultural world, have given in their names as stewards of the dinner. The meeting at St. Martin's Hall on the 24th promises to be one unparalleled in character in this country, and the seats are rapidly filling up; gentlemen intending to dine should make early application for tickets, or they may be too late. A better chairman than Lord Henry Lennox could not be obtained—at once genial, sympathetic, and a graceful and fluent speaker. The dinner will be provided by Messrs. Spiers and Pond, and it being the first public dinner they have attempted in London on a large scale, there is no doubt their

extensive resources will furnish *matériel* worthy of the occasion. We are desired to announce that through an error of the engraver the tickets had been printed Tuesday, May 24th, instead of Thursday, May 24th.

CULTURE OF VINES IN POTS.

(Continued from page 303.)

Am.—Until the Vines break the house may be kept closed, for then a much more humid atmosphere can be maintained; but should ventilation be necessary to keep down the temperature, air must be given, advantage being taken of sun heat to close early, for such heat is vastly superior to that which is artificially supplied. After the eyes have broken air must be given, but, from the dulness of the winter months, if we wait for the sun before giving it the shoots may become as weak as straws. A little air should be given daily if possible, if only for an hour or two, so as to afford a change of atmosphere. When practicable, affording a little air constantly is the best way to avoid lank growths and thin leaves, neither of which give fruit worth the pains. It is galling to devote a house to Vines in pots for early fruit, and find the leaves scorched by the sun, or flagging after dull periods, and the bunches twisting or curling into tendrils, as is commonly the case. I am certain that the principal evils attending the early forcing of Vines are to be traced to a deficiency of air in the early stages of growth. Until the leaves attain their full size air is particularly essential, in order that the parts that are to feed the crop may be capable of performing their functions. A little air, then, on dull days does good, and it should be given more abundantly with the increase of temperature. On dull days, when the temperature by day may be only 5° higher than by night, a little air may be given for an hour or two, which will be sufficient to cause a change of atmosphere. On cloudy days with clear intervals air should be given when the thermometer has risen 10° above the night temperature, and on clear days when it registers 10° higher than in the night, increasing the amount if the temperature rise more than 5° after the first admission of air. Ventilation should never be resorted to to lower the temperature; but the latter, whatever it be, should increase after ventilation is given, or at least be maintained. If ventilation lower the temperature either the house is too warm or air has not been admitted sufficiently early. When the temperature declines, then is the time to shut up the house, and not to admit much air.

Provision being made for the admission of a little air at all times, the house being heated sufficiently to admit of this, air should be afforded when the thermometer reads 10° higher than the night temperature, which I will for the purpose of illustration suppose to be 60°. Air will then be given at 70°, not in such quantity as to lower the temperature, but so that the latter may increase. The temperature increasing 5° more, if the sun's power is likely to raise it still higher the maximum amount of air may be given, but so that the mercury may rise ever afterwards. It may rise to 80° or 85° and will do good. The amount of air should be reduced when the thermometer first begins to fall, and, beyond the little left on day and night, no ventilation should be afforded by the time the heat has fallen to between the maximum day temperature (75°), and the highest extreme (80° or 85°); but in any case the house should be shut up by the time the temperature has fallen to 75°. On cloudy days with clear intervals it will be impossible to adhere rigidly to this rule without continually opening and shutting up of the house, but it will be found that any trouble taken on such days has not been misspent.

When the Grapes change colour more air may be admitted; and if not hitherto given at night and in dull days it should now be afforded, otherwise moisture may condense or be deposited on the berries, and it is destructive to the bloom. At this period air must be given early, or before the atmosphere has become heated to any considerable extent; for the heated air will deposit moisture on the berries, because they will not become heated so rapidly as the surrounding atmosphere, and so long as they remain colder moisture will be condensed on them: hence the necessity of increased ventilation when they are colouring, so that the atmosphere may not be rapidly heated, or become much warmer than the berries. This is an important point, for an indiffererent or spotted bloom on the berries is frequently to be attributed to allowing the moisture to condense on them after they change colour, and not to syringing up to the time of colouring, as is often asserted. Providing

air be given early (and it is of no use giving it late), no harm results to Grapes from a judicious use of the syringe. I say, Use it, employing clear rain water only, and heated to the temperature of the house. It is want of air early that causes the leaves to scorch, or allowing moisture to condense upon them whilst the sun is causing rapid evaporation. The foliage of trees under natural conditions is not scorched after a shower, but under glass the leaves suffer from this evil, because we do not give air to carry off the moisture. The berries very often spot from the same cause. Bad glass is also a frequent cause of the leaves being scorched. Syringing has nothing to do with it. It does not matter whether the leaves are wet or dry when the sun's rays fall upon them, if only there be air to keep the atmosphere from being more suddenly heated than the water on the leaves, and to carry off the moisture evaporated instead of allowing it to condense. If the moisture is not carried off by giving air early, it will condense upon the leaves, and they will scorch without being syringed.

Fresh air cannot be admitted too early, but it may be in too great a quantity, and so cold as to lower the temperature, and thus stagnate the growth. Various schemes have been adopted to effect the heating of the air before it comes in contact with the Vines. I find nothing answers so well as a piece of tiffany nailed over the ventilating openings. It breaks the current of air if it is disposed to rush into the house, and the heated and vitiated air is driven out at the upper part of the house. It is of no use admitting air in front if the vitiated air is not allowed to escape at the back. We want to displace foul air by fresh. It is hardly necessary to admit air in front in the early forcing of Grapes; but if it is given there the openings should be on a level with the hot-water pipes or flues, or, better, when a little below them, and so contrived that the cold air entering passes over or comes in contact with the heated surface, and thus becomes warmed before it reaches the Vines. To prevent currents, a piece of tiffany or hexagon netting doubled should be fastened over the external openings.

—G. ABBEY.

(To be continued.)

NEW BOOK.

THE FRUIT MANUAL.

The Fruit Manual: containing the Descriptions, Synonymes, and Classification of the Fruits and Fruit Trees of Great Britain, with Selected Lists of the best Varieties. By ROBERT HOOG, LL.D., F.L.S., Pomological Director of the Royal Horticultural Society of London; Author of "British Pomology," "The Vegetable Kingdom and its Products;" and Co-Editor of "The Journal of Horticulture." Third Edition. London: Journal of Horticulture Office.

This, the third edition, is really a new book, and contains many varieties and kinds of fruits not described in the previous editions. These fill many more than one hundred additional pages; but we cannot do better than quote a passage from the Preface:—

"In the present edition the main features are.—a great increase in the number of varieties described; an entire revision of the synonymes, in which some errors in the previous edition have been corrected; new classifications of the various Fruits, with the exception of the Apple and the Pear, which I have not yet succeeded in arranging to my satisfaction; and greatly enlarged and re-constructed lists of the most select varieties of the different kinds of Fruits, serving as a guide to those who have no other means of knowing what are and what are not worthy of cultivation."

CHERRIES AT CANTERBURY, NEW ZEALAND.

That the Cherry is equal to the Peach in the shape of stone fruits in this part of the world, there is abundant proof this season in my fruit garden, for the greater part of my trees are heavily laden with abundance of fruit, and of the finest quality.

The first I will mention is Bigarreau Napoleon; for size the fruit are more like Plums than Cherries. It is a French Cherry. It is also a good bearer, resembling the old Bigarreau, but darker-coloured, and of first quality and first size.

The second is the May Duke, not so large as the first, but possessing many other good qualities.

The third is called Black Tartarian, generally considered to have been brought into England from Russia. It is also stated to have originated in Spain, whence it was transmitted to the Russian gardens, and through them into England. At any rate, let its history be what it may, it is a Cherry of great ex-

cellence. It is also, like the May Duke, valuable for its earliness, and is a good bearer in this country.

I have picked 336 lbs., or 3 cwt., of ripe early Cherries from December 11th to January 5th, 1866, inclusive, and exclusive of the Morello, Kentish, and other late sorts, which are now (January 8th), ripening. They have realised me 1s. per lb. from first to last, and were grown on very young trees.—W. S., *Avon-side Botanic Garden.*

NOTES ON THE WAY TO THE HOLY SEPULCHRE.—No. 1.

If we take the map of the world, and cast our eyes on the Mediterranean Sea, how insignificant it appears; save for the narrow inlet of the Straits of Gibraltar it might be taken for an inland lake; and yet when England was inhabited by "barbarians," and America was even more problematical than the North-west Passage, the blue waves of the Mediterranean bore on their bosom the wealth and civilisation of the entire known world. Yea, and more than this—how much more many a Christian can tell.

In those days of the "long ago," when the Roman empire extended far away beyond the countries washed by the waves of the "Great Sea," a poor prisoner was being sent in "a ship of Alexandria" to answer for conscience sake at Rome—Rome the central point of civilisation and of idolatry. Strong in the power of a faith that made even bonds and afflictions unworthy of comparison, the prisoner stood amidst his fellow passengers always ready with words of encouragement and of needful help. He was no common man; learned, even amongst the most learned, he possessed an intelligence so keen and subtle, that at times his great power of reasoning led those who listened to him without the power of following his argument, to accuse him of madness, and yet so humble withal, that he counted all his acquirements as less than nothing, so only he might be clothed with a stronger faith and a deeper love in Him for whose sake he was a prisoner. He had gone through much—loss of friends, loss of power, loss of wealth; he was on his way to bonds and death: but these things had no power to move the deep tranquillity of a soul at rest; and as he stood on the deck of the rude vessel making its slow progress against a contrary wind, he watched the sun sinking, as it were, beneath the waves, and as its last edge dipped below the horizon, he saw it emit that instantaneous dazzling light of emerald green that is never seen save in stormy weather, and then only for a moment. Did the sun setting in the troubled waters speak to him, as it speaks to us, of light unquenchable?—hidden sometimes from our sight, but never less dim than when our straining eyes watch its momentary eclipse.

We cannot enter into the deep loneliness of that poor prisoner. Surrounded by men who did not recognise in him other than a common malefactor, they neither believed his word or listened to his voice. They knew not what they did, nor what great message their ship was hearing through the sea; the very elements themselves ministering to its publication and success. At Sidon, at Myra, and then in the Alexandrian vessel passing onwards to Crete, the good tidings were heard—tidings which fell like good seed on a fruitful soil, and have brought forth the most glorious harvest this earth ever witnessed.

We can follow the weather-beaten vessel on its perilous way till it comes to its rocky anchorage within the protection of the "Fair Havens." Through the able researches of others*, we can almost see the very spot where the vessel anchored; the graceful sweep of the waters, as in their tideless beauty they wash the sandy, rock-surrounded beach. The hold rocky islets advancing into the sea, forming the main shelter of the Havens. We can also notice how the Havens, by being exposed to the east and south-east winds, would be unsafe, and "not commodious to winter in;" and what is even more to the purpose, we can land on the island and wander about amidst the records of the past, amongst the most interesting of which, perhaps, will be the ruins of the little chapel on "the dark slaty ridge rising immediately over the western bay," and still dedicated to St. Paul, most probably marking the very spot where the Apostle himself used to preach to the natives of Crete in their "own tongue, the wonderful works of God."

From this spot we can pass on over mountains bright with *Ranunculus*, the *Fritillaria tulipifolia* "white as a Snowdrop,"

and as delicate as a wax plant," and the *Salvia cretica*, "a fine and beautiful shrub," bearing purple blossoms—or through valleys abounding in Vines and Dates, in Oranges, Lemons, and Pomegranates. We may rest beneath the dark evergreen shade of the *Ceratonia siliqua* or Carob tree, or listen to the nightingale of our native woods pouring forth floods of harmony from groves of Olives; we may pass through villages inhabited only by lepers, where the watercourses are shaded by Oleanders, giving forth their gracious beauty to the poor leper's gaze as freely as when they dipped their trembling buds in the lake of Galilee, as the shadow of the Saviour passed by; we may stay to look at an evergreen Plane tree, the existence of which was mentioned by Pliny; or we may examine Roman remains, or those of classic Greece, all speaking of ancient prosperity, and of grandeur passed away.

Thus wandering on, still bearing in our minds the memory of the ruined chapel over the western bay, and of the prisoner brought by the ship of Alexandria, preaching glad tidings to listening Cretan crowds, let us enter the village of Khadra on a summer's afternoon in the year 1851, and we shall find that the echoes of the good news are still ringing through the island.

"As I entered Khadra," writes Captain Spratt, "there was a bustling activity going on with every male inhabitant present, twenty or thirty of whom were carrying stones to a particular building, whose walls were just rising a few feet above the ground. It was the rebuilding of one of the village churches. Old and young, priest and layman, were for the moment all builders and masons under the guidance of a hired master, and were carrying large stones from some distant ruin, or bringing the mortar to cement them in their appropriate places. It was an interesting sight; for this half-hour's earnest individual labour at the close of the day was thus devoted to religion. Some were evidently past labouring for their own subsistence, yet they too carried their load, although with distress under the mere pebble they could bring; yet it was carried by some of threescore and ten or more, and was thrown into the general heap, as the widow cast her mite into the common receptacle."

So the gift of the Cretan tongue at Pentecost was no idle gift, and the detention of the "Prisoner of the Lord" at the Fair Havens no accident, but rather the interposition of Providence for the salvation of souls.

How bountiful Nature has been to many a favoured spot in this beautiful island is proved by ancient as well as modern writers. It has been called the "garden of the whole universe," "the goodliest plot," "the diamond sparke, and the honney spot of all Candy." One district—Melavisi, is famed for its wine; another—Sfakian, is celebrated for its fresh cheese, called "Sfakian masethra," which is described as being as delicious as that of the island Samothraki; another produces Wheat from which is made the most delicious bread. We read of Chestnut groves, of wild Vines, like gigantic creepers, entwining tall trees of Plane, and Elm, and Oak up to their very tops; the pendent tendrils, together with leaves and bright red Grapes hanging from their branches in graceful festoons; while Myrtle and Yellow Broom, and numberless bulbous plants, form a carpet at their feet.

And it was from this goodly land that the Alexandrian vessel, contrary to the advice of the Prisoner on board, turned away to continue her voyage, as was hoped, to Phenice, another haven of Crete. When the south wind blew softly, they thought they had chosen wisely and well, and how foolish they should have shown themselves had they "hearkened" to the prisoner and remained in the less commodious haven; but the course of the Alexandrian vessel was guided by a Master whom even the "winds and sea obey"—she carried merchandise to which gold and silver are as dross. Rising up from the waters of the Great Sea there was yet one other island destined to hear and to lend a willing ear to the good news the prisoner had to tell. Ere long a violent storm arose against the doomed ship. For fourteen days the fasting shipmen strove against the tempest till all hope seemed gone, and then the Prisoner stood forth amongst his fellow men in his true character as the messenger of God, and in their hour of terror, and, as they feared, of approaching death, they recognised his mission and obeyed his voice.

We can all picture to ourselves the shipwreck that followed the storm—the low white coast of the island of Melita—the "barbarous" yet kindly-hearted people hurrying down to the beach with words of welcome to the poor mariners. We can, as it were, see them lighting the unwonted fire, "because of the

* "Travels and Researches in Crete," by Capt. T. A. B. Spratt, R.N.

present cold"—the serpent coming out of the fire and fastening on the prisoner's hand; the barbarous people, ready then, as we are now, to mete retribution and judgment to others according to our own ideas of right, eagerly watching for what should follow. We can note the change from suspicion to veneration, as in Arabic the prisoner's persuasive voice addressed the wender-stricken people, for this picture has been familiar to us all from childhood, St. Paul's shipwreck and his residence at Melita being one of those striking recitals that lay hold on the mind with enduring tenacity; and we do not wonder as we read of the attachment of the descendants of these very barbarous people to their faith, and of the sacrifices they are ready to make for the maintenance of their churches, which in even some of the villages surpass in splendour many a cathedral in Italy.

For three months St. Paul remained on the island. We cannot help longing for a more minute record of his visit than that bequeathed to us, so that we might follow his steps as he went about on his errands of healing and mercy, and see as he saw the face of Nature as it rose from its wintry sleep.

By looking at Malta as it is now, noting its produce, its trees, and flowers, we shall find some features that remain unchanged; we shall in some sort see as with St. Paul's vision, and know a little of what those "things" were with which the grateful, kindly natives loaded the apostle when he departed from their island on his onward journey to Rome.

The great difficulty that the agriculturist has to contend with in Malta is its want of soil. Naturally the country is rocky and sterile, excepting in the valleys, where the earth is good and productive; but where Nature has been less bounteous, there the skill and industry of man have compensated for her shortcomings. Terraces are cut out in the rock, the earth carefully collected and placed—sometimes in depth not exceeding 18 inches—on layers of broken-up rock, and on these terraces plentiful crops of corn and cotton are grown, the want of rain in summer being supplied by heavy night dews.

The gardens of the flat-roofed houses are protected by hedges of Cactus or Prickly Pear, the fruit of which is eaten profusely by the natives. The chief sweetmeat of Malta, Caramilla, is made, or rather flavoured, from the expressed juice of the pod of the Carob or Locust tree, while the pods themselves, which are produced in clusters from the knotted parts of the tree, are useful as fodder for the horses and cattle. The *Hedysarum coronarium*, with its large clusters of crimson blossoms, is used largely for fodder, as also is green Barley. Oats are not grown, nor is there meadow land to any extent. There are a few Olive trees, but no Vines. Pomegranates are to be met with, and considerable quantities of small Figs, the latter being always eaten on St. John's day, and called St. John's Figs.

Malta has been celebrated from very early times for its manufacture of fine linen cloth, which was much prized by the Romans even in their most luxurious days. An English loom has lately been introduced, and shows to great advantage by the side of those of native manufacture, which at best are but rude performances.

The natives of Malta—the true descendants of the barbarous kindly people of St. Paul's day—are a fine, dark, athletic race. The head-dress of both men and women is peculiarly picturesque, the former wearing a long conical-shaped cap of bright blue, falling over the head and hanging down at the side, while the women add to a dark dress the Spanish-looking black fal-detta. Their language is, as it has been since Malta had a history, almost pure Arabic.

The most common wild flower is the Borago; but there are many others that rise up by the wayside and divert the attention from the too great glare of the white roads and rocky terraces; amongst these the *Mathiola tricuspidata* is, perhaps, the most lovely; it bears flowers of a bright lilac hue amidst a cluster of silvery-looking leaves, and even in death it has a sweet scent like a Primrose. The *Gladiolus segetum* or communis rises up as in Italy amidst the green corn, while on the hillside facing the glorious sea that breaks triumphantly against giant reefs of rocks you may gather the little yellow *Adonis aestivalis*, the *Tenerium fruticans*, *Ophrys fuscus*, and *Bellevalia comosa* (called by some botanists *Muscari comosum*). Besides these there are the *Nigella hispanica*, *Lavatera trimestris*, *Psoralea bituminosa*, *Tetragonolobus purpureus*, the *Chrysanthemum coronarium*, and many others of which I have no account.

I have never seen any Fern from Malta, and the absence of streams, springs, or indeed of any save artificial watercourses, would make the country uncongenial to them.

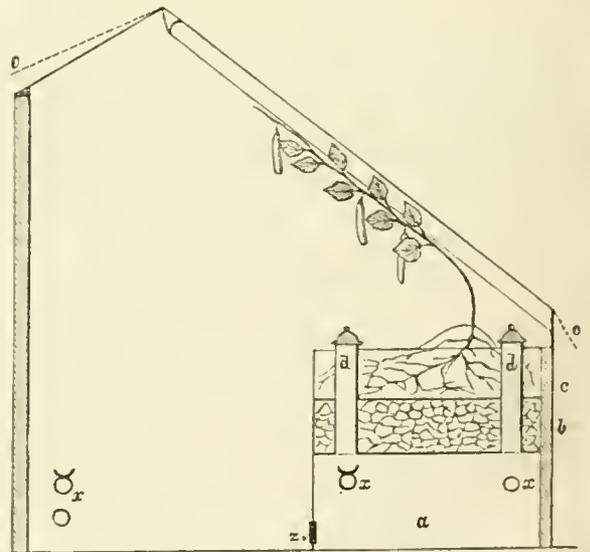
The flowers I have mentioned are the flowers of spring, such as would have cheered the shipwrecked Apostle as he went about following the footsteps of his beloved Master in doing good, the "Shadow of the Great Rock in a weary land." The fertilising dew, the Lilies of the field, the sea, the ships, may all have furnished the illustration for that preaching which confirmed the faith of Christ so powerfully in the minds and hearts of the Maltese people, that no bribes or threats have ever once had the power to make them, as a people, swerve or change.—*FELIX-FEMINA.*

CUCUMBER CULTURE AND HOUSE.

I HAVE read with interest the articles on Cucumber and Melon culture which have appeared in THE JOURNAL OF HORTICULTURE, and agree with Mr. J. Willis in every respect but one. He recommends the sowing of five or six seeds in a 60-sized pot, and the plants to be separated as soon as they are up. Now I do not like this practice; there is far too much danger attending it. The way in which I manage my plants (and I never have a mishap, although I raise scores every year), is as follows:—

I take a 40-sized pot, and put about 2 inches of good fibrous soil over the drainage, leaving the pot about half full; I now put in the seed, and place the pot in a good bottom heat, about 80°. In about two days the seedlings show through the soil, and, when the seed leaves open, I put a little more soil round, and continue adding more so long as the plant grows, keeping only the seed leaves above the soil. This, I find, encourages root-action all up the stem, and very soon you have a fine strong plant and a pot full of good roots. As soon as the second rough leaf is open, I plant in the bed prepared for fruiting.

I enclose the design of my Melon and Cucumber-house. The dimensions are as follows:—Width of house, 11 feet; width of bed, 4 feet; depth of soil without the mound, 6 inches; depth of brickbat drainage, 18 inches; distance of soil from the glass in front, 18 inches; highest point in roof from ground, 10 feet 6 inches.



a Hot-air chamber.

b Brick drainage.

c Soil for roots.

d d Pipes for allowing hot air to escape from the chamber.

x x Hot-water pipes.

o o Ventilators.

d d Pipes for allowing hot air to escape from the chamber.

x x Hot-water pipes.

o o Ventilators.

z z Sliding door to chamber.

For ventilating the hot-air chamber I have two pipes above the pipe without the evaporating-pan, and three on the one with the evaporating-pan. I have also two sliding doors in the bottom of the chamber, so that I can have any heat I like under the roots, and either moist or dry.—*CUCUMIS.*

CHEILANTHES ODORA CULTURE.

ABOUT six weeks since I received a small box of plants of this most interesting little Fern, direct from Mentone. These plants were found within a walk of the town, and were well

grown and very healthy. Having experienced considerable difficulty in cultivating Cheilanthes on a former occasion, I determined to try a plan of my own, which had answered for another very tender Fern. I took a large pot, filling it for about 2 inches with drainage; in this I placed a smaller pot, with about an inch of drainage, filling up both pots with peat earth, mixed with a very little silver sand and a small, very small, proportion of cocoa-nut refuse. I planted the Fern, placing a glass over it, the glass removed from the soil about half an inch by broken bits of rock, so that air is admitted at all times. I keep the Fern in the window of the drawing-room, watering it every two or three days, taking off the glass while the moisture evaporates from the fronds. Some ten or a dozen new fronds have sprung up, and the whole plant looks as fresh and healthy as possible.

In the same window I have four pots of the Cyclamen europæum, which I brought last year from Florence, and which have been in bloom several weeks. Both leaves and flowers are considerably larger than they were when growing wild in Italy.

Some Ixias (crocata), that I brought from Bologna are in full bloom; but the size of the flower is much smaller and the colouring far less brilliant than when I saw them in their royal home at the Villa Reale.—*FILIX-FÆMINA.*

WINTER LINGERING IN THE LAP OF MÅY.

THE past week has been one of the most severe I ever remember in the north of Ireland; Pears, Plums, and Apples, both late and early, are totally destroyed, although mostly covered with spruce branches and hexagon netting, which appear to have been useless. Young growths of forest trees, young Broccoli, Savoya, Cabbages, and all young seedlings are very much injured. The following are the correct temperatures taken by one of Cassella's registering thermometers—viz., April 29th, 9°; 30th, 4°; May 1st, 11°; 2nd, 4°; 3rd, 8°.—*E. WELCH, Palace Gardens, Armagh.*

THERE was a fall of snow at Teignmouth on the 3rd instant. At Chiswick, on that date, the thermometer fell to 26°, and in the succeeding night to 25°, or 7° below the freezing point.

FROST AND PROTECTING MATERIALS.

I wish it were in my power to say with Mr. Bréchant, "that the winter is now happily past." We, who live amongst the hills of Yorkshire, have been enduring for the last ten days a most cutting wintry blast from the north-east. The distant hills are still white with snow, and the frosts at night are most severe. I shall never forget the destruction which the frost of the night of the 29th and morning of the 30th of April worked in my garden. The blossom on all the unprotected Plum trees was completely destroyed, even the more forward buds of the Morello Cherry were also killed. I do not, however, desire to relate the injury my garden has sustained, but rather to make known for the benefit of others the lesson which these frosts have taught me. Three different kinds of protecting material are used here to cover the fruit trees trained to the walls. Frigi domo, the improved make, 3 yards wide, at 2s. 8d. per yard, is used to cover Plums and Cherries and several Pear trees. This material was in excellent condition, had not a single hole in it, and was fastened against a south brick wall under a stone coping, which projected about 6 inches. The frigi domo hung down to the ground, and was prevented from pressing too close to the bloom by poles reared up against the wall, and yet, notwithstanding this careful protection, a most abundant crop of Plums has been almost entirely destroyed, and the blossom of the Pears has shared the same fate. About two-thirds of the bloom of the May Duke Cherry have also been cut off. Fifteen Pear trees on another south wall, and which were in full flower, were protected with stout harden. These trees have suffered but little injury. The blossoms of Easter Beurré and Fondante d'Automne, a delicious Pear, have been injured to some extent, but the other trees have sustained no damage worthy of mention.

Apricots, Peaches, and a few choice Pears were protected with a woollen material, a pattern of which I enclose for your inspection. Under this covering all the fruit trees were preserved from injury, even the tender bloom of the Marie Louise Pear has not a single mark of frost upon it. This is the eighth spring that this material has been in use, and it has never yet failed to resist the utmost severity of spring frosts. It was purchased on the 6th of January, 1858, of Mr. Ashworth,

woollen manufacturer, of Haslingden, near Manchester. It is 1½ yard in width, and cost 1s. 7d. per yard. It is still in excellent condition, as the enclosed pattern will show, and will in all probability continue to be serviceable for several years to come. I hope I am not out of order in mentioning the name of the maker, for when I applied about two years ago to Messrs. Ashworth for a further supply, I was informed that they had ceased to make it; still, it is possible, in the event of a good demand for this material springing up, the firm might be induced to resume the manufacture of this invaluable protecting material.

The frost, then, has taught me—First, That frigi domo is a most inefficient protecting material; moreover, its cost is considerable, and it does not wear well. Secondly, That stout harden will exclude frost far more successfully than the frigi. It is also cheaper, as it can be bought 6 feet in width for 1s. 5d. per yard. It will last much longer than frigi domo, and can be easily procured of different widths to suit the height of wall. Thirdly, That the Haslingden woollen druggut is far superior to either frigi domo or harden as a protecting material, and if its efficiency and durability be taken into consideration, it would still be cheap at a higher price than 1s. 7d. per yard. If, however, this sort of druggut cannot now be obtained, an efficient material for protecting fruit trees from frost is still a desideratum.—*C. M., Cargrave Vicarage, May 1st.*

WEATHER WISDOM.

(Continued from page 201.)

It has been previously remarked that in calculating the probabilities of future weather, the observer must never neglect to make use of a thermometer, and to note the readings of that instrument as well as those of the barometer. Such observations are always necessary, and of the greatest importance, because a rising barometer with a falling thermometer shows quite a different prospect of probable weather to that which a rising barometer and a high thermometer would lead observers to expect; not, however, when a barometer and thermometer are placed in a hall and hung up where both are influenced, more or less, by the rays of the sun, or by the heat of a fire. Then an attached thermometer is not of much use for weather wisdom, and only informs the observer of the temperature of the air surrounding the column of mercury, and for closer observations gives him the means of finding out how many hundredths ought to be deducted from the observed height of the column, the mercury in the barometer being affected by temperature. Such temperature must be taken into account in order to obtain a true reading in all critical observations.

While on the subject of thermometers, I think it may be of service to point out some of the chief causes which bring about such discrepancies in the readings of these instruments. I do not by discrepancies mean difference in temperature as compared with the temperature of the previous day, but discrepancies in the temperatures of places close to each other. Many of your readers, doubtless, remember the time when the readings of their registering thermometers differed considerably from those of their neighbours close by. All were good instruments, by good makers, and yet the difference caused some anxiety as to the dependance to be placed on the observations, in cases where, had the thermometers been suspended side by side, the readings would, no doubt, have been identical. It is a common remark to hear on a frosty morning, "My thermometer registered so many degrees of frost," and another person living close by will say, "Mine registered a greater number," making a difference, perhaps, of three, four, or even more degrees. The cause of such discrepancies in temperature is generally as follows. When comparisons of temperatures are made, no allowance is given for aspect, or for the place where the thermometer is fixed. Now, there is a great difference between the readings of a thermometer on the grass, and of one placed 4 feet above the ground, or again of a thermometer placed on the snow. It was recorded by Mr. Lowe, writing from Highfield House, at the time of the great frost, on the 25th of December, 1860, that a thermometer at 4 feet from the ground was 6°, and another on the grass 8°, below zero; and at Beeston Observatory, one 4 feet from the ground, 8.3°, another on the grass, 11.7°, and another on the snow, 13.3°, below zero.

Again, some thermometers are placed in very sheltered situations—near a window, or where the true temperature is really never arrived at. Others are placed facing the north or the south, and in all cases where there is a difference it can

generally be accounted for by the circumstance that locality, aspect, or position, has affected the reading of the instrument. Sometimes a good instrument in the hands of a novice may from bad hanging read incorrectly, owing to a portion of the spirit becoming detached, and fixing itself at or near the end of the thermometer tube, causing thereby a diminution in the true reading equal in amount to the number of degrees which are in the upper portion of the instrument. And, again, such error may be occasioned by the evaporation, and subsequent condensation of the spirit at the upper surface of the thermometer, a fault which can always afterwards be remedied by placing the thermometer in a position slightly out of the horizontal.

Should an observer have any doubts as to the correctness of the instrument in his possession, it is much better at once to test its accuracy rather than to continue any longer in doubt. A good instrument furnished by a neighbour will give every facility for testing and comparing, and finding out the true readings. Such a comparison is very simple. Plunge both thermometers in water, covering the mercury in the stem, and after an interval compare the readings. If the thermometer whose accuracy is doubtful reads identically with the standard, of course no corrections are necessary; but if there is a difference, the observer knows the error of his instrument, and provides against it accordingly in future readings. Such a plan for testing gives only one reliable degree of temperature; therefore, the comparison should be carried on with water heated to different degrees, so as to correct the instrument throughout the whole scale. An accurate thermometer is an essential to a gardener, and quite as important as good gardening tools. He should be most careful that both for in-door and out-door purposes the instrument be suspended in such a manner, and in such a spot, that he obtain the true temperature of the air existing at the place. Fallacious temperatures caused by the bulb being in too close contact with hot-water pipes, or exposed to the rays of the sun, are too often the cause of great mischief in hothouses. A thermometer should be so suspended that the instrument tells its tale truly—viz., the exact temperature of the external air, or the actual heat of the forcing-pit or greenhouse. A good thermometer is one of the greatest boons to a gardener, and one of the best aids to weather wisdom next to the barometer, but without correctness no good result can follow the study of the thermometer, either taken by itself or in connection with the barometer.—*X. Surrey.*

INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

WE have had much gratification in learning, and the feeling will be shared by botanists and horticulturists generally, that at the Oxford Commemoration, on June 13th, it is proposed to confer the honorary degree of D.C.L. on M. Alphonse De Candolle, President of the International Botanical Congress, and on Dr. Hooker.

We also learn that the Belgian Government, as well as the railway and steam-boat companies, have accorded very great facilities, by the reduction of fares for the transport of passengers and goods by way of Antwerp or Ostend to London, on the occasion of the International Horticultural Exhibition. The Netherlands Government have also accorded a like boon in regard to their fiscal arrangements.

Through the kindness of Dr. Hooker, the Royal Gardens, Kew, will, during the Congress week, be open to our foreign guests at 10 A.M. instead of at 1 P.M. as usual. The Council of the Royal Botanic Society, Regent's Park, and that of the Zoological Society, have also most liberally thrown their respective gardens open to the distinguished foreign members of the Botanical Congress.

PARIS EXHIBITION OF 1867.

A MEETING of horticulturists was held at the Royal Horticultural Society's Garden, South Kensington, on Tuesday last, the 1st instant. Mr. Henry Cole, C.B., presided, and among those present were Messrs. J. G. Veitch, Turner, Laing, Edmonds, J. Lee, Bull, Moore, T. Osborn, A. Waterer, W. B. Booth, &c., and Drs. Hogg and Masters. The Chairman remarked that it would no doubt answer the purpose of horticultural builders to send subjects to such an exhibition as that to be held at Paris, and the object of the meeting was to ascer-

tain if it would be practicable for British growers to exhibit their plants there, and how this might best be done. He understood that it would be permissible to sell the plants exhibited, which might save the cost of transit one way. He further stated that a park of thirty acres would be devoted to this exhibition, and that three acres were assigned to the English, who would be free to erect there what houses and fill them with what plants they liked. Besides, a good deal of ground outside could be planted with subjects for sale. Some discussion ensued, in which Messrs. Edmonds, J. G. Veitch, Lee, Turner, Waterer, and Bull took part, the points mooted being the free transit of plants to the exhibition; its duration; the possibility of keeping a certain space gay with any plants that might be in season, such as *Anriculas*, *Pelargoniums*, and other special subjects; and the mode of judging. Several gentlemen having expressed themselves in favour of a continuous exhibition by the removal of plants when their season was over and replacing them with others, the following resolution was moved by Mr. J. Gould Veitch, seconded by Mr. J. Lee, and adopted—viz.,

"That British horticulturists will be happy to accept the invitation of the Imperial Commission to support an International Exhibition of Horticulture for a period not exceeding a fortnight, such exhibition to take place in a special building to be provided by the Imperial Commission, and would suggest for consideration that such exhibition should take place in the latter end of May or the beginning of June."

On the motion of Mr. Turner, seconded by Mr. Laing, it was also resolved:—

"That British horticulturists would be willing to co-operate with the British Executive in exhibiting from time to time specimens of various plants and flowers which may be in season."

A PEEP AT THE WOODS IN ODD PLACES.

No. 3.—THE MANGROVE (*RHIZOPHORA MANGLE*).

"OH! there's the land!" I exclaimed, as on a bright, warm morning I was standing on the poop of a vessel talking to the captain and looking out for land. The man at the mast-head had sung out "Land ho!" more than an hour before; but the whole of this coast is so low, that it is scarcely visible until one is closely upon it. By this coast, I would have the reader understand that I mean the land at the bottom of the Bight of Benin, at the delta of the Niger, the coast where the chief part of the Palm oil trade is carried on. The place we were bound to was Bonny; and I may here notice that the daughter of my old friend King Peppel, of Bonny, recently arrived in Liverpool, to be educated in England. I need not tell my readers that the Princess Peppel is absolutely a negro; but I can tell them that her uncle, Anna Peppel, the King's brother, who was educated in England, wrote a most beautiful hand, and expressed himself in pure grammatical English, as a note requesting the loan of one of the ship's boats, and which was for some time in my possession, would amply testify. But to return to the particular morning on which the vessel I was in came in sight of the land. We were on the look-out for what is by seamen called the mouth of the Bonny river, but which is really only one of the many arms of the delta of the Niger, and on which the town or village of Bonny stands. Now, the land which we saw was in reality no land, but only trees, for the land here is so low, that in many places, indeed for enormous districts, it is only above water at low tide, and at other times covered or partially covered to various depths with salt water, thus causing a most extensive salt-marsh country. The whole of this marsh is most wonderfully and richly covered with vegetation, and that of a truly tropical character, often being of that fearfully rank and pestiferous nature which, to a mind acquainted with tropical growth, screams and howls aloud "fever!"—fever, that fearful foe which, whether coming as the well-known ague or the horrible putrid fever, is equally painfully dreaded. Almost all the edge of this district is clothed with the Mangrove tree, forming a most beautiful dark green edging, which, at a distance, presents all the appearance of a verdant grass-covered shore, but of a deeper tinge than grass usually possesses.

But we will not keep at a distance, for I want you to see with me these Mangrove woods more closely, for you will find them worthy of inspection; so blow, good breeze, and let us get over the bar, for this is a bar river, and its passage is often attended with a great amount of danger, and when we have seen the trees I will tell you of a curious and painful entomology relative to this said bar. Well, we are over; and now while the ship is

going up to the anchorage we will get into the Crew canoe alongside, and go away to look at the trees; but wait one moment whilst I tell you something about this canoe. It is made of a single tree, and, as it will carry four of us, is from 25 to 30 feet long, and about 2½ feet wide. It is tapered at both ends, each end being terminated by a kind of knob or knot, and both are formed nearly alike, at any rate quite sufficiently so to permit of the canoe being propelled either end foremost, though of course it will travel better with one end forward than the other. It is made of a soft kind of mahogany, and is first hollowed out with fire and then finished with a kind of chisel; it is round in the bottom, both inside and out, having no partitions, but merely in the longer and larger canoes sticks or pieces of wood placed across from edge to edge, having holes at each end, which correspond with holes in the sides of the canoe, and by passing bands through which each end of the cross piece of wood is firmly fastened to its corresponding side. The paddles, which are made of a hard, heavy wood, are long-handled and shaped in the blade much the same as an Apple leaf, though very much broader at the base—I mean where the leafstalk is inserted.

Now, let us embark and away to that beautiful grove of trees, and see what we shall find there. In our light canoe we soon reached the trees, and shooting at once out of the bright sunshine into the shade caused by the leafy canopy above us, came all of a sudden into comparative darkness. It was half tide, and looking around, on all sides huge stems of trees with curiously arched roots, disfigured by a thick coating of mud and slime, met the view, seeming like some strange wild dream verified and realised; for these Mangrove trees are tall, straight spars running up to the height of 80, 100, or more feet without a branch, and having roots shooting from the trunk which are frequently as much as 10 or 12 feet long before they meet the mud from which the tree grows, and of a thickness varying from 2½ feet to a few inches. The leaf is small, ribbed, with serrated edges, and somewhat similar to that of the common Alder of England, not at all resembling the general run of tropical foliage, but being more like that of the temperate zone. On the roots of these trees and on the mud at low water are constantly to be seen numerous little fish, which would seem to be almost amphibious, since they exist for a long period out of water, remaining in a perfectly lively state, and swimming merrily away when they again reach water. The pectoral fins of these little fellows are not placed vertically, as in most fish, but horizontally, and so closely together that, spreading out flat upon the mud, they answer the same purpose as the fore feet of animals, and the tail being likewise horizontal the creature is enabled to move on the mud by springing. The head is very large, in shape much like that of the gurnet, with enormous eyes; the fish is short and thick, being only from 2 to 2½ inches long, and altogether a most sinister-looking little fellow is this said fish. But I will now tell you of the custom I referred to when speaking of Bonny bar.

This bar swarms with ground sharks, the most terrible and voracious of all the shark tribe, and to give you some notion of their audacity, I will relate a circumstance which occurred during my stay in the river. Some Crew-boys, *i. e.*, natives of the Crew coast, were sent on shore with a canoe, which striking the beach with her bow they all jumped out to haul her up; the water where the steersman was reached half way up his chest, and whilst pushing the canoe to help the others, he threw out his leg to enable him to push with greater force; but during the time he was in this position a ground shark swam at him and literally severed the entire leg, thigh, and a portion of the hip from the rest of the body at one snap; the mangled remains of the poor fellow were immediately conveyed on board the ship to which he belonged, but to no purpose, for he died in excruciating agony in rather less than a quarter of an hour. This will give you some notion of the ferocity of this terrible monster of the deep. Now for the custom. The natives have the utmost fear and terror of these brutes, and to propitiate them, offer on the bar a yearly human sacrifice, thereby hoping to gain their favour in case of any of their canoes upsetting. A young man is chosen whose life, according to their ideas, has been the most exemplary; he then undergoes a year's probation and purification, and becomes *juju*—*i. e.*, sacred. On a certain day he is taken by the priests or *juju* men to the water's edge, clothed in a long white dress made of calico. He is now placed standing in the bows of a large canoe, carrying as many as a hundred paddlers, the canoe being also decorated with white calico. In each hand of the sacrifice a sword is placed, leaning against the corresponding

shoulder, and thus standing, his canoe commences to move a-head of a long procession of other canoes, all of which carry a greater or less number of drummers, who keep up the most diabolical noise with their drums and shouting. In this manner they proceed till they reach the bar, where they all pull up. Here the young man is stripped of all his finery, and forthwith plunges overboard and is straightway devoured by the sharks; the length of time elapsing between his plunge and the water becoming crimsoned with his blood, in consequence of his being torn to pieces by the water demons, being taken as an indication of the greater or lesser acceptability and propitiatory power of the sacrifice.

Let us now turn from this sad and degrading scene in savage life to the lovely works of nature, here to be viewed in all the wonderful luxuriance of the tropics. Here is seen besides the hard, solid, and heavy Mangrove (its specific gravity being greater than that of salt water), a species of bastard mahogany which is soft, light, and porous, though capable of resisting for years the action of the weather, and which is therefore used by the natives of this coast for the purpose of making canoes. Prominent amongst other trees is likewise seen a most splendid tree towering above its fellows in grandeur and majesty, but, alas! like many of the pretensions of the world, apparently but of little use, for the wood is very soft, porous, and spongy, utterly unfit for either building-purposes or any use where strength is required, and at the same time worse than useless for burning. The foliage is large, heavy, and succulent, as is generally the case with tropical trees and plants. The stem is large and noble-looking, several that I saw being at least 5 feet in diameter at a man's height from the ground; the branches are numerous and of proportionate size to the hole; and the whole tree is worthy of admiration as an object of beauty. The bark even of the trunk is smooth and very thick, and so soft as to be easily indented by a blow from a light stick. The first I ever saw I was amazingly struck with, and not being at that time nearly so well acquainted with timber, especially that of the hot climates, as I am now, I imagined that I had fallen in with a grand prize, for I was out with a wooding party and in search of a large stick of timber which I required for a roof-tree for a house. I called out to one of the hands who were with me to come and help me to cut down this magnificent tree, and not waiting till he came up, I thought I would set to work at once, for I carried with me a first-rate heavy American felling axe. Fancy my disgust on making my first underchop, preparatory to making the upper one and bringing out my chip, at seeing my axe-head sink almost out of sight, and finding myself literally splashed all over my chest and face with a thick, white fluid, exactly similar in appearance to milk, or the juice which exudes when the tender green shoots of the Fig tree are fractured. The man I called had by this time come up, and he was so tickled at the softness of the wood and its white fluid, that he began chopping away at the trunk, which was more than 3 feet in diameter. I therefore told him to cut it down, for I wished to see the thickness of the annual rings of so soft-grained a wood, for it was softer and mere spongy than the Lombardy Poplar, the specific gravity of which is about the same as that of cork; but I found after all the juice had exuded, and the wood became perfectly dry, that its specific gravity was even less.

Some of the creepers are most beautiful, especially those of the Pea tribe; whilst the eye is constantly attracted by a bright blue flash, amongst the trees and flowers, caused by a beautiful light-blue kingfisher darting from the bough of some bush through the vivid sunlight, as he pounces with unerring aim upon some luckless landerab, who has most imprudently strayed from his hole in the sand; and to complete the strangeness and discord of the scene, large flocks of grey parrots scream noisily overhead, passing over the river high in air; and huge iguanas and lizards, which here not unfrequently reach 5 feet or more in length, and are held sacred, or *juju*, by the natives, crawl lazily along in the shade of the bushes which come down to the shore, or sleepily bask on the sand, luxuriating in the mild warmth of the sun, whilst the thermometer stands at 98° in the shade.—A SURGEON.

BLEEDING OF VINES.—I have found a simple remedy of my own always unailing, which is to apply with a penknife a little cement made into a stiff paste to the bleeding part, first drying the wound with a rag; repeat the process in two or three hours' time and the bleeding will be effectually stopped.—NOVICE.

THE COST OF A STINK.

MANY cultivators have an affectionate liking for a stink. They imagine that a pungent stench given off by a dung-heap is a sure sign of goodness and strength in the manure, and, in fact, they estimate its value very much by the sense of smell. "Ike Marvel" hits off this idea very well in his well-written book, "My Farm of Edgewood," where he makes "Nathan," one of his characters, deliver himself of the following opinions, in conversation with a scientific gentleman. "Guess it's all right; smells pooty good, doan't it?" "Yes, but don't you lose something in the smell?" "Wall, d'n know; kinder hard to bottle much of a smell, ain't it?" "But why don't you compost it—pack up your long manure with turf and earth, so that they will absorb the ammonia?" "The what?" "Ammonia; precisely what makes guano act so quickly." "Ammony, is it? Wall, guanner has a pooty good smell tew; my opinion is that manure ought to have a pooty strong smell, or 'tain't good for nuthin'!"

The stench arising from manure is occasioned by the escape either of carbonate of ammonia, or sulphuretted hydrogen, or both. These gases are valuable for their fertilising properties, and they are at the same time injurious and poisonous to animal health and life, especially the sulphuretted hydrogen; it not only emits a very disagreeable odour, but is most pernicious to human health. It has even been known to cause death.

Who shall estimate the cost of the stink which at once wastes valuable manure, and injures the health of the cattle and human beings that are forced to inhale it? It would, perhaps, be practicable to make an approximate estimate of the money value of the ammonia that escapes. An ounce of carbonate of ammonia may be bought of a druggist for a few cents. Placed on a plate before a fire, it will, if pure, evaporate in ten or fifteen minutes. This may give some distant notion of what is being lost, hour after hour, as the sun lets down his rays on the manure-heap, stables, and sheds, in the warm weather of spring and summer. Even in winter the loss is very great.

There is no excuse for this extravagance, because it is so easily prevented. The free use of gypsum, earth, and other absorbents, about stabling and manure-heaps, will prevent waste, and preserve health. In view of a probable visitation of cholera in the coming season, the cost of a stink may be terrible. Not only in towns and cities, where large numbers of persons are collected, but even in country places, and on every farm, this nuisance ought to be abated, and every possible precaution taken for the maintenance of the public health.—(*Canada Farmer*.)

WORK FOR THE WEEK.

KITCHEN GARDEN.

As the principal summer crops are now planted, attention will be necessary to keep up a proper succession of vegetables. To do this requires some forethought, and it is scarcely possible to lay down rules for guidance considering that so many circumstances are involved. The wetness, or the reverse, of particular localities, and the texture and capacity of soils for resisting drought, are, however, the principal causes which require consideration in keeping up a continuous supply; such information, we need not say, is only to be obtained on the spot by actual experience. *Broccoli*, this is an excellent time to make a principal sowing of all the late and spring *Broccolis*, such as Portsmouth, Sulphur, Dwarf Late White, Knight's Protecting, and Somers's Late White. The last is one of our very latest *Broccolis*, it succeeds all others, and forms a link between the late spring *Broccolis* and the hand-glass *Cauliflowers*. Proceed with the pricking out of young seedlings, also young seedlings of Brussels Sprouts, Savoys, &c., as they become large enough to handle, likewise *Celery*. Some of the most forward of the early-sown *Cauliflowers* and *Cabbage* plants will now be in a fit state for final transplanting, which should be done at the first favourable opportunity, and in the event of dry weather prevailing, they must be kept well supplied with water. *Leeks*, transplant from the seed-bed as soon as they are large enough in rows 18 inches apart, and 9 inches plant from plant; the soil cannot be too rich. *Lettuces*, tie up for blanching a few of the largest Bath Cos that have stood through the winter; these should be kept well supplied with water in order to induce rapid growth, which is essential to the production of that tender crispness so prized in this variety; keep up successional sowings. *Peas*, continue to earth up and

stake, but previous to earthing-up let them be well thinned out if too thick. This is a more important consideration than is generally imagined; we often sow thickly in order to insure a crop, but if all that come up are left to stand they will grow, certainly, and bloom, and produce a number of small pods, but after a gathering or two they are done; whereas if well thinned out we get a greater weight of finer pods, and they will continue to grow and bloom so as to produce a succession. One of the chief merits of that excellent Pea the British Queen is that it continues to produce in succession like a Kidney Bean, and why is this, but because being a large strong-growing sort cultivators are accustomed to give it so much more room? The same principle is applicable to other varieties. *Potatoes* which are coming up should have the ground well and deeply forked between the rows. *Radishes* will now require to be sown very often in small quantities. *Scarlet Runners*, sow full crops of these and of *Dwarf Kidney Beans*. *Turnips*, keep up successional sowings.

FRUIT GARDEN.

Proceed with the moderate disbudding of Peaches, Nectarines, and Apricots. Plums will now require a share of attention in this way by removing all the foreright shoots from the young wood, taking care not to leave more than can be kept well nailed in without crowding. Continue to remove all superfluous wood from Vines. Stir the surface of the earth well among Strawberry plants; have ready a well-prepared piece of ground for planting out all the forced Strawberries as they are brought from the forcing structures; they will produce strong runners for the next year's forcing, and the crops the next year from those left in the ground will be superior to any grown in the usual way; the plants will require several applications of water after planting to give them a fair start.

FLOWER GARDEN.

The late rains will be favourable for recently-planted shrubs, and now that the soil is damp, no time should be lost in completing whatever in the shape of planting or bedding-out young nursery stuff remains on hand. If not done previously the herbaceous ground should now be well cleaned and neatly raked over; this cannot well be done sooner in consequence of many species being late in vegetating. Fill up vacancies either from the reserve ground or by sowing annuals in the intermediate spaces. Large plants of some genera, as *Phloxes*, *Asters*, &c., generally throw up too many flowering shoots; where such is the case thin them out at once, so as to obtain not only fine heads of bloom, but increased strength in the remaining shoots, to enable them to need less assistance from stakes. *Hollyhocks*, for late blooming, may still be planted, as it is better, where they are grown extensively, to plant at two or three times so as to insure a succession of bloom. These showy plants are admirably adapted for planting in long lines and parallel to straight walks, walls, &c., where they produce a grand effect. One of the principal points in pleasure-ground scenery is the beauty of the turf, which should be kept at all times closely cut if perfection is aimed at, but more particularly at this season, when by frequent mowings, cutting the grass as low as possible, the foundation of a close-bottomed turf will be laid for the season. On poor, sandy, or rocky soil the verdure must be maintained by occasional waterings with liquid manure, or dressings with guano, &c.

GREENHOUSE AND CONSERVATORY.

As soon as the cold frames and pits become clear of hedging plants they should be occupied with young stock of hardwooded plants, for the summer growth of which they are better adapted than large houses. Such places will also be found suitable for dwarf *Lobelias*, *Salvia splendens*, *S. gesneriflora*, and many other things which are generally grown for flowering in the conservatory in summer and autumn, indeed most plants which require only a moderate temperature will be more manageable here and thrive better than in lofty houses with double the attention. As early-flowering New Holland plants go out of bloom they should be treated in the way most favourable to secure compact growth, placing them in an airy part of the greenhouse. When the buds have fairly started will be the time for shifting such as require more pot-room, as they can then be kept somewhat close for a fortnight to encourage a free root-action without incurring the risk of the buds breaking scantily. No tribe of plants is better adapted to keep up a constant display in the conservatory than *Azaleas*. Many of the Indian varieties are remarkable for brilliancy of colour, whilst the hardy Belgian kinds are favourites on account of the agreeable fragrance. The treatment recommended for the *Camellia*

to cause it to produce flowers in winter, is in the main applicable to the Indian Azalea. Forcing into wood betimes in the spring, a trifling amount of check to induce it to form flower-buds, and partial rest for a considerable time before excitement, are the main features requiring attention. The Azalea, however, will stand more heat than the Camellia and less shading. Those intended for flowering next January and February should be forced into growth without delay. Let Ericas and the various hardwooded plants inclined to grow straggling be frequently stopped whilst growing freely. Let all the exhausted stock of Cinerarias be cut ever successively in order to favour the development of suckers for next winter's flowering. They may be cleansed with tobacco if foul, and removed to a cold frame until the end of the month. Shift on Balsams and other tender annuals. Pot off Achimenes, and repot, where necessary, Gloxinias, Sinningias, &c. Put in a stock of Chrysanthemum cuttings for autumn display.

PITS AND FRAMES.

Encourage Cucumber plants for the ridges, let them be kept near the glass where they may have abundance of air and light to cause them to become sturdy, stiff plants for turning out. The ridge should be placed in a sheltered situation. The method of preparing it is as follows:—Dig out a trench about 1½ foot deep and 3 feet wide, fill up with well-fermented materials to 2½ feet in height, cover the whole with about 1 foot of light rich soil, then mark out places for the plants at 4 feet apart, on which place the hand-glasses; turn out the plants when the mould becomes warm, give them a little tepid water around the ball to settle the earth, and cover with the glasses.—W. KEANE.

DOINGS OF THE LAST WEEK.

If "changes are delightful," then may we islanders be happy and contented. Up to Friday week the weather was what might be expected in June, but a closeness in the atmosphere and a falling barometer told us that ere long rains would come, and they came so softly and warm on the Saturday afternoon, that all bedding plants, whether under glass, or mats, or canvass, planted out or potted, were freely exposed to its influence, the rain with the warmth being so much better than any application from the water-pail. One great advantage of the Cranston system of building glass houses, would be the possibility of so managing the planes of glass that they might be made to stand vertically when so desired. It is almost impossible to secure all advantages by any one mode of structure, or any one mode of conducting operations. He is the prudent and the wise man that makes the most of his circumstances, without vainly sighing after other circumstances and appliances which he cannot obtain. We should be afraid to state the very little that the simple fixed roofs of our orchard-houses cost, as if let alone they would have been less than Mr. Rivers stated in his "Orchard-House;" and that was cheap enough in all conscience. That book and the curate's five-pound greenhouse, amazingly tickled the public, who had come to the conclusion that the smallest glass house must cost them at least from fifty to one hundred guineas. In running a good chance of rheumatism from luxuriating in the delightful rains of the Saturday afternoon, and having everything that would stand it freely exposed to such sweet watering, we could not but regret that the fixed squares of the orchard-house could not all stand up vertically to allow the warm fluid drops to fall all over the trees and plants in the house. As the next best we could do for them, we had them syringed, that they, too, after so much fierce sun might know something of the moist balmy air that enveloped everything out of doors; but the syringe at best is only a compromise for the gentle rains. On any other night but Saturday we might have left the most of things uncovered; but, though warm, the veering of the wind to the north told us the rains might become colder, and then there would have been much shutting up and covering on Sunday morning. All covers, therefore, were replaced; and it was as well, for on Monday morning we had a severe frost, with ice the thickness of the sixteenth of an inch on shallow water, and leaves of Geraniums, &c., that touched glass or cloth coverings were slightly blackened, though no injury was done to the plants. That frost, as we expected, has been followed by heavy rains, hail, sleet, and snow, just sufficient to remind us that the weather of July is not to be expected in the first days of May.

KITCHEN GARDEN.

Planted-out Cabbages, pricked-out Cauliflower for succession,

made the nets more secure where seeds of vegetables were sown. Scattered wood ashes on the ground to keep slugs, &c., at bay. Our netting is too small to let birds through; but though raised above the ground and fastened at the sides, Radish seed, &c., near the sidea can be obtained by their sitting on the stretched net and sending their bills through the openings. All the Peas, sown three times, having gone to feed the pheasants, planted out a number of rows from semi-circular drain-tiles, the Peas being from 2½ to 3 inches in height, staking them at once as soon as planted. Of course, this takes up a deal of time, but we hope we shall thus secure a crop.

A kind correspondent tells us how he secures all his crops from all kinds of birds, and two-footed and four-footed game, by a number of "trained cats," and of this we will have something to say ere long. By his system, with plenty of cats, the crops of vegetables and fruit may be pretty well secured, even though the game have access to the garden, or to its immediate precincts, as the game must be stupid indeed to let the cat catch them when so much under control, whilst its seen presence and activity, and freedom of motion over a defined space, will frighten them and keep them at bay. In times gone by we derived, as respects birds, similar advantages from hawks that could not fly far, until the birds became knowing enough to perceive the hawks could not catch them, unless they were culpably careless and stupid.

We noticed a few flowers on Dillistone's Early Peas out of doors open on the 1st of May. These, too, had been transplanted. Pods are swelling on some of the same age planted out in the front of the orchard-house, and allowed to run over the ground as they like. Tom Thumb, in pots, in the earliest orchard-house, and from plants turned out, yielded a good gathering on the 1st, and might have been gathered earlier, and the plants are densely clothed with pods swelling fast. We never had Tom Thumb so strong, and it is just possible we may have used Sutton's Tom Thumb in mistake; but as there is a row of that in the late orchard-house just coming into bloom, we shall be able to perceive if there is much difference.

All Peas under glass require plenty of water, and a syringing overhead also does them good, or they are apt to eat harder than when they are grown out of doors. A little clear soot water also improves their crispness. Beginners that grow Tom Thumb should bear in mind to gather before the pods are at all large, as the young peas lie flat in the pod. In answer to an inquirer who is an epicure in one thing, and that is pea soup, and who would have it of the Green Pea flavour every day in the year if he could, but has only a little heated greenhouse to help him, we would advise his sowing boxes of Peas in his house from October to May, thickly, just as he would do Mustard and Cress, and cut them over when 2 inches high, and slice the plants small, and use them as Green Peas. These make a capital substitute for those who are so fond of the young Pea flavour.

Unlike Peas, we always think *Dwarf Kidney Beans* are sweetest and crispest when grown under glass, unless, indeed, when gathered out of doors in warm showery weather in July and August. A row in pots is knotting for bloom in the orchard-house, and they will enable us to clear them all out of the Peach-house, and also from a pit where they have been long bearing. Sowed a lot in boxes and in five-inch pots, five Beans in a pot, which will be transplanted as they are without breaking the balls, except a little disengaging of the fibres outside.

Potatoes.—We planted a lot more, but were stopped by the heavy rains, which made our ground anything but kindly to work. Drew a little earth over the forwardest tops out of doors in case we have another Monday's frost. The most of our supply for the table as yet has come from pots; but two frames of two lights each are ready. Took the frames off them, and protected by hurdles placed over them at night, and merely resting on pots set at back and front. Gave plenty of air, except in these cold nights, to a wide earth pit where the tubers at one end are about fit for use. A little litter, leaves, and rotten dung were placed below the frames, and a little soil on the surface, and in these half-hardy annuals will be set from Melon-frames or pricked out, and at least one frame of good stout plants of early Celery. A great number must be pricked out, with a little shelter out of doors, as soon as we can get time and opportunity. There is no danger of early Celery bolting if it is never allowed to have a check. It suffers more from being checked before it is finally planted-out than is generally imagined.

This moving about so easily gives a great advantage to frames

over pits, as what was grown under them may be protected by something more simple than glass, and the glass and box be removed for another purpose. The glass that is used for Carrots, Turnips, &c., may be dispensed with in a few days, and, therefore, though fixed roofs are by far the cheapest, we could not get on well in limited space and with limited conveniences without moveable frames and sashes. We would be afraid to say how often some of our two-light boxes have been moved and made to serve different purposes in a twelvemonth. A good deal of the same system is pursued with glass that covers a brick pit, the sashes being placed over earth and turf pits, with merely a rail on each side on the ground to prevent the sashes resting on the earth. Sowed more Onions and the main crop of Beet, Salsafy, and Scorzonera. The Onions succeeded the Celery, which was taken up and packed in an out-of-the-way corner in a heap of furnace ashes, where it has kept very good. We think it keeps all the longer when lifted with good balls in March. A late bed that was never earthed-up, thus treated, and well banked with ashes, will come in well for soups before the earliest of this season's sowing comes in. Though bolted a little, if white, it will do for that purpose much better than what is young and green. Early Celery, however, may be had very early if there is room and labour power. More than half of the difficulties of the gardener in half the places in the country arise from so much being expected, and from such little means and resources.

FRUIT GARDEN.

With the exception of syringing a single tree with quassia water, and taking out and thoroughly washing a small tree in a pot, our work in the orchard-house has been merely keeping a look-out for insects, caterpillars, &c., a few turned-up leaves appearing on a forward Plum tree. For want of anything more handy we put as much soot as could be held between the thumb and three fingers on each tree pot in the orchard-house, and watered it in with a rose watering-pot. As soon as we have time and opportunity we will water one-third of the ground with drainings from the dunghill, getting over all the ground at three times, at something like a week's interval.

Expecting these lean-to orchard-houses to be continued, we made a small border in front of one of them (the earliest), and planted Vines 5 feet apart, so as to let in light to the back wall. These, cut back well, are breaking very strongly, and showing many bunches at every eye. A walk goes in front of the house, and our intention was to have made the under part of the walk some day into an extended border, and convert that orchard-house into a late vinery, as our other houses are rather flat-roofed. With the steeper roof of the orchard-house late Grapes could be kept well into April, and these could be succeeded by early ones in a pit. Of course we are aware that ultimately these Vines will have to be sacrificed, or the plants as standards and dwarfs on a trellis in front of the house will have to be done away with, except in the openings between the Vines. However, it is easier taking out than putting in. Any simple mode of heating would keep such a house of Grapes safe in winter, and such kept Grapes will ever be more economical than early forced ones.

Peach-house—Strawberries.—Tied-in a number of shoots, and will require an evening or a morning to do so effectually, and expose the fruit more thoroughly to the sun and air. This house must also be more or less thinned of Strawberry-pots. For early work we set the flowers here to a great extent, and move them elsewhere to swell and ripen. Most places in permanent cropping are becoming too shaded for this purpose, and therefore we shall fill some lights in a pit thinly, taking them from the orchard-house where they are showing bloom, but where they would be too dark to set well and have good flavour. The flavour question renders it now unsuitable to gather fruit from under the shade of Vines. We obtained some fruit from the back of a Cucumber-pit, fully exposed on a shelf to the sun; but we have removed the shelf, as the moisture was too much for the flavour; and if the air was all shut off in a cold night some of the ripest were apt to damp in places before the berry was fully ripe all over. It always goes against the grain to be under the necessity of gathering a basket of forced Strawberries shortly after the pots have been watered, as they neither carry so well nor eat so well. At the back of pits, such as those filled with Beans, there was no fear of damping, but being close to the wall on a shelf there was such danger of hardening and burning the fruit in the late bright weather, that we ran a brush coloured with soot water along the wall above the plants, to lessen the reflection of the light and heat. There will be less likelihood of this in a pit filled with Strawberries, and the

sun has now gained such an altitude, that there will be plenty of direct light to set, swell, and flavour the fruit.

As we fear we shall scarcely have enough of Strawberry-pots, most likely we will take up a lot of young plants, planted on a border on purpose, now throwing up their trusses. Part of these we shall lift with balls, and plant in a bed with heat below them, and part we shall pot singly in six-inch pots, and plunge the pots in a mild hotbed out of doors, with the tops of the Strawberries exposed to encourage roots reaching the sides of the pots before the plants are in bloom. We may calculate on its being fully five weeks before we gather fruit out of doors, and though the last-planted-out plants look well, we notice that some that have been two and three years in the ground are patchy from the excessive wet of the winter and the frosts in spring. We may here also add, as respects forced Strawberries, that though they like a variety of manure waterings after the trusses show, we prefer clear water after the berry begins to colour.

Fig-house or Pit.—We went over the most of this in a shady day, exposing the fruit to the light to a certain extent, as a little shade from the leaves prevents burning and scorching, removing lots of extra shoots, and stopping the points of those intended for the second crop. When much of this has to be done, let us advise beginners to put on some of their east-aside clothes, and partly, at least, to cover their faces and hands. Much of this work had to be done by getting beneath the roughish wildish bushes with face, brow, and hands pretty well exposed to the droppings of the milky juice, and notwithstanding our care, and a state of skin which rarely festers from cut or tear, the viscid juice managed to raise some ugly blisters on our brow and hands. Of course, when trees are trained to a wall or trellis, there is less likelihood of the juice hurting the operator. For ease in managing and fertility in cropping we prefer under glass the somewhat rough natural style of growth, with the tying of a shoot now and then, so that it may not rob its neighbours of light. We mention about the juice the more particularly because a lady gardener last season had her hand spotted and blistered. The bad effects generally soon pass away, but the juice leaves ugly stains on black cloth and black silk, and indeed on cloth of all kinds.

Vineries.—We have had a good deal of work in these of late, thinning Grapes morning and evening, regulating the second vinery, and commencing thinning bunches, and regulating and thinning shoots in the late vinery. In the second vinery went over several times in the sunny days the bunches in bloom, slightly shaking, brushing, or drawing a clean dry hand over them, beginning at the top and passing along the bunch. We have found nothing to equal the dry hand in a sunny day, and a temperature of from 70° to 80° and onwards. Where pollen is at all scarce, a piece of white paper may be held in one hand below the bunch, and thus the pollen of one kind plentiful in fertilising-dust, will help to set another kind where the pollen is deficient. By such simple means we have rarely failed in setting Dutch Sweetwater, Black Morocco, Black Damascus, and the different kinds of Muscats when we grew them. A man may thus go over the bunches of a large house in a short time. On large bunches of Muscats this may have to be done several times, as the shoulders will sometimes be in bloom before the points.

In the late vinery, we managed in the dull day of Tuesday to raise Vines nearer the glass, and to stop most of the fruiting-shoots. It is of little use stopping too soon when growth is desired, and the Vines have more room than ours. These Vines had been suspended about 2 feet or more from the glass, have now been raised to from 15 to 18 inches from it, have broken every eye almost, and never had a syringing, and possibly will never have water on the leaves and fruit until the Vines are washed after the fruit has been cut. Our water is so far from pure that we lessen syringing. We have just cleared this house of Pelargoniums, and not too soon, as they were becoming a little drawn, and we must keep the conservatory a little closer in consequence to suit them for a few days.

ORNAMENTAL DEPARTMENT.

On this we can say nothing further this week, than that we have been very busy with bedding plants, giving them a little protection, in fresh arranging plant-houses, conservatory, &c., removing lots of Cinerarias and Primulas, taking Camellias, Epacris, &c., done blooming, to the vinery; and in placing Azaleas where they will be best seen and a little shaded, Pelargoniums where they will have more light, and Fuchsias where they can have more light still. Many things will be freshened up a bit, and be brought back again when in full

bloom. Potted-off Balsams, Amaranths, &c. The change in the weather enabled us to do much work, which we could not attempt in such scorching days, when from morning to night there was a continuous demand on the watering-pot and the syringe. One thing required more labour and material—the furnaces; when the bright sun left us we were obliged to fall back on more coke and coal.—R. F.

COVENT GARDEN MARKET.—MAY 5.

VERY few remarks are called for this week in connection with our market, except to notice the large quantities of Cucumbers now raised, we may safely say 50 per cent. more than will supply the demand; and the importation from Holland having just begun, it will tend to lower the prices still more. Continental supplies are well kept up, and now include Cherries.

FRUIT.

	s.	d.	s.	d.	s.	d.	s.	d.
Apples ½ sieve	3	0	5	0	Melons..... each	8	0	12
Apricots doz.	0	0	0	0	Nectarines doz.	0	0	0
Cherries lb.	3	0	5	0	Oranges 100	6	0	12
Chestnuts bush.	0	0	0	0	Peaches doz.	0	0	0
Currants, Red ½ sieve	0	0	0	0	Pears (dessert) . . doz.	10	0	15
Black do.	0	0	0	0	kitchen doz.	0	0	0
Figs doz.	8	0	15	0	Pine Apples lb.	8	0	12
Filberts lb.	0	0	0	0	Plums ½ sieve	0	0	0
Cobs 100lbs.	0	6	16	0	Quinces ½ sieve	0	0	0
Goosberries quart	3	0	0	0	Raspberries lb.	0	0	0
Grapes, Hothouse. lb.	10	0	15	0	Strawberries oz.	0	6	1
Lemons 100	6	0	10	0	Walnuts bush.	14	0	20

VEGETABLES.

	s.	d.	s.	d.	s.	d.	s.	d.
Artichokes each	0	3	0	6	Leeks bunch	0	3	0
Asparagus bundle	3	0	8	0	Lettuce per doz.	1	0	1
Beans, Broad. bushel	0	0	0	0	Mushrooms pottle	1	0	2
Kidney 100	1	0	1	6	Must. & Cress, punnet	0	2	0
Beet, Red doz.	2	0	3	0	Onions bushel	4	0	6
Broccoli bundle	1	0	1	6	Parsley sieve	2	0	3
Brus. Sprouts ½ sieve	0	0	0	0	Parsnips doz.	0	9	1
Cabbage doz.	1	0	2	0	Pears ½ sieve	5	0	0
Capisious 100	0	0	0	0	Potatoes bushel	2	6	4
Carrots bunch	4	0	8	0	Kidney do.	3	0	4
Cauliflower doz.	2	0	6	0	Radishes doz. hands	0	6	1
Celery bundle	2	0	3	0	Rhubarb bundle	0	4	0
Cucumbers each	0	4	1	0	Savoy doz.	2	0	3
picking doz.	0	0	0	0	Sea-kale basket	1	6	2
Endive doz.	2	0	0	0	Shallots lb.	0	8	0
Fennel bunch	0	3	0	0	Spruce bushel	8	6	0
Garlic lb.	1	0	0	0	Tomatoes ½ sieve	0	0	0
Herbs bunch	0	3	0	0	Turnips bunch	0	4	0
Horseradish bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0

TO CORRESPONDENTS.

** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

MADRAS RADISH (*H. M. K.*).—It is a variety of, but the same species as *Raphanus caudatus*, or Tailed-podded Radish. The pods, however, are very much shorter. The Madras Radish has assumed an altered form, probably from being long cultivated in a different climate. *R. caudatus* is a native of Java, where its pods attain always a length of between 3 and 4 feet, trailing on the ground. The natives call it Moogree.

EUPHROM ODOBATISSIMA (*Halton*).—We know of no such plant. *Euphonia hirtelloides* is the nearest name at all like it, and the plant to which it is applied belongs to the Natural Order Rosaceae, and is a native of Brazil.

PEACH TREES SHEDDING THEIR BLOSSOM (*A. H.*).—If the wood was strong, most likely the want of ripeness has something to do with the flowers dropping. Extra dryness, or extra wet would also cause it, and so would extreme dryness followed by a thorough watering at once after the buds were swelling. We knew of a similar case years ago, where every blossom fell from want of air during a bright sun, but there is no reason for supposing that to be your case.

GLADIOLUS CULTURE (*J. J. S.*).—The season is now too far advanced to make any observations on the Gladiolus to be of service, but if you will look at page 101 of the present Volume, you will there find all the information you need.

GROWING TOBACCO (*J. Farr*).—We have said all that we know upon the subject. We should have no hesitation in growing as much Tobacco as we needed for fumigating our own plants; though doing so might not be strictly legal.

PELAGONIUMS RUNNING TO LEAF (*Amateur, Totness*).—The running of your young Pelargoniums to leaf is due to your liberal treatment, which is good for old plants, but large pot-room and rich compost are apt to cause a preponderance of shoot and leaf. A less rich compost, and not too much pot-room, are better for young plants. It is now late to stop them, but you may do so, but do not cut them back to one eye or they will bloom very late and be poor. Stop them, therefore, now by merely pinching out the points of the shoots, and they will, if nicely trained, make nice plants for blooming in July and August. They will do better in a cold frame after May, and if in eight-inch pots will not require potting, but give weak manure water once or twice a-week. Afford abundance of air, keep near the glass, and guard against green fly.

ESCHYNANTHUS SPLENDENS CULTURE (*W. H. W.*).—It requires a compost of very fibrous brown peat two-thirds, and one-third very turfy loam broken with the hand; to this add one-sixth each of charcoal broken from the size of a pea up to that of a hazel nut, and silver sand, and thoroughly incorporate. Good drainage is essential, not less than one-fourth the depth of the pot. The plant should be trained as a bush, putting in stakes 2 feet or 3 feet in height, and after the shoots reach that height allow them to hang loose. Shoots will be produced plentifully from the bottom, and these must be staked for the plant, so far from being a climber, is of pendent habit, looking extremely well as a basket plant. Do not stop the shoots, nor cut away any of the old wood, except where dead, but when the shoots reach the tops of the stakes allow them to hang loosely as already stated. In spring encourage growth by an increase of temperature and a constantly moist atmosphere, being careful not to over-water and yet afford a plentiful supply whilst the plant is making new growths; but after the growths are made keep rather dry at the root, and expose to light and air, for on the well ripening of the wood depends the flowering. In winter the plant should be kept dry at the root, and have a dry atmosphere. A temperature of 50° in winter is ample, the soil and atmosphere being dry, and, when growing, a temperature of from 65° to 70° by night, and 85° to 90° by day with sun, is desirable. It blooms from the points of the shoots and the axils of the leaves at the upper part of the shoots.

ROSES AFTER BLOOMING (*Reader*).—The plants that have been forced and of which the blooming is over should be continued under glass, well hardening them off before exposing them out-doors, and then plunge them in an open situation. The shoots may be reduced to eight leaves if longer, and they may grow at will until September; then put the plants if required, pruning in the end of October or early in November if you intend to force them. They would be better of a year's rest, or if forced in alternate years.

PELAGONIUMS, STOPPING (*Idem*).—If you stop the shoots of the Pelargoniums now showing for bloom, they will flower at a later period, but not so well as if they were left to themselves, for this is their natural season of bloom. Your stopping will retard the bloom beyond that. They will, however, bloom well.

PLANTS FOR BEDS (*G. H.*).—If you merely wish to fill-in the open spaces between the permanent plants, then you could not have anything better than these bedding plants which delight or thrive in dry, hot, poorish soil. Of these, *Petunias* do well, as also do the different varieties of *Tropaeolum Lobbianum elegans*; *Gazania*, *Cineraria maritima*, and *Geraniums* would do well, but the soil would not suit *Verbena*, *Calceolarias*, and *Lobelias*. Of permanent plants, *Camellia ecclesiis*, *Astragalus aurantiaca*, which you have; *Anemone cruenta*, *Aquilegia Veracensis*, *Asclepias tuberosa*, *Erodia congesta*, *Cistus formosus*, *C. roseus*, *C. Ledou*, *C. purpureus*, *G. Indaniferus*, and *C. algarvensis*; *Ceanothus montana*, *C. Daphn. caecorum*, *Dielis spectabilis* and *D. cucullaris*, *Dracocephalum*, *Erodium Richardi*, *Euphorbia portlandica*, *Galium græcum*, *Limon flavum*, *Gladiolus byzantinus* and *G. comonensis*, *Hemerocallis fulva*, *Horminum pycnanthum*, *Lagarus ovatus*, *Linum mononum*, *Eriogonum macrocarpa*, *C. taraxacifolia*, *Pancretium maritimum*, *Phlox grandiflora*, *Plumbago larpenata*, *Salvia argentea*, *Scabiosa grandiflora*, *Stachys lanata*, *Trichonema tuberosum*, *Verbascum* in variety, *Zephyranthes candida* and *Z. rosea*. These last are mostly herbaceous perennials, and may be had as plants at moderate prices from most nurserymen.

HOLLYHOCK LEAVES SPOTTED (*W., a Subscriber*).—The leaves are badly blotched, and this, we think, from frost. There are also traces of a fungus or mildew, and this if the same as we were some time ago pestered with, will yield to a dusting of the leaves with fresh slaked lime. Water in summer with manure water. We applaud your soil is light.

BLACK ANTS (*A Constant Reader*).—Sprinkle guano, or pour ammoniacal liquor from the gas-works over their nests and runs.

GOLIATH STRAWBERRY (*J. H.*).—It is usually called Kitley's Goliath, and can be supplied from Mrs. Nicholson's, or any other nursery where Strawberries are cultivated for sale, and are advertised in our columns.

HOLES IN INDIAN-RUBBER TUBING.—The Indian-rubber tubing of an American garden engine, which has been in use for two or three years, is wearing in several places into a multitude of small holes, which are rapidly increasing by the jet. Is this normal? Is it owing to the action of the water? Could it have been prevented by any mode of taking care of the tube? Ought it to be unsewered and stowed away during winter when not in use?—P. H. G.

PLANTING GERANIUMS IN ROSE CIRCLES (*W. M. S.*).—Planting Geraniums in the small circles in which there are standard Roses, will impoverish the soil, and interfere with the well-being of the Roses; but if you keep the soil rich by top-dressings of manure and copious manure waterings, you may have plants in the circles without injuring the Roses to any considerable extent.

ACACIA DEALBATA UNHEALTHY (*A Lady Subscriber*).—We think that the brownness and falling of the leaves must be caused by the soil not being kept sufficiently moist, or bad drainage would produce the same result. The ill appearance of the foliage might also arise from a deficiency of light and air in proportion to the heat. The growths, judging from that sent, are very weak. Is the house well ventilated, no plants on the roof overshadowing the Acacia, the soil free, suitable, and well drained, and the temperature not more than sufficient to keep out frost?

PLANT FOR WALL OF CONSERVATORY (*Idem*).—Of the plants which you have, *Plumbago ægyptiaca* would be the most suitable. We do not know of any more suitable for a hot wall in a conservatory than *Bougainvillea speciosa* and *Luculia gratissima*.

WAGES AND PRICES IN AUSTRALIA (*John Larrance*).—We have made inquiries of a reliable authority, but we shall not have replies until at least six months have passed.

SYRINGING PLANTS IN TOWN GARDENS (*R. W. S.*).—Syringing the foliage of plants in town gardens is very desirable, as it frees the leaves of dust and sooty deposits to a great extent, and tends to lessen the evils consequent on the excessive evaporation or exhalation to which plants in towns are liable from the dryness of the atmosphere. A good syringing, therefore, in the evening of hot dry days will, in a great degree, neutralise the bad effects of a town atmosphere on plants.

TULIPS COLOURLESS (*Sidmouth*).—We can only attribute the want of

colour in the Tulips to the soil being very rich, made so most likely by heavy dressings of manure. One thing is certain, the plants are in that exceedingly vigorous condition which induces double flowers. Would you kindly favour us with particulars of soil and cultivation practised, and the name of the variety? Surely it is of the Parrot section, and that known as Belle Jaune, or Tulipa lutea major.

DOUBLE VIOLETS (*R. R.*).—The flowers were too much withered to form any opinion of their merits. Could you not send a plant for the Floral Committee to examine and report upon?

NAMES OF PLANTS (*P. J. Newton*).—*Passiflora princeps*. (*G. Smith*).—*Asplenium trichomanes*, *Hymenophyllum Wilsoni*, *Fegatella conica*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 5th.

DATE.	BAROMETER.		THERMOMETER.				Wind	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 29	29.821	29.781	48	32	52	50½	N.E.	.10	Cold easterly wind; overcast; rain.
Mon. . . 30	29.746	29.624	50	35	50½	50	N.E.	.00	Overcast; cold and boisterous; fine but cold at night.
Tues. . . 1	29.481	29.443	44	34	49	50	N.E.	.01	Overcast; cloudy and cold; rain.
Wed. . . 2	29.662	29.463	42	32	50	49	W.	.14	Cold and overcast; slight but very cold showers; rain at night.
Thurs. . 3	29.570	29.554	52	36	50	48	W.	.10	Rain; densely overcast; thunder, with some hail; fine; frosty.
Fri. . . 4	29.869	29.727	48	35	51	49	W.	.01	Frost early; fine with slight haze; masses of white clouds; fine.
Sat. . . 5	30.133	31.040	60	39	52	49	S.	.14	Clear; cloudy, with cold though S. wind; fine at night. [frosty.]
Mean	29.737	29.654	9.14	32.96	50.64	49.35	..	0.40	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

RAILWAY CHARGES.

Amongst the many who have supported Mr. Hinton's indefatigable exertions to obtain a reduction of charges, I have failed to observe that any poultry association through any one of its officers has given any advice or opinion upon this important question. Now, I think that opinions should be obtained as far as practicable from different poultry committees, or, to bring the matter into a smaller compass, I should say through the secretary or chairman, who themselves are able in many cases to give a vast amount of information upon this subject. My own opinion is that all poultry committees throughout the kingdom should take up this matter with a determination to use their best endeavours to obtain a uniform tariff of railway charges. I am led to believe if they did, that in many cases of failure success would attend their exertions. It really is a matter equally for the full consideration of the promoters of shows themselves as it is for exhibitors; and I may suggest to Mr. Hinton the consideration of obtaining committees' opinions, and further, in forming deputations to any railway company, the desirability of selecting gentlemen who represent some of the principal shows—say one-half should be composed of exhibitors and one-half of promoters. If some such plan as this were adopted I feel assured that success must attend the labours of those who are desirous of seeing this evil of excessive railway charges reduced to a uniform scale. I can only add, I should be at all times pleased to assist in promoting such a result, and to give any information desired upon a subject which all poultry-keepers must feel a great interest in.—*PHILIP WARREN, Hon. Secretary of the Hampshire Poultry Show, Southampton.*

PROPOSED POULTRY SHOW IN GLOUCESTERSHIRE.

It has long been a matter of remark amongst all poultry exhibitors that so few poultry shows have been held in the south of England. This remark I have repeatedly seen expressed in the columns of your Journal by correspondents. To these correspondents and the southern breeders of poultry I would address this letter, as concerning them and their interests most nearly.

I propose with their assistance to institute a poultry show in a town of Gloucestershire. The circumstances connected with this undertaking I will briefly but plainly class under headings as follows:—

1st, There is a sum of money required, say £40, to begin with. This, with the amounts received for entries and the admission of visitors, will be sufficient to allow of tolerably liberal prizes being offered, and to pay the expenses of a country show, such as I would propose.

2ndly, I will undertake the whole of the correspondence and arrangements of this proposed show, and I have no doubt as to its success if proper care be exercised.

3rdly, It would be well if those who feel inclined to assist me in the attempt would communicate with me at the address below as soon as possible. With their assistance I have no doubt this project of a poultry show in Gloucestershire can be brought to a pleasant and most successful issue, although at first it appears an arduous task.—*W. B., Journal of Horticulture Office, 171, Fleet Street.*

HOMŒOPATHIC TREATMENT OF DISEASE IN POULTRY.

THE German "learned" poultry faucier, Dr. Gauss, a follower of Nolan in many respects, treats at great length on disease in poultry. It is quite a study, but in several cases, after enumerating all manner of remedies, he mentions a way of curing disease in poultry after the fashion of the celebrated Hahnemann, the first discoverer in the realms of homœopathy. The suggestion may be worth a trial, the physic prescribed being easily procured from any homœopathic chemist.

In "cold in the eye," one or two doses of aconite have been attended with the best result.

In "inflammation epidemica" (of the vent), a dose or two of *nux vomica* has been of speedy effect.

In "the pip or thrush," he ridicules the scraping of the tongue, and recommends a few homœopathic grains of "spongia" as a medicine, which would cure the bird without any operation becoming necessary.

Nothing is said in regard to the way of feeding during the treatment, except to abstain from stimulants.

So far homœopathy. He says in other respects, "In Germany the swelling of the crop is cured in a few hours by simply rubbing the tongue at night with salt, and giving the bird some pieces of garlic to eat. By swelling of the crop is not meant the hardening of it, but its swelling caused by fluid matter, akin to roup." I treated Crève Cœur fowls in this way, and restored them entirely within two days, repeating the experiment no more than once, their crops having swollen to the size of a man's fist. He gives a caution also against coffee-grounds, thrown away near a sink, as a deadly poison to poultry.

Lice are immediately expelled from the plumage of poultry and Pigeons by letting a few drops of turpentine-oil run through the feathers down from the neck.

Birds suffering from the "worm" [gapes?] are effectually cured in Germany by dipping a few pieces of bread in spirit of turpentine, and forcing them down the throat. The turpentine is absorbed into the system, and destroys every worm without fail. "But," the author continues, "above all, separate a diseased bird at once from the others, and

let it have its full liberty on grass land. There it finds medicine prepared by nature, better than any human help can procure."—F. B.

NOTES ON PIGEONS.—No. 4.

FORMER ENGLISH WRITERS ON THE SUBJECT.

DANIEL GIRTON.

FOLLOWING "The Treatise of A.D. 1765," came the still better known "New and Complete Pigeon Fancier, by Mr. Daniel Girton, of the county of Bucks." This gentleman had a greater love for a lengthy title-page than even the author of "The Treatise," and he had in addition a pleasing self-complacency in regard to his literary labours. He thought highly of his work; this shows that he enjoyed his authorship—as he rounded his sentences he was pleased with them. He says in his title-page (and title-pages are usually, like prefaces, the part of a work last written), that his book is "An useful, instructive, and sure guide to Pigeon-fanciers in every sphere of life, comprehending all that is necessary to be known in the whole fancy of Pigeons." He tells us in his preface, that "the most indefatigable pains have been bestowed to make this treatise equally beneficial and curious!" and that "without flattery or deception he offers to the public the best, the cheapest, and most useful work on the subject ever yet published in the English language." "A Daniel had indeed come to judgment," in his own opinion without doubt, and I am not sure but that he was right, although he should not have praised himself, as our copy-slips told us at school. Self-complacent Daniel, in the title-page, in the preface, and in the body of the work, still praising yourself for looking back upon the part finished! Daniel says, "Having presented my readers with a copious, useful, and entertaining natural history of the Pigeon." Comfortable-minded, self-congratulating Daniel! sitting under the Beeches of Buckinghamshire, feeling certain that on the Pigeon subject you had done your duty.

I have said that Daniel Girton's book followed "The Treatise," and soon after I am pretty sure, but how soon I am, alas! unable to state. I have what I think is a copy of the first edition. The spelling is old, the word fancier spelled thus, "fancier." The type is poor, and the paper very coarse; indeed, more impure paper to print on can scarcely be seen anywhere. At the bottom of the title-page I read, "London: Printed for Alex. Hogg, No. 16, Paternoster Row," but date I find none. My copy has been closely bound, and a portion of the bottom of the title-page was cut off in the binding. Under the words just quoted I can trace the upper parts of some figures, or letters, but there is not sufficient left for me to be able to make them out. If they are a date, perhaps some one possessing a first edition will kindly furnish me with it.

Girton's book has, I fancy, found far more readers than either "The Columbarium," or "The Treatise." The work has been printed again and again; five-and-twenty—no, eight-and-twenty-years ago (how time flies!), I had a copy lent to me then just bought new. Soon afterwards I saw another, and in 1842 I bought a new copy in Bristol. They were in paper cases, and exactly alike, and like the one now lying before me. Self-complacent Daniel was scarcely just to other people. Unlike the nameless author of "The Treatise," he does not say his work was "compiled," but he calls it "new." Oh, Daniel! this was not quite right. Even when he speaks of his book being "embellished with a set of engravings, elegantly executed from drawings accurately taken from life," if he implies that these were done for him he is hardly correct, for with simply the frontispiece of skinny cat and supplicating mouse notoriety excepted, and the over-gay Mottle, we have merely the old cuts of "The Treatise." The pictures in Girton are printed altogether as a frontispiece to the work, opening out like a map in a school geography. Here we have again the dumpy Powter, the ungraceful Fantail, the Almond over-coarse, the inelegant Carrier, the charming Jacobin, and the Trumpeter, &c., all feather for feather like those in "The Treatise." Then when we come to the matter, especially the descriptions of the varieties, we have much of "The Columbarium" and "Treatise" over again, with the sentences a little altered or their order changed.

Girton's "Fancier" is closely printed, and contains 140 pages, and appears to have been well known by even those who were not fanciers. Thus Southey in that curiosity of literature, "The Doctor," mentions, if my memory does not

deceive me, this very book of Girton's, devoting a whole chapter to it.

Although not wholly an original work, yet, I think, there are many good reasons to show that the fancy were wise in accepting it as the standard book on the subject during many years. It was portable, cheap doubtless, and better arranged and more complete than either "The Columbarium" or "The Treatise." Girton is the first writer on fancy Pigeons who gives us the natural history of Pigeons generally. He writes of the Stock Dove, the wild Pigeon, and the Turtle Dove, thus being naturalist and ornithologist as well as fancier, and so commending his book to lovers of birds. He writes, too, pleasantly enough. Then he speaks of the Dove-house Pigeon and its habits, and gives us an anecdote of a farmer who complained to a gentleman of the injury done in his fields by that gentleman's Pigeons, and getting the reply—"When you see them trespassing pound them." Upon which the farmer steeped some peas in an infusion of *occulus indicus*, which peas the Pigeons ate, and soon lay lifeless on the field. The farmer picked them up, put them into an empty barn, and gave the gentleman notice that he had taken his advice and pounded the Pigeons. This first chapter of Girton especially is pleasant reading. Then follow full directions for keeping Pigeons for profit, holding their cote, stocking it, laws relating to Pigeons, and methods of preventing them leaving their home; all this, including forty-eight pages of useful matter not in either of the former books, and though not meant for fanciers, yet very instructive, and almost every one begins by keeping common birds, and after a while grows into a fancier.

These useful pages having been given, Girton remarks, page 48—"Having now given full and plain directions for the choice and management of those Pigeons that are most advantageous for country people, or others who breed them for the market, we shall now turn our thoughts to gratify the taste of breeders who delight in the fancy birds." Girton also introduces to our notice two varieties not before mentioned, the Smiter and the Chinese Pigeon. In describing others he not infrequently gives us additional matter. Indeed, Moore was improved upon by the author of "The Treatise," and Girton improved further. If we cannot quite grant to Girton that his book is "new," yet we willingly allow that it was more "complete" than its predecessors. Some may say concerning these three old books, Moore was an originator, the writer of "The Treatise" an improver, Girton a completer, he producing a compendium which was for many years the book for Pigeon fanciers. Some years ago I was in the habit of buying every book on Pigeons that I saw advertised. Many times did I foolishly spend my money; some smart handbook arrived, at the best it was old Daniel Girton over again, much curtailed indeed; or it was evidently compiled by some one who had never kept Pigeons, and with pictures by those who were not fanciers. Buy and burn—this was my plan. Then those excellent books for boys containing a description of all the amusements suited for youth. In these works there were usually a few pages devoted to Pigeons; but if old Girton was not followed as he was in "The Boy's Own Book," a dearly-loved companion of mine in my school days, the information was meagre and valueless.

I have now finished with the writers on this subject of the eighteenth century, and shall next proceed to those of the present one.—WILTSHIRE RECTOR.

DRAGON PIGEONS.

MR. LUDLOW says he was induced in the first place to promote discussion upon the respective qualities of the two sorts of Dragon under notice—viz., those with the blue rump and those with the white rump, so that your readers might judge whether or not it was folly for me to exclaim against the latter without reason or argument. Now, I contend that there is no room for argument as to the relative properties of the two, simply because the one is clearly right and the other egregiously wrong; the one worthy the attention and admiration of the fancier, the other only fit to be consigned to the shop of the poulturer.

The superior colour which Mr. Ludlow says the white-rumped birds possess—namely, the light blue, is not at all in favour of the Dragon, which is, or should be, of a totally different blue to the Owl or Turbit. Moreover, when the light blue is found it is almost invariably accompanied by a white beak, equally as objectionable and worthless as the white rump.

Mr. Ludlow goes on to say I came forth without evidence in support of my fancy. Not so. I have offered to refer the matter to Mr. Esquilant, a gentleman well qualified to offer an opinion, from his long experience not only as a Dragon breeder but as a Dragon fancier. But lest Mr. Ludlow may think that Mr. Esquilant is the only gentleman in the fancy to whom I am willing to refer, I beg to mention the names of Mr. Bellamy, Mr. Carroll, Mr. Else, Mr. P. Eden, Mr. Ridpath, and Mr. Betty, any or all of whom, I am sure, will be willing to point out to Mr. Ludlow the error he has fallen into.

Blue Dragons, Mr. Ludlow goes on to say, are understood to be white-rumped, that it is the exception to obtain them otherwise. I admit that the common white-rumped birds may be obtained much more readily, but surely this is no argument in favour of such being perfect or correct; on the contrary, it only goes to show, as I before stated, the difficulty in breeding to perfection the Dragon as well as all other birds, for where one perfect bird is reared there are fifty imperfect and valueless. What, I ask Mr. Ludlow, would he think of a white-rumped Red, Yellow, or Black Dragon? If consistent or correct in the Blue, he cannot surely disclaim it in other colours.

Mr. Ludlow says he knows of one pen of white-rumped Blue Dragons which have taken fifteen prizes. If this be so, I can only say there must either have been an absence of blue-rumped birds or a great want of discrimination on the part of the judges.—JONES PERCIVALL.

[Here this passage of pens between Mr. Percivall and Mr. Ludlow had better close. Each abides by his opinion. We shall be glad to hear, however, from any or all of the gentlemen named by Mr. Percivall what is their opinion on the question.—Ens.]

THE MEMORY OF BEES.

I AM able to confirm the statement of your pagan correspondent ("THE BLACKHEATH'AN"), a week or two ago; having had a very similar case, but extending over a longer period. It has been so repeatedly said that the winter sleep of bees impairs their memory of localities, and allows of their safe removal to a new stand, that I resolved to try the experiment. A strong hive had been unusually quiet all the winter, only turning out on exceptionally fine days, and this I determined to move into an adjoining garden should the opportunity serve. Accordingly after nearly three weeks of cold weather, during which not a bee stirred out, I effected the removal very quietly. This was on the 3rd of March, and for eight days more the bees remained prisoners. On the 11th, being a fine bright day, they were out sunning themselves, and a few went back to the old place. The same thing occurred on the 17th. This I had expected, and I was prepared to lose two or three hundred bees; but, although the numbers were never large at any one time, they continued to visit the place up to April 15th, six weeks after the removal of the hive, and nine weeks after their last flight on the old spot. The hive is now rapidly recruiting, but it has received a check which I did not expect, and I shall have too much respect for the memory of bees to repeat the experiment.—F. H. WEST.

THE TOMTIT A FOE OF BEES.

If the large tomtit is alluded to by your correspondent "R. S." of last week, I reply it is an inveterate enemy to bees in the winter season. On visiting some years ago a friend who kept bees, we noticed a bird of that kind at the apiary, and on closer inspection observed that he came a second time and tapped with his bill at the entrance of one of the boxes, and after waiting a short time knocked again, when one of the guards rushed out in a great rage with wings erect, and was instantly picked up and carried to the branch of a neighbouring tree, from which we noticed the wings of the bee fall upon the snow underneath; and shortly afterwards, the visit by that or another was repeated with a similar result. My friend, being a good shot, stood guard himself, and soon bagged several of the enemy.—WM. GOODSALL.

EARLY SWARMS.—A swarm of bees came off on the 27th of April. The hive belonged to a blacksmith in a village near Hayward's Heath, Sussex. On the same day I saw some

drone enter one of my hives.—H. D. HARRISON, *Mytlen Cuckfield, Sussex.*

OUR LETTER BOX.

SENDING FOWLS TO THE ANTIPODES (*Amelia*).—We are unable to give you the exact dimensions of the coop you will require, because you do not state the breed of the fowls you are about to send. Cochins, Dorkings, and Brahmas require almost as much again as Hamburgs or Game. The coop must be high enough to admit of a perch; the front closed all but one-quarter space, which should be square and in a corner opening on the water vessel, and affording the means of feeding. The coop should be raised 6 inches from the deck, to allow water to run under instead of through it, and the roof should have a fall to the back of 3 inches to get rid of any water that falls on it. The flooring should also slant from front to back, and there should at the back be an opening of an inch for the facility of cleaning out. If the rise from back to front be 2 inches, the fowls will do part of the cleaning themselves by scratching.

HENS EATING THEIR EGGS (*A Lady*).—Hens will sometimes eat the eggs placed under them, but it is a very uncommon case. It unquestionably arises from a diseased state of body. The habit, however, seems to take such hold of them, that we always advise they should be killed. We recommend you to put a good heap of dust, road sand, and black sulphur—two pounds of the latter to a bushel of the former, close to their sitting place, and before you entrust good eggs to a suspected hen put her on some hard composition once, at which she can peck till she is tired. Better still, put such a one on mono at all. If you have no sitting hens, buy some in the neighbourhood. If they come from a cottager, so much the better. These unnatural appetites generally arise from over-feeding, and that is a complaint to which cottagers' fowls are not subject.

FOWLS SUDDENLY ILL (*Black Bentam*).—It would seem as though your fowls ate something injurious to them. Wherever there is the distention of the crop with the fluid you mention there is disease at work, although the bird may go on for days without showing it. There is toward fever and consequent thirst. This induces inordinate drinking, and lays the foundation of fatal disease. It is not uncommon. The most successful treatment is to purge freely with castor oil, then to feed sparingly on bread steeped in milk if the bird is strong, and on strong beer if it is weak; but the most essential point is to confine them, so that they shall not have access to water. There is no cure while they can have an unlimited supply of drink. They may be allowed a little water three times per day, but when they have scantily drunk it must be taken away. The treatment is helped if the patient be held up by the feet till the crop is empty.

EGG BROKEN AND THEN HATCHED (*H. R.*).—Your man is clever and has his poultry wits about him. The operation of pasting paper over the hole in the egg has been performed before, and we have seen an egg containing a live chicken patched up in all directions. We hope he was wise to the end, and assisted in bringing the duckling into the world, as assistance is generally needed after these accidents. Failing this, the chick dies in the shell. It is a very common mistake for people to forget that Ducks sit longer than fowls.

HEN LEAVING HER EGGS (*Harriet*).—Leaving them for an hour, especially at the very commencement of sitting, will not have the slightest ill effect upon their hatching.

FOOD FOR A CARDINAL (*H.*).—Give it Canary, rape, millet, and hemp seed mixed, but not too much of the latter; and in a separate pan place some oats, German paste, and a large quantity of bread crumbs mixed with it. Keep also the food which the bird has been accustomed to in the cage, it being rather a difficult bird to keep any length of time in confinement. It will pine away, probably, if its regular food be altogether withdrawn. Try for a change a little fig dust, mixed so as to be rather stiff with cold water. The fits and poorness have most likely been brought on by not having a change of food. Vary it about once or twice a week.

CANARIES (*J. S. D.*).—You can have Breat's "Canary" from our office post free, if you enclose nineteen postage stamps with your address. You might do worse than apply to Mr. Walters, Bird-fancier, Hyde Street, Winchester.

FRAME HIVES (*T. A., Weymouth*).—We believe no frame hives are more simple and efficient in working than those devised by our correspondent Mr. Woodbury, and named after him.

LIGURIAN BEES (*M. S., Pelham Place*).—The dead bees had all broken loose from their moorings before they reached us, so that it was quite impossible to identify them. One or two were fairly marked, but we cannot undertake to give any opinion as to the purity of a Ligurian stock from the examination of a few dead specimens.

BEES MISTAKING A HIVE FOR THEIR OWN (*A. S.*).—In your two hives standing together in a wooden house with separate entrances, the bees of which on returning from their work on entering the house are sometimes attacked by several others and killed—this evil arises from the returning bees mistaking their hive, and will probably diminish, if it does not entirely disappear, as the seasons advance and the bees become more active. It is, however, a very serious evil in spring, and we should suggest as a palliative adding a porch to one of the entrances, which might also be painted a different colour from the rest of the bee-house.

POULTRY MARKET.—MAY 7.

A good supply, and dull trade.

	s.	d.	s.	d.		s.	d.	s.	d.
Large Fowls.....	4	0	4	6	Guinea Fowls.....	0	0	0	0
Smaller do.....	3	0	3	6	Partridges.....	0	0	0	0
Fowls.....	0	0	0	0	Hares.....	0	0	0	0
Chickens.....	2	0	2	6	Rabbits.....	1	4	1	5
Goslings.....	6	0	6	0	Wild do.....	0	8	0	9
Ducklings.....	2	6	3	0	Pigeons.....	0	8	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 15—21, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon. Rises.		Moon. Sets.		Moon's Age.	Clock after Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	s.	
15	TU	<i>Gompholebium angustifolium.</i>	65.9	41.2	53.2	14	10	44	42	47	9	5	44	8	1	3	53	135
16	W	<i>Grevillea acuminata.</i>	66.5	43.0	54.7	15	9	44	43	7	2	6	51	9	2	3	52	136
17	TH	<i>Grevillea longifolia.</i>	65.9	41.7	53.8	15	7	44	45	7	1	7	45	10	3	3	51	137
18	F	<i>Habrothamnus elegans.</i>	65.7	42.8	54.5	17	6	44	46	7	8	8	31	11	4	3	49	138
19	S	Sun's declination 19° 47' N.	66.6	43.1	54.8	13	5	44	48	7	16	9	morn.		5	3	47	139
20	SUN	WHIT SUNDAY.	66.8	43.4	55.1	19	8	44	49	7	26	10	7	0	6	3	44	140
21	M	WHIT MONDAY.	66.3	45.0	55.6	17	2	44	51	7	35	11	37	0	7	3	41	141

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 66.1°; and its night temperature 42.9°. The greatest heat was 85°, on the 15th and 17th, 1833; and the lowest cold 25°, on the 15th, 1850. The greatest fall of rain was 0.50 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

APPLE AND PEAR TREES IN ORCHARDS.



VENTURE to send you a few lines on the recent discussion which has taken place in your pages on the subject of fruit-tree culture, not with any wish to re-

open the controversy, as it is not in the least my intention to enter into the arena with two distinguished gladiators like Mr. Robson and Mr. Rivers; for though I can hardly regret the controversy when it has elicited so much information on the subject, I still cannot help regretting that a mere difference of opinion on the merits or demerits of any particular method of the propagation or culture of fruit trees should cause a warfare, even on paper, between those who really have but one common interest at heart. I am afraid, however, that "our Chaplain" will think I am trespassing on his province as Mentor to "our Journal." I will, therefore, only now add that my object in making these remarks on the recent discussion is to call attention to the fact that, with truth on both sides of the question (as there undoubtedly is), still the old adage, "*In medio tutissimus ibis*," is true in this particular instance, as in my humble opinion it always is. Put any old saying to the test, there is none which is so universally true as the one of the golden mean. Neither homœopathy nor allopathy, neither the do-nothing nor the do-too-much system is true, but the practice of the clever physician is the only one which stands the test of common sense, and it is to help Nature to restore herself. As in medicine so in horticulture, the object of the cultivator is not to thwart Nature, but to assist her; not to teach Nature, but to let her teach us. Now, I do not pretend to set myself up in opposition either to Mr. Rivers or Mr. Robson. I am fully aware that they both know a great deal more than I do on the subject, and have had far more experience. I merely wish to take a common sense and practical view of the question, and do not wish to enter into a minute discussion as to the best or perfect way of growing fruit, but to draw attention to the most generally practical way. Apples and Pears are so essential in every family, both for the kitchen and the table, that it really is an eminently practical question; and there is hardly any one who has a kitchen garden who is not interested in the question, "How to obtain most easily a supply of fruit that shall be good in quality, fair in quantity, and not require too great an outlay."

Mr. Rivers is so accustomed to the management of fruit trees, more especially under one method of cultivation, that he does not see difficulties, or thinks nothing of them, which would be great difficulties to the generality of cultivators; for, though Mr. Robson may have over-estimated the value of an acre of Apples or Pears grafted on the Paradise and

Quince, and planted a yard apart, yet I think it would be hardly possible for any gentleman or amateur to plant the trees, or even to plant the stocks and graft them where they stand, at less than 6*l.* a-piece, which would make an outlay of about £120 an acre (at a yard apart every way), so that even if it be granted that this system of dwarf and small trees is the best, yet the first outlay is so great as to put it quite beyond the reach of the generality of cultivators.

On the other hand, the system of planting standard trees on grass land at 10 yards apart, leaving the grass to grow over the roots of the trees, and the trees to grow as they like, is really no cultivation at all.

What I would advocate is the bush and espalier systems, both for Apples and Pears, not placing the trees too closely, but planting them in rows, leaving open spaces or plots of ground for vegetables between the trees, according to the size of the garden or the number of trees which may be required. I would in this way have double lines of espaliers wherever the walks are, and grow the trees which are planted in the other lines as bush trees. If the subsoil is bad root-pruning will be necessary, or rather it will be advisable to prevent any tap roots running down into the soil; but otherwise, by judiciously forking and manuring the ground, and by not cropping too near to the trees as they grow, they will be induced to push their roots to the surface, and these will come upwards for their supply of nourishment rather than run downwards, and there will be no necessity constantly to lift or transplant them.

Again, as to pruning, a yearly shortening of the summer's growth in the spring of the following year, and an occasional thinning during summer of any growths that may be too luxuriant, will be quite sufficient, the object being not to dwarf or stunt the trees, but to keep them in a compact and bush-like form, and to make them fruit down to the ground. By leaving open spaces for vegetables between the rows plenty of light and air is admitted, and the trees make healthy and strong stems, instead of being drawn-up and spindly. Of course the requirements of different gardens vary so much that it is difficult to lay down general rules; but I am inclined to think, on an average, that bush Apple trees should not be planted at less than 8 feet apart, and Pear trees at 6 feet, leaving a space of from 8 to 10 yards square between the rows, or more, at the option of the planter. Trees treated in this method will, in eight or nine years after planting, yield from five to ten pecks a-piece. I sold last year from two Pear trees adjoining each other in a row of this kind, one a *Beurré Diel*, the other a *Van Mons Leon Leclere*, which had been planted eight years, five pecks of saleable Pears from each tree, for which I received 4*s.* a-peck. I do not, however quote the price as thinking the marketable value of fruit any real criterion of their worth, except, perhaps, in the case of market gardeners, or nurserymen, or any persons who grow a great quantity of fruit for sale, because the size of fruit is much more considered in the market than the quality; besides, the object of most persons in growing fruit is to supply their own table, and to grow a sufficient quantity of each variety to be able to furnish either the

dessert or the kitchen with plenty of each variety of fruit as it comes into season. I do not wish, therefore, to allude to the cultivation of fruit for commercial purposes, but for the general use of gentlemen's families.

The same system is, I think, however, equally adapted for the gardens of the poor, because the space taken up by the trees is not great, and yet at the same time they soon come into bearing, and yield heavy crops. The quality of the fruit, too, is far superior to that from ordinary standards, and, as far as my experience goes, it keeps much better. I am not by any means pretending to advocate anything new, as this medium system, if I may call it so, of growing bush fruit is one that is now extensively adopted in many gardens. I do not wish to now enter upon the question of wall fruit, because it is not often that really good walls can be given up to Apples and Pears; moreover, I wish to confine my remarks chiefly to orchard and garden fruit grown in the open ground.

I have had a very marked instance of the comparative growth of bush trees in a kitchen garden where the soil was annually forked and manured, and of trees planted in an ordinary orchard. Nine years ago I planted some bush trees in my kitchen garden, and at the same time filled up some vacant places in an orchard. In the latter instance the trees were left alone, and the grass allowed to grow over the roots, and, I am obliged to confess, little or no care taken of them. The soil, however, is very good loam, 3 feet deep, with pure dry sand underneath. At the end of nine years, however, I may safely assert that the bush trees that have been annually pruned in, and the soil around them properly cultivated, are capable of bearing ten times more fruit than the orchard trees. Practically the crop has been more than a hundredfold greater, as I have never picked more than a dish from any one of the orchard trees, and several of my bushes have borne yearly from five to seven pecks a-piece.

As we have had for the last four years a very extensive collection of Apples and Pears sent for exhibition to our Yorkshire Pomological Society, having had upwards of a thousand dishes of Apples and Pears last year at Whitby sent for comparison, not only from Yorkshire, but from many different counties (not for the sake of competition for prizes, but in order to ascertain what are the best sorts for the north of England, and also the best method of growing them), I have had a very good opportunity, as one of the Committee of the Society, of examining and comparing fruit grown in different ways and from a great variety of soils and climates; and I have been amply confirmed in my opinion that fruit from bush trees does not suffer by comparison with fruit from pyramids, dwarfs, or espaliers, either in size, quality, or flavour. I think decidedly the best general collection of fruit shown last year was from some young bush trees about from five to seven years old. If young trees are over-pruned at first it is necessary to root-prune as well, in order to prevent the disposition to make nothing but wood shoots. I have found not only in trees under my own care, but by observation in other gardens, that where trees are too much pruned when young, instead of inducing them to fruit early, it retards the period of fruiting—unless, of course, Mr. Rivers's system of lifting and transplanting is adopted. No doubt, for Mr. Rivers's own method of cultivation this is the only plan; but I think it so contrary to nature thus to check the supply of sap and to thwart the growth of trees, that it would not be expedient to adopt it except under peculiar circumstances. What I would again repeat is, that in the hands of an experienced cultivator like Mr. Rivers such a method will no doubt succeed; but I have seen rows of small trees treated in this way in some of my friends' gardens, when two or three hungry schoolboys would have cleared the rows. We must bear in mind that amateurs do not plant these trees by the hundred or the thousand, but perhaps will plant ten or twelve, or from that up to fifty, along the walks of a kitchen garden; and it has rarely been my fate to see a good dish of Apples or Pears on one of these trees for the first five or six years of their existence, after which time they begin to fare better, for root-pruning and pinching-in are gradually left off.

I have little doubt that the Quince stock is the best general stock for Pears, and that much has to be done and learnt yet in the way of double-working. So, too, I agree with Mr. Rivers, that the Paradise stock is most suitable for dwarf Apple trees, and that the most essential of all qualities for stocks is that of surface-rooting; but I still contend that if the ground on which fruit trees are planted is properly forked and manured, mulched if necessary during the winter, and forked, not dug,

in the spring, the tendency of fruit trees will be to make surface roots. Sun and air will penetrate to them, so as to help to elaborate and ripen the sap, and improve the quality of the fruit, and there will be no necessity for root-pruning, unless canker or some other disease show that the roots have struck into a subsoil which they do not like.

I do not think it wise, on the other hand, to plant standard trees by way of making a permanent orchard; every orchard, however managed, begins after a certain time to deteriorate; of course, it much depends on the nature of the soil, how long trees may continue to improve, and bear good fruit, but it is far better to replant and be content to sacrifice trees after they attain a certain age; and with the system I would advocate of leaving open spaces, these open spaces might be planted five or six years before the other trees are sacrificed. I fancy, with some few exceptions, that after twenty to thirty years, trees become too large and unmanageable, and the fruit begins to deteriorate.

I dare hardly say much on the *verata questio* of orchard-houses, for fear of bringing a hornet's nest about my ears; but unless on a large scale, and in the hands of very competent persons, they rarely if ever succeed. I confess I have never seen a small one in the hands of an amateur that really answered or repaid the trouble or expense. Small houses are liable to such changes of temperature, such alterations of heat and drought, with cold and moisture, that two or three hours' neglect on a sunny day in April or May may ruin all the care of the rest of the year. No doubt large houses in the hands of such persons as Mr. Rivers, Mr. Pearson, of Chilwell, Rev. T. C. Bréhan, and others, will answer admirably, but in the generality of cases small houses are pleasant toys, and pot trees are like spoiled children that require a great deal of care and attention, and very often after all but little repay the care bestowed. So I am afraid my advice to those who wish to build small unbeated orchard-houses would be (like "Punch's" advice to those about to marry), "Don't!"

One great objection in my mind to small pyramidal trees, and very dwarf bushes, is that they are so liable to have their blossoms injured by spring frosts; for though Mr. Rivers is quite right in saying that the radiation from the ground is an essential benefit in ripening fruit on dwarf trees, yet the very same causes bring them into premature blossom in the spring, and I need hardly say that on still frosty nights the nearer the bloom is to the ground the more it is liable to suffer from frost, and the smaller the tree the less protection it has from its own leaves and branches against the radiation of a spring frost. On a still night in May, I have known more than 5° difference between a thermometer on the ground, and one 4 feet off the ground. This often accounts, in my mind, for Apricot trees bearing freely at the top of the wall, while they have but few fruit or none low down.—X. Y. Z.

ROSE MILDEW—FRUITS IN NEW JERSEY.

In your Number of the 1st of May Mr. Radelyffe repeats the remedy formerly given by him for Rose mildew. If it came from any less trustworthy quarter I certainly should hesitate before I allowed so poisonous a salt as blue vitriol to find its way to my Rose roots. Last year I applied the remedy to the leaves of some Nectarines under glass, and it injured them. I had previously tried sulphur, but that had failed to cure. Strange to say, the only plants affected were Hunt's Tawny, which, although it has glandless leaves, never mildewed with me before. Last year three trees out of four were affected.

The above, at 8 feet apart each way and 92 feet between the rows, would represent about one-quarter of an acre, and would take eighty-eight bush trees.

In the same Number was an interesting letter from New Jersey; but your readers should be cautioned that the Peaches which succeed so well in America on sandy soil, are on their own roots, and not on Plum stocks. I am surprised, however, to hear that Melons attain such perfection on similar soil, as all our cultivators here seem unanimous in recommending stiffish loam. I have, however, heard of Melons succeeding in mere leaf mould.—G. S.

INTERNATIONAL HORTICULTURAL EXHIBITION.

It is quite evident that the vast space of nearly four acres which the great International Exhibition is to occupy will be barely sufficient to receive the collections of plants that are entered; and as the arrangement of such a quantity of plants will occupy an unusually long time, and be attended with considerable difficulty, we would suggest that intending exhibitors of hardy trees, shrubs, and such plants as will not suffer by exposure, should send them in as early this week as possible, so that as much of the work of arrangement as can be done may be got over before Monday, the 21st. Every preparation is now made for the reception of the subjects entered, and the sooner they are delivered the better.

FLOWERS OF THE LAST SEASON.

CHRYSANTHEMUMS.

THE ever-increasing varieties of this favourite autumnal flower would seem almost to defy improvement; and yet those who narrowly watch, as only connoisseurs do, the varieties that are produced year after year, are able to see that this improvement does take place, and that, while some of the older flowers still maintain their position, by far the greater number are jostled out of the way by the newer sorts; and in size, substance, shape, and colour, each year witnesses some advance. Mr. Salter still maintains the position he has for so many years occupied as the introducer of novelties in this class of flowers; and the following varieties which I have both bloomed myself and seen at Mr. Salter's, were exclusively sent out by him; and as an aid to purchasers I give the following notes.

Albert Helyer.—A large rosy purplish flower, fully incurved. A fine sort for cut blooms.

Blanche of Castile.—A beautiful clear white, thoroughly incurved, and with broad petals.

Golden Ball.—Bright rich orange, with golden orange back and tips. Fine shape, and beautifully incurved.

Golden Dr. Brock.—Fine rich yellow. A sport of that fine variety Dr. Brock, partaking of its good qualities, but of a different colour.

Hercules.—Very large, reddish carmine. Incurved after the style of Garibaldi, but far superior to it.

Lady Carey.—Large, rosy lilac, with silvery back to the petals. Well incurved, and a fine show flower.

Miss Margaret.—Pure white Anemone flower, with fine centre.

Mr. Brindley.—A large flower of an Indian red, tipped with yellow. A fine flower for cut blooms.

Mr. Wynness.—Violet puce. A fine flower, of rich colour, and well incurved.

Mrs. Kaines.—A blush flower, blooming very late, and of excellent quality.

Pink Pearl.—Pink, with a silvery shade. Well incurved.

Prince of Wales.—Dark violet, shaded. A well-shaped flower, with large petals.

Sam Weller.—Indian red, tipped with yellow. Well incurved and good.

Venus.—Large, lilac peach. A beautifully shaped full flower.

Virgin Queen.—Pure snow white. A plant of good habit, making a fine specimen.

POMPONES.

Golden Aurora.—Bright yellow. Sport of the old and well-known Aurora Borcale. Of good habit.

White Trevenna.—A fine sport of Rose Trevenna, blooming early, and very pretty.

A good deal has been said as to artificial manures and their effect on the growth of various flowers. Having used Standen's manure during the last season, I can bear witness to its efficacy as a most valuable stimulant. Applied to both Chrysanthemums and Hyacinths, its effects were soon seen; and used

according to the directions sent with it, I have no doubt it will be found equally valuable for other plants; but I only speak of it as I have myself experienced its efficacy.—D., Deal.

DESTROYING THE GOOSEBERRY CATERPILLAR.

MUCH has been written, and many directions have been given, as to the destruction of the Gooseberry caterpillar through the columns of this Journal, but I have never seen recommended the means that I have adopted with unflinching success for several years. This consists in dusting every bush with powdered white hellebore as soon as a caterpillar makes its appearance. I obtain it of a chemist at the trifling cost of 1s. 8d. per pound, which is sufficient for fifty bushes. It is very rare that there is any need to repeat the dose, as the caterpillars are found dead on or beneath the bushes the next day. The bushes should be dusted in dry weather, as the rain is apt to wash much of the hellebore off the leaves. I apply it by the means of a common sulphurator. Should any one try it, it will be found effectual.—J. S. S.

[The use of fresh white hellebore powder has been frequently recommended in our pages for destroying the Gooseberry caterpillar. It should be washed off the berries before they are eaten, as it is poisonous.—Eps.]

THE LATE FROSTS.

THE first week in May in this locality will not be soon forgotten for the disastrous effect on vegetation of the blighting frost of April 30th and May 2nd. On the 27th ult. the thermometer registered 65° at 7 o'clock P.M., with a gentle shower of rain. The expansion of the leaf was surprisingly rapid, and the atmosphere was suffocating. On the 30th at half-past 5 A.M. the thermometer registered 25° Fahr.; but the night previous being dry, this low temperature did not do so much damage, and that was principally confined to the Potatoes, Asparagus, and Cherries. On the 2nd inst. A.M. it registered 24°; snowing all day on the 1st everything was soaking, so nothing escaped. Nectarines, Cherries, Apricots, and Pears were fearfully cut up; Peaches not so much. The Oak and Beech foliage are frozen black. The Ash and other hardy trees in bloom are completely scorched. The Brassica tribe received a severe check.—P. MIDDLETON, *The Gardens, Wynnstay, North Wales.*

GARDENERS, AND THE INTERNATIONAL HORTICULTURAL EXHIBITION.

THE subject of my letter must be my only apology for trespassing upon your valuable space. The great International Horticultural Exhibition is now at hand. Scores of gardeners, who have not the means wherewith to go, would like to be there. As a class of men they are generally expected to be up with the age, and there are very few ladies or gentlemen who like to see their gardeners behind their fast-going neighbours; but this is inevitable unless they have an opportunity now and then of brushing the nap and rubbing off the rust by coming in contact with the most skilful of their order. When we call on neighbour John across the way, who can boast of having filled the same position for thirty or forty years, and has never been away from the place for a day during the whole time, how we smile at his antiquated notions and his old-fashioned stand-still place. His Camellias and Acacias are pot-bound, and he knows it not; his Geraniums, towering up on a single stem, are 3 or 4 feet high, or thrusting their heads through the roof of his house, and he considers this the way to grow them. As a matter of course we set him down as one of the "old school." There are hundreds of gardeners who wish to go beyond our neighbour described above, and who would gladly avail themselves of the opportunity of visiting the great International Horticultural Exhibition; but the fact is they cannot. Their stipends compared with other artisans are low; provisions and wearing habiliments are dear, and the wants of the family are numerous. What is to be done? Let every lady and gentleman who possesses an intelligent go-ahead gardener who is desirous of taking the lead among his neighbours, send him to the great Show and pay his expenses. I fancy some of your readers saying, "That is a capital idea!" And so it is; but it will be better still if it be put in practice. The description and ground plan which you gave us in No. 265

of the 3½ acres, to be devoted to a monster show in London of the best and finest productions from all nations—then, too, the congregation of the cream of horticulturists from the three kingdoms, besides numbers from the continent,—why, when we think of all this it makes us long to be there; but when we talk about it in the family circle, our good and frugal wives say, "No, Robert, you must not think of going. Look at the expense of travelling two hundred miles there and two hundred back, besides staying in London for several days. There is little Mary wants a new frock, Johnny wants boots, and Joseph, who is to be a gardener, has not yet completed his education." And so there the matter has to rest.

But if our good employers would send us, with the means in our pockets to pay our expenses, what a fresh tide of life would flow through our services for the future! I am sure, while we enjoyed the pleasure combined with the profit, our employers would reap the advantage.—P. H. B.

ROYAL BOTANIC SOCIETY'S SHOW.—MAY 9.

The first of the summer shows at the Regent's Park was held on Wednesday last, and was honoured with an inspection at an early hour of the day by their Royal Highnesses the Prince and Princess of Wales, the Duchess and Princess Mary of Cambridge, and Prince Teck. The display, though scarcely so extensive as at the corresponding shows of previous years, was nevertheless very effective, and had a brightness and freshness which gave it a peculiar charm. The weather, too, so important an element in the success of flower shows, or, indeed, out-door gatherings of any kind, though by no means promising in the morning, became favourable in the afternoon of the day, enabling the visitors to promenade in the grounds and listen on the lawn to the Life Guards' bands.

STOVE AND GREENHOUSE PLANTS.—Of these, numerous collections were shown, but the plants generally were not sufficiently forward to have reached their full perfection as regards bloom. In collections of ten, Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, had among others a large bush of *Tetradlea cricifolia* covered with bloom; *Chorozenia cordatum splendens*, fine; *Cyrtoceras reflexum*, *Pimelea Hendersonii*, *Hedera fuchsoides*, and *Eriostemon intermedium* and *neriifolium*. Mr. J. Wheeler, gardener to J. Philpott, Esq., Stamford Hill, exhibited in the same class *Mediulla magnifica*, *Chorozenia varium nanum*, and *Epacris miniata splendens* in excellent condition, *Boronia serrulata*, *Azalea Triumphans*, &c.; and another collection came from Mr. G. Wheeler, gardener to Sir F. Goldsmid, Bart.

Collections of eight were shown both by nurserymen and amateurs. Among the former Mr. Rhodes, Sydenham Park, had a large specimen of *Hedera fuchsoides* in fine bloom, a most excellent example of *Dracophyllum gracile*, by far the best in the Show; *Chorozenia cordatum* in fine bloom, *Eriostemon intermedium* and *neriifolium*, a fine plant of *Erica Cavendishii*, *Erica depressa*, and *Aphelaxis macrantha rosea*. From Messrs. Lee, of Hammersmith, came *Compholobium polymorphum splendens* with showy salmon scarlet and purple flowers; *Erica ventricosa coccinea minor*, in fine bloom; *E. Cavendishii*, a large plant of *Epacris grandiflora rubra*, *Hedera fuchsoides*, *Stephanotis floribunda*, and *Eriostemon pulchellum*. Mrs. S. Glendinning & Sons also contributed a good collection, in which were the yellow *Azalea sinensis* in fine bloom; *Extranea*; the white-flowered *Rhododendron Gibsonii* well covered with bloom, but the flowers not individually so large as we expect to see in that species; *Erica suaveolens*, and *Hedera tulipifera*. A collection from Mr. Baxendale, Guildford, included *Chorozenas*, *Epacris*, and *Rhynchospermum jasmioides*.

In the Amateurs' class for the same number of plants, Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, had a fine collection consisting of *Epacris grandiflora*; *Stephanotis floribunda*, in excellent bloom; *Boronia tetrandra* with charming wax-like flowers; *Mediulla magnifica*, with ten spikes of bloom; *Eriostemon linearifolium*; *Adenandra fragrans*, not sufficiently out; and *Azalea Lateritia*, forming a dense cockscomb-shaped mass of bloom. From Mr. Kemp, gardener to Earl Percy, Albany Park, came *Pimelea spectabilis*, bearing numerous heads of its white flowers delicately tinged with pink; *Boronia serrulata*; the deep blue *Leshenaultia biloba major*; *Diosma speciosa*, and *Chorozenia varium nanum*, in fine bloom; *Allamanda nerifolia*, and *Azaleas*. A good collection of eight plants was likewise shown by Mr. Kille, gardener to Earl Lovelace, East Horsey Tower; and one of six, by Mr. A. Ingram, gardener to J. J. Blaudy, Esq., Reading, comprising excellent specimens of *Clerodendron Thomsouae*, *Rhynchospermum jasmioides*, *Aphelaxis macrantha rosea*, and *Boronia microphylla*.

The mixed collections of flowering and fine-foliaged plants also constituted an attractive feature, groups being contributed by Messrs. Lee, Mr. Gill, gardener to Mrs. Beaufoy, South Lambeth, Mr. Williams, Holloway, Mr. Carr, Mr. Rhodes, and Mr. Young, of Highgate. In Messrs. Lee's collection were fine examples of *Cyathia Smithii*, *Crotov variegatum*, *Theophrasta imperialis*, *Aloe-leaved Yucca*, *Hedera tulipifera*, and *Erica ventricosa coccinea minor*; whilst in that from Mr. Gill, *Spharogyne latifolia* though not large

was in a very fresh and handsome condition; other plants in the same collection were *Philodendron erinipes*, with the leafstalks covered with curly hair-like processes, *Boronia pinnata* in beautiful bloom, *Eriostemon*, &c. From Mr. Williams came *Dracaena lineata* and *Zamia ponzana*, very large and fine, *Cordylina indivisa*, the variegated *Aloe-leaved Yucca*, *Eriostemon hexifolium*, and other flowering-plants; and Mr. Carr and Mr. Rhodes contributed well-grown examples of *Spharogyne latifolia*, *Alocasia metallica*, *Pandanus elegantissimus* and *javanicus variegatus*, *Erica Cavendishii*, *Rhynchospermum jasmioides*, *Chorozenas*, and other flowering plants.

Awards.—For ten: first, Mr. Peed; second, Mr. J. Wheeler; third, Mr. G. Wheeler. For eight (Nurserymen): first, Mr. Rhodes; second, Messrs. Lee; third, S. Glendinning & Sons; fourth, Mr. Baxendale. For eight (Amateurs): first, Mr. Donald; second, Mr. Kemp; third, Mr. Kille. For six: first, Mr. A. Ingram. For ten fine-foliaged and flowering-plants: first, Messrs. Lee; equal second, Mr. Gill and Mr. Williams; equal third, Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet, and Mr. Rhodes.

FERNS AND FINE-FOLIAGED PLANTS.—Of Exotic Ferns a fine collection of twelve from Mr. Barnard, gardener to J. Taylor, Esq., Stoke Newington, received a first prize. It consisted of *Cyathea boconensis*, *dealbata*, *medullaris*, *Cooperi*, and *elegans*; *Cyatium princeps*, *Gleichenia spelunca*, an *Alsophila*, the Bird's-nest Fern *very fine*, *Blechnum corcovadense*, *Dicksonia antarctica*, and *Todea africana*. A group from Mr. Young, gardener to R. Barclay, Esq., Highgate, was second. Collections of six fine-foliaged plants were contributed by Mr. Donald, Mr. Barnard, Messrs. P. & A. Smith, and Mr. Young, to whom prizes were awarded in the order in which their names occur. Among the subjects exhibited in this class were good examples of *Pandanus*; *Alocasia macrorrhiza variegata*, the large white-splashed leaves of which were very effective; the Bird's-nest Fern, variegated *Crotovs*, *Yuccas*, *Dracaenas*, *Pteris cretica albo-lineata*, &c.

AZALEAS constituted the grandest feature of the Show. Such magnificent plants as those exhibited by Mr. Turner and Messrs. Veitch were alone worth a long, a very long, journey to see; and it was most pleasing to observe that though the pyramidal fashion of training had been preserved, the stiff crioline character which was so much and so justly complained of in past seasons had been in a great degree avoided, and nothing could have been prettier than the few bright green leaves here and sad green leaves there that now and then peeped forth from among the gorgeous masses of bloom which these fine specimens presented. Mr. Turner's eight consisted of Sir C. Napier, *Magnificent*, *Coronata*, very brilliant, *Optima*, *Variegata*, *Gledstanesii*, *Juliana*, and *Conqueror*; Messrs. Veitch's of *Extranea*, dazzling in colour; *Stella*, a glorious flower both in form and colour; *Herbertii*, white, very fine; *Criterion*; *Prastantissima*, *Iveryana*, *Coroata*, and *Cedo Nulli*. In sixes the same two eminent growers were again competitors, and Mr. Turner was again successful in taking the first place with a set of plants nearly equally fine with those which he exhibited in the class for eight. They were *Perryana*, *Gm. Iveryana*, *Etoile de Gand*, *Gledstanesii variegata*, and *Holfordi*, the last a brilliant rosy purple, and quite dazzling. Messrs. Veitch had *Flower of the Day*, and *Magnificent*, white; *Holfordi*, *Viola superba*, *Rosca superba*, and *Empress Eugenie*, all of which were large specimens and in remarkably fine bloom. Collections were also shown by Mr. Rhodes, Messrs. Dobson & Sons, Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, Mr. Gill, Mr. Peed, and Mr. Wheeler, gardener to Sir F. Goldsmid, Bart.

Awards.—For eight: first, Mr. Turner; second, Messrs. Veitch and Sons; third, withheld; fourth, Mr. Rhodes. For six: first, Mr. Penny; second, Mr. Gill; equal third, Mr. Peed and Mr. G. Wheeler. For six: first, Mr. Turner; second, Messrs. Veitch; third, withheld; fourth, Messrs. Dobson & Sons.

ORCHIDS.—In these there was a great falling off in the number exhibited, and the fine collections which Mr. Baker, Mr. Wilson, and Mr. Bullen produced in former years were sadly missed. From Mr. Penny came *Dendrobium Dalhousianum* and *microphyllum giganteum* with four good spikes, the Fox-brush *Acrides*, *Lalia cinnabarina*, *Cypripedium villosum* with ten blooms, *Phalanopsis grandiflora* in fine condition, both as regards health and bloom; the yellow and crimson-flowered *Oncidium sarcodeus*, *Lycaste Skinneri*, and a fine variety of it remarkable for the delicacy of its colour, and *Vanda suavis*. Mr. Page, gardener to W. Leaf, Esq., had his *Oncidium ampliatum majus* noticed last week, the rich yellow *Dendrobium densiflorum*, *D. nobile elegans*, deeper in colour than the common variety, *Saccolabium Blumei* with one fine spike, *Cattleya Skinneri*, &c. In groups of eight, Mr. Peed had the *Acrides Fieldingii* with two fine spikes, and *crispum*; *Lalia purpurata*, with nine large and finely-coloured flowers; *Vanda insignis*, *suavis*, and *tricolor*; the pretty yellow *Oncidium sessile*, and *Cypripedium barbatum superbum*. Mr. Wiggins exhibited *Tricopilia crispata* with nine of its pretty blossoms; *Acrides Warneri*, *Vandas*, *Cypripediums*, &c. Collections of six came from Messrs. Lee, Jackson of Kingston, Mr. Rhodes, and Mr. Bull, and comprised varieties of *Lycaste Skinneri*, *Lalia purpurata*, *Oncidium*, *Dendrobium*, *Phalanopsis*, *Cypripediums*, *Vandas*, *Chysis bracteata*, and the bright yellow *Tulip-like Anguloa Chwesii*.

Awards.—For ten: first, Mr. Penny; second, Mr. Page. For eight: first, Mr. Peed; second, Mr. Wiggins; third, Mr. J. Wheeler. For six: first, Messrs. Lee; second, Messrs. Jackson & Sons; third, Mr. Rhodes; fourth, Mr. Bull.

HEATHS.—Numerous fine specimens were shown by Messrs. Rhodes, Peed, Jackson, A. Ingram, and others, particularly of the following—viz., *Victoria*, *Webbiana*, *Devoniana*, *profusa*, *Spenceriana*, *ventricosa coccinea minor*, *Hartaelli virens*, *Cavendishii*, *affine*, *depressa*, *perspicua nana*, *mutabilis florida*, *propendens tabitoria*, and *Sindryana*, remarkably fine, *Spenceriana*, *fastigiata lutescens*, *vasiflora*, and *Alberti major*, buff.

Awards.—For eight (Nurserymen): first, Mr. Rhodes; second, Messrs. Jackson. For eight (Amateurs): first, Mr. Peed; second, Mr. J. Wheeler. For six: first, Mr. A. Ingram; second, Mr. Kaile; third, Mr. G. Wheeler.

Roses, as exhibited by Messrs. Lane, of Great Berkhamstead, were magnificent pyramids, standing from 3 to 5 feet in height from the ground, and were covered with blooms individually large and beautifully fresh. Such a fine exhibition has not been witnessed for a long time. The sorts were *Paul Perras*, splendid; *Général Jacqueminot*, very double; *Louis Peyronay* with about thirty blooms; *Anna de Diesbach*, very fine; *Senateur Vaisse*; *Charles Lawson*, magnificent; *Victor Verdier*, *Coupe d'Ilbe*, *Souvenir d'un Ami*, and *Gloire de Dijon*. Mr. William Paul also had a beautiful collection, but there were not so many of the brilliant-coloured varieties. It consisted of *Junno* very beautiful, *Beauty of Waltham*, *Tea Madame Villermoz*, *President*, and *Souvenir d'un Ami*; *Victor Verdier*, *Paul Perras* very fine, *Lelia*, *Madame Damaizin*, and *Anna de Diesbach*. Two or three other collections were shown, but nothing to compare with those above mentioned.

Awards.—For ten; first, Messrs. Lane; second, Mr. Wm. Paul. For six: first and second withheld; third, Mr. Terry, Youngsbury; fourth, Mr. Wiggins.

PELARGONIUMS.—Of these there was a fine bank, and owing to the Show being a week later than that at Kensington, the plants were more fully in bloom. For nine Mr. Turner was first with fine plants of *Beacon*, *Lilacium*, *Candidate*, *Empress Eugénie*, *Lady Canning*, *Desdemona*, *Celeste*, *Rose Celestial*, and *Fairest of the Fair*, the last two particularly good; and Mr. Fraser, of Lea Bridge, second with *Peacock*, *Beadsman*, *Fair Rosamond*, *Osiris*, very showy, *Fairest of the Fair*, *Empress Eugénie*, *Rose Celestial*, *Candidate*, and *Rosenn*. In the Amateurs' class Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton, was first with excellent specimens of *Fairest of the Fair*, *Spotted Gem*, *Rose Celestial*, *The Bride*, *Lilacium*, *Peacock*, *Sir Colin Campbell*, *Fair Rosamond*, and *Nestor*. Mr. Wiggins also exhibited and received a third prize.

Fancy varieties were also well represented in the collections from Mr. Turner and Mr. Fraser, who were respectively first and second. The former had *Evening Star*, *Lucy*, *Roi des Fantaisies*, *Undine*, *Modestum*, and *Lady Towers*; the latter *Cloth of Silver*, *Maroon*, *Undine*, *Arabella Goldard*, *Clara Novello*, and *Marionette*. Mr. Weir, gardener to Mrs. Hodgson, Hampstead, was the only exhibitor in the Amateurs' class, and had a first prize for good examples of *Aeme*, *Carnation*, *Queen of Roses*, *Madame Sontag*, and two others.

MISCELLANEOUS.—Mr. Turner, of Slough, again exhibited a beautiful collection of *Auriculas*, including *Alpines*, one of which, *John Leech*, reddish brown, received a first-class certificate. *Calcicolarias*, well grown and in excellent bloom, came from Mr. James and Messrs. Dohson & Sons, of Isleworth; and *Pansies* from Messrs. Hooper, James, and Kingston; and a seedling called *Princess Helena*, from Mr. Hooper, received a second-class certificate. Messrs. Cutbush, of Highgate, contributed a number of small neat plants, consisting of *Azaleas*, *Eriostemons*, *Heaths*, *Aphelexis*, and *Rhododendron Cunninghami*; Messrs. Jackson & Sons a basketful of *Clerodendron Thomsonae Balfourii*, a variety with larger flowers than the ordinary form; and Mr. Donald a fine specimen of *Lelia purpurata* with a score of blooms. From Mr. W. Paul came a collection of *Nosegay Pelargoniums*, also *Little Gem*, an Oak-leaved variety, with deep rose-coloured flowers; and Messrs. F. & A. Smith had variegated and *Zonale Pelargoniums*, among which *Magnet* seemed a promising broad-petalled bright scarlet variety. A similar collection was exhibited by Messrs. E. G. Henderson & Son, who also had *Acer palmatum atropurpureum*, a neat bronzy-leaved plant, and their beautiful variegated *Dog's-tail Grass*. Mr. Bryant, Hounslow, received a first-class certificate for *Pansy Colonel Murray*, maroon on a yellow ground. Certificates of the same class were awarded to Mr. Bull for *Selaginella Mertensii albo-variegata*, *Prinula intermedia*, and *Rhododendron Bianca*; and second-class certificates for *Abutilon vexillarium*, *Peperomia arifolia*, *Maranta splendida*, and *Nidularium Pinelii*, all of which have been noticed in previous reports. Mr. Bull also showed new *Petunias*, *Pelargoniums*, *Machærum firmum*, and other plants. A brace of a large white-spined *Cucumber* called *Champion of the World* was also exhibited by Messrs. A. Henderson & Co.

ROYAL HORTICULTURAL SOCIETY.

WEEKLY SHOW, May 12th.—At this meeting Messrs. Cutbush received a first prize for the best collection of miscellaneous plants, and in the class for the best-arranged basket of flowers Messrs. Lacking were first, and Mr. Young, of Highgate, second. Mr. Young received a first prize for a collection of vegetables. Messrs. Cutbush also received prizes for collections of *Caladiums*, *Azaleas*, and ten pots of finely flowered *Myosotis intermedia*. Rev. Geo. Cheere, of Papworth

Hall, had a first-class certificate for a highly meritorious exhibition of *Giant Mignonette* in pots, and another for a remarkably well-grown specimen of *Tropæolum Papworth Scarlet*.

CRYSTAL PALACE SHOW.—MAY 12TH.

On this occasion there was a brilliant and varied display, though perhaps not quite so extensive as last year, a circumstance no doubt attributable to exhibitors holding back their productions for the great International Exhibition. Following so closely after the Show at the Regent's Park, as might be expected, many of the collections which appeared there were again brought forward, and as these have been already noticed, it will be unnecessary to enter into details respecting them.

STONE AND GREENHOUSE PLANTS.—Among these were remarkably fine flowering specimens of *Dracophyllum gracile*, various *Chorozeamas*, *Tetratheca ericæfolia*, *Eriostemons*, *Eperis*, *Erica Cavendishii*, *Adenandra fragrans*, *Boronia tetrandra*, *Ixoras*, *Genethyllis*, and *Vinca alba*; in addition to these there were good examples of *Aphelexis*, *Diosma speciosa*, and *Pimelas*. One collection which would otherwise have taken a higher position in the prize list, was placed fourth because it contained a plant of *Deutzia gracilis*, which, of course, was not admissible.

Some good mixed collections of fine-foliaged and flowering plants were also shown, and included *Alocasia metallica*, the *Variiegated Aloe-leaved Yucca*, *Croton variegatum*, *Spherozyga latifolia*, *Cyanophyllum magnificum*, the *Lemon Grass*, which emits a grateful odour when bruised; a very fine *Pandanus elegantissimus* from Messrs. Lee, *Theophrasta imperialis*, the *Date Palm*, *Maranta zebrina*, *Gleichenia splenacea*, &c.

Awards.—For sixteen: first, Mr. Peed; second, Mr. J. Wheeler, gardener to J. Philpott, Esq., Stamford Hill; third, Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, Bart., Regent's Park; fourth, Mr. Kemp, gardener to Earl Percy, Albany Park. For ten (Nurserymen): first, Mr. Rhodes; second, Messrs. Lee; third, Mrs. Glendinning and Soas; fourth, Mr. Bavendine, Gaifford. For ten (Amateurs): first, Mr. Peed; second, Mr. Kaile, gardener to Earl Lovelace, East Horsley Tower. For six: first, Mr. C. Smith, gardener to A. Anderson, Esq., Norwood. For twelve, fine-foliaged and flowering plants: first, Messrs. Lee; second, Mr. Young; third, Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet; fourth, Mr. Rhodes; extra, Mr. Barnard, gardener to J. W. Taylor, Esq., Stoke Newington.

HEATHS.—Of these several fine collections were shown, and those from Mr. Rhodes and Mr. Peed were especially good. *Coccinea minor* from the former was noticeable for the profusion of its richly-coloured blooms; and *Devoniana*, *mutabilis*, *perspicua nana*, *Victoria*, *profusa*, *Spenceriana*, *florida*, *vasiflora*, and *Sindryana*, in these and other collections were excellent.

Awards.—For ten: first, Mr. Rhodes. For eight: first, Mr. Peed second, Mr. J. Wheeler. For six: first, Mr. Rhodes; second, Mr. C. Smith; equal third, Mr. J. Wheeler and Mr. Kaile; equal fourth, Messrs. F. & A. Smith and Mr. G. Wheeler.

AZALEAS.—In the Nurserymen's classes Mr. Turner, of Slough, again produced his splendid plants, consisting with but one or two exceptions, of the same varieties as shown at the Regent's Park, and in equally fine condition. Mr. Penny and Mr. Peed also exhibited some neat pyramidal plants of smaller size; and there was, besides, a class for twelve plants in 10-inch pots, which drew from Mr. Turner a well-flowered collection, consisting of *Flag of Truee*, *Iveryana Improved*, *Elegantissima*, *Gloire de Belgique*, and *Madame Mielze*, all of them white more or less striped; *Duc de Nassau*, *Kinghorai*, and *Bernard Andrens*, bright rose, the last semi-double; *President*, *Mars*, and *Comtesse de Hainault*, shades of salmon, *Mars* being the nearest to scarlet; and *Charles Enke*, rosy salmon, bordered with white.

Awards.—For eight (Nurserymen): first, Mr. Turner; second, withheld; third, Mr. Rhodes; fourth, Messrs. Cutbush. For eight (Amateurs): first, Mr. Penny; second, Mr. Peed; third, Mr. G. Wheeler. For six (Nurserymen): first, Mr. Turner; second withheld; equal third, Messrs. Cutbush and Messrs. F. & A. Smith. For six (Amateurs): first, Mr. Penny; second, Mr. J. Wheeler; third, Mr. C. Smith; fourth, Mr. Peed. For twelve: first, Mr. Turner; second, withheld; equal third, Messrs. F. & A. Smith and Messrs. Cutbush.

ORCHIDS.—There was a fine bank of these, and the collections of twenty were especially good. Mr. Bullen, gardener to A. Turner, Esq., Leicester, was first with excellent specimens of *Dendrobium noble*, *tortile roseum*, *albo-sanguineum*, and *elburcum*, *Odontoglossum nevium*, *O. cordatum* with two fine spikes, *Cattleya Acklundie* with four blooms, *C. Mossie*, *Phalaenopsis amabilis* and *grandiflora*, *Cypripedium Lowii*, *hirsutissimum*, a pan of *C. barbatum superbum* with nearly three dozen blooms, varieties of *Lycaste Skinneri*, *Burlingtonia fragrans*, *Oacidiuns*, &c. Mr. Wilson, gardener to W. Marshall, Esq., Epsfeld, who was second, had, among others, *Dendrobium tortile roseum*, forming a pretty mass of flowers, having rosy-lilac petals and sepals, and a white lip; *D. chrysoxum*, several *Cypripediums*, and *Phalaenopsis Luddemanniana* with four beautiful blooms; and the same *Phalaenopsis*, as well as *P. Schilleriana* and *Dendrobium Jenkinsi*, a very dwarf evergreen species, which is best grown on a block, came from Mr. Robson, gardener to G. Cooper, Esq., Coburg Road, who was awarded a third prize. The fourth went to Mr. Page, gardener to

W. Leaf, Esq., who would have taken a higher position had his collection not contained three *Phalænopsis*. In other classes there were good examples of the Foxbrush *Aurides*, *Cypripedium Hookeri* and *villosum*, *Oncidium sarcodes*, and *Lælia purpurata*. For twelve, Mr. Penny was first, Mr. Peed second, and Mr. J. Wheeler received an extra prize; for six, Mr. Penny and Mr. Peed were first and second, and Mr. Wiggins third.

Roses in pots formed a leading feature; for not only were Messrs. Lane's magnificent plants exhibited, but these were reinforced by other fine specimens from Mr. Turner, Messrs. Paul & Son, and Mr. William Paul. Among specimens in 13-inch pots, besides those shown on the previous Wednesday, there were profuse-blooming plants of Paul Ricaut, Niphotos, Madame de St. Joseph, Juno, Général Jacqueminot, Victor Verdier, and Charles Lawson; and in eight-inch pots, of Madame Bravy, Anna Alexieff, Devonensis, Alba rosea, Madame Falcot, Victor Verdier, Beauty of Waltham, and Alphonse Belin. Awards—For ten in 13-inch pots: first, Messrs. Lane; second, Messrs. Paul & Son; third, Mr. Turner; fourth, Mr. W. Paul. For twelve in eight-inch pots: equal first, Mr. Turner and Messrs. Paul and Son; for six: first with-held; second, Mr. Wiggins.

PELARGONIUMS.—There was a beautiful haul of these; but as the names of the varieties in each exhibitor's collection have been given in the report of the Royal Botanic Show, it is unnecessary here to repeat them.

Awards—For twelve: first, Mr. Turner; second, Mr. Fraser. For ten: first, Mr. Ward; second, with-held; third, Mr. Weir; fourth, Mr. Wiggins. For six Fancy (Nurserymen): first, Mr. Turner; second, Mr. Fraser. For six (Amateurs): first, Mr. Weir.

MISCELLANEOUS.—Of new or rare plants Mr. Bull, of Chelsea, was as usual a large exhibitor, and the collection which he furnished contained many interesting plants, most of which have been already noticed in these columns. First prizes were awarded him for *Litobrochia tripartita*, a pretty Fern; *Cycas Ruminiana*, *Phœnicophorum seebellarum*, and *Pileaia tabulariformis*, now producing orange-scarlet flowers; and second prizes for the pretty white variegated variety of *Selaginella Mertensii*, *Bignonia argyrea violascens*, *Bertolonia margaritacea*, *Cestus zebrinus*, with green foliage longitudinally veined with white, and brown on the under side; *Calamus dealbatus*, *Polystichum angulare parvissimum*, *Eranthemum argyreneum*, *Maranta splendida*, *Terminalia nobilis*, the leaflets of which have prominent purplish midribs; *Zamia cycadifolia*, *Cycas plumosa*, the white variegated form of *Podocarpus macrophyllus*, *Urospatha splendens* and *grandis*, *Pandanus ornatus*, *Verschoffia splendida*, and a pretty white-striped Maize, for a similar variety to which Messrs. Carter also received an award. Mr. Bull also exhibited the Long-tailed Radish, *Raphanus caudatus*, of which the pods, though not full grown, were at least 16 inches long. *Nothochlana cretacea*, from Mr. Parker. Tooting, received a first prize; and from the same came also a new variety of *Fraxinea enyaleia*, very fine in colour, and a small plant of *Aneba himalaica*, bearing its large berries. Seedling *Pelargonium Sylvia*, from Mr. Turner, of Slough, was awarded a first-class certificate; and of tricolor-leaved and other variegated kinds a very beautiful group, containing numerous fine varieties, came from Messrs. F. & A. Smith, of Dulwich, who received and well deserved a prize for them. Awards were likewise made to Mr. Turner for beautiful collections of Tulips and Auriculas; to Mr. James for *Calcœolarias*; to Messrs. Downie, Laird, & Laing for Fancy and other Pansies; to Mrs. Glendinning and Sons for cut blooms of *Rhododendron Fortunei*, rosy pink; and to Messrs. Lane for a fine group of *Rhododendrons* similar to those exhibited at recent shows. Several nice tricolor-leaved *Pelargoniums* were shown by Messrs. Carter & Co., besides the pretty striped Japanese Maize already noticed, as well as tastefully filled plant-cases. A number of these, likewise neatly filled, came from Messrs. Barr and Sugden. A *Dieffenbachia* from New Grenada, with dark green leaves mottled with paler green, was also shown by Messrs. Lee, of Hammersmith; *Petunias* in the way of Mrs. Ferguson by Mr. Bull; and Pansies, both in pots and as cut blooms, by Mr. James.

FRUIT.

The show of Fruit was very small. In Pines, of which there were only nine, a Queen weighing 4 lbs. 5 ozs., from Mr. Cameron, gardener to the Duke of Richmond, Goodwood, was first; an Enville, from Mr. Wallis, gardener to F. Dixon, Esq., Astle Park, was second; a Priddy Cayenne of 6 lbs., from Mr. Pater, third; and a Queen from Mr. Cavkoll, gardener to J. G. Riddell, Esq., Hermonston Grange, Worskop, fourth.

In Black Grapes, good well-coloured bunches of Black Hamburgh, from Mr. Osborn, Finchley, were first; and the same kind from Mr. Smith, Twickenham, also well coloured, second. Mr. Clement, of East Barnet, was third, but the berries were red. Black Frontignan, well coloured, was shown by Mr. Allport, gardener to H. Akroyd, Esq., Doddington Park. Good baskets of Black Hamburgh from Mr. Osborn and Mr. Allport, received first and second prizes respectively. Good bunches of Muscat of Alexandria, and tolerably ripe for this season, were shown by Mr. Turner, who was first for White Grapes; and in the same class a third prize was given to Mr. Embery, gardener to J. Drew, Esq., Hornsey, for Buckland Sweetwater. Prizes were also awarded to Mr. Tegg, gardener to the Duke of Newcastle, Chamber, for Royal George Peaches and for White Marseilles Figs; also to Mr. Hepper, gardener to C. Cannon, Esq., Hampstead, and Mr. Read, gardener to J. Hunt, Esq., Sydenham, for Strawberries. A fine

cluster of Bananas, as yet only partially ripe, was exhibited by Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet, and was awarded the first prize in the miscellaneous class; and the third was awarded to Mr. Hepper, for a very good dish of Fulmer's Black-speckled Kidney Bean. Scarlet Nonpareil Apples in good preservation were shown by Mr. Allen, Merton Road; and a brace of Harrison's Reliance Cucumbers by Mr. Rouch.

The grounds of Rockhills, the residence of the late Sir Joseph Paxton, were on this occasion thrown open to the visitors, a privilege of which numbers availed themselves.

WALL FRUIT, AND OTHER MATTERS.

I SEE by THE JOURNAL OF HORTICULTURE and other periodicals that the blossoms of wall fruit trees have not set well, and that a large proportion of them have fallen. I have seen the same with my own eyes, both under glass and out of doors. I have lately visited my old and valued friend Archdeacon Huxtable, of Sutton Waldron, near this place; and I find that the wall-fruit blossoms, both outside of and under glass, have fallen almost to a totality. It is the same in two other large gardens near here. This leads me to speak of my three old Peach trees at Rushton, the united ages of which are little short of 130 years. They have borne in nine consecutive years 4563 Peaches; and I have left them with beautiful foliage, without a sign of curl, and they are bearing 377 fine-growing Peaches in their tenth year. They should have borne 437 Peaches to make up the 5000 in ten years; but, as the trees were cut to a true balance much wall has been lost for a time. I thought it best to put them in good form before bidding them adieu; otherwise, though unbalanced, they would have had wood enough to bear the 437.

I have been told since I have been here, that one of those wall-fruit spoilers, jobbing pruners, has said that had he pruned the trees above referred to, he would not have pruned them as I have done. Perhaps not; and I may say that had he pruned them in his fashion (long-fan fashion), they never would have borne in ten years 4940 fine Peaches, nor would they have been so hale and strong as they now are. There ought to be an act of parliament to coerce such men to pass an examination before the Rev. T. Bréchaud prior to their daily journeys to slaughter the wall trees of England. Peach and Nectarine trees, both under glass and out of doors, are with rare exceptions a disgrace to the science of arboriculture; and so they will remain till men study the use of foliage, and the connection and sympathy between the heads and roots of trees.

I have been a short-pruner for years, and I am persuaded that the days of long-pruning are over—it is at least high time.

Lofty walls (14 feet), are incidentally the cause of mischief. I have had a wall built here 60 feet long (three sides of a quadrangle, surrounding a greenhouse), and I am now about to build another of 130 feet long with ten-foot wings at each end. The former is 6 feet high, and the latter will be 7 feet high. They are one brick thick, with nine-inch piers 5 feet apart, the plain surface being southwards. The latter wall will not be filled up till autumn. The former wall is filled up as follows:—Galande Peach and Rivers's Victoria Nectarine. These were brought from Rushton, and have been twice moved this spring. The former has dropped all its flowers; the latter has set well, and will have a fair crop. I recommend to novices the following Nectarines:—Victoria, Pitnaston Orange, Violette Hâtive, and Elruge. As my wall was put up very late I had to husle in trees from the nearest nursery in foliageed state. Besides the above two, I put in Murray and Violette Hâtive Nectarines; and Royal George, Vanguard, two Violette Hâtive, Salway, and Red Magdalen Peaches. I hope I have not made a bad choice. At any rate I was obliged to obtain what I could. Time is money in England, and delays are dangerous. When my 150-foot wall is up I must ask further advice before filling it up. I hope some one will give me a few hints as to a further selection of Peaches and Nectarines. I do not care about Apricots. The Moorpark is the only good one that I have ever eaten, but the tree is much given to canker. A hint on Plums would be gratefully received. The best I know of are the Transparent Gage, the old Green Gage, and Jefferson's.

To my recently deceased friends Lord and Lady Rivers I am indebted for my residence here. It is a sweet homestead—a fair house, nice green field, nice orchard, two nice gardens surrounded by beautiful Hornbeam hedges, and a nice lawn with small fishpond, and twelve sloping beds for Roses in front of the drawing and dining-room windows. The house is in the Vale of Black Moor, the country beautiful, and the views

are magnificent; still I miss my old friends sadly, removed from me—or from whom I am removed.—W. F. RADCLIFFE, *Okeford Fitzpaine.*

THE PINE APPLE.

AND MR. THOMSON'S TREATISE ON ITS CULTIVATION.

(Concluded from page 341.)

AFTER some prefatory remarks on the introduction of the Pine Apple into this country the author at once proceeds to the subject of Pine-houses, and gives diagrams of those which he recommends. These differ little from the structures often met with. For summer use he recommends a span-roof running north and south, for winter a lean-to, and for suckers a common lean-to pit. Hot-water pipes beneath a bed of rubble are in all instances advised for giving bottom heat, and other pipes to warm the atmosphere. The only feature in construction which Mr. Thomson seems to insist upon is a somewhat steeper roof than is often given, in order to insure all drip being avoided. He prefers a number of small houses or pits to one or two large ones, as the proper culture of each section can then be more effectually carried out; some judicious suggestions are also made with respect to a steaming apparatus, or rather the mode of supplying moisture to the atmosphere. He by no means condemns the old and popular plan of growing Pines on a bed of fermenting leaves and tan; on the contrary, he appears to advocate it but for the trouble it gives. I may add that the pits at Archerfield, or at least a part of them, are so heated, and the fruit produced show that the plan suits them.

In the next chapter are given descriptions of some of the Pines most generally grown, with remarks on their merits. Those most approved of by the author are the Queen, Smooth-leaved Cayenne, and Black Jamaica; but other kinds are spoken of, as Hurst House Seedling, Bennett's Seedling, White Providence, and Charlotte Rothschild. Some other kinds, as the Black Prince, Enville, Antigua, &c., are named as being less recommendable.

Soil is the next subject treated on, and here there is something on which comment may be made. Mr. Thomson advises a soil containing a large amount of sand. What will our London friends say, who have so long been of opinion that Norwood loam was so excellent for this purpose? and what will some of our west-country friends say, who collect their Pine soil from upland moors and the precipitous rocks fringing the coast? while not a few think the compost cannot be too much enriched with sheep and deer-dung, and other substances having a tendency to make the soil retentive, and which are, therefore, the very reverse of sand in their effect, and yet good results follow in each case. The subject of soils, however, is by no means so fully understood as it ought to be, and perhaps the mode in which so many of us describe them may lead to an erroneous opinion. A soil containing a large percentage of sand is regarded as a light soil, and yet sand is about the heaviest substance bulk for bulk of any of the ingredients that constitute fertility. A bushel of pure sand is very heavy indeed; the term "lightness," perhaps, is applied to it in consequence of the small quantity of water which it will imbibe. On that account Mr. Thomson prefers it, or rather the class of soil which contains a large proportion of it, as being the most suitable for the Pine Apple; and the production of fruit of Smooth-leaved Cayennes upwards of 8 lbs. in weight, and of Queens weighing more than 5 lbs., with accommodation that was by no means the best for the purpose, gives his opinions a claim to respect, these weights not being solitary instances, but of frequent occurrence. Now, on soils less attention has hitherto been bestowed than on other points of Pine-Apple management, and great extremes exist in the kinds used. I have seen the best spit of a pasture field carefully selected for that purpose, while a friend of mine in the west of England, who grows very good fruit, obtains his soil in rough tufts (more than four-fifths herbage at the time), from the rocks. I am uncertain what is the nature of these rocks, and this, doubtless, is an important point; but they are either slate, granite, or limestone. I have also seen a mixture used in which chopped moss or sphagnum formed quite one-half the material. So many other points tend to modify the action of the soil in which the plant grows that it is difficult to give a decisive opinion on this matter, but I am inclined to think that Mr. Thomson's views are the best. The mode in which he uses it, and other particulars all invaluable to the grower of this fruit, are well explained.

The author next commences to detail his course of treating the plants, beginning with the sucker, and the modes which he adopts to obtain a quantity of them where an increased supply is needed. A plain and practical essay on their treatment follows, pots being advised even when they are intended to be afterwards planted out. The next stage arrived at is that of succession plants, and the treatment required by these renders a more lengthened narrative necessary in order to fully explain what is likely to be wanted of them in future, whether they are intended for summer or winter fruiting; and the propriety, nay almost necessity, of having separate compartments for them is pointed out, as well as the proper treatment to pursue in each case. A careful perusal of this chapter cannot be otherwise than useful to the young gardener whose experience in the cultivation of this fruit may not have been extensive, while there is much in it well worthy of the attention of those in everyday practice. The condition of the ball of the plant at the time of repotting, and what to do with it, are next dealt with, and the all-important subject of heat, both top and bottom, is fully discussed; then follow remarks on summer and winter management, occupying several pages, in which due attention is bestowed on watering and other points of management, and the reader now arrives at that important feature the treatment of the fruiting plants.

It is more especially at this stage that Mr. Thomson urges the necessity of having two or three compartments, so as to give the different sets of plants the treatment necessary to ensure their fruiting at the proper time; and by doing this Pines may be had all the year round. In most cases Mr. Thomson recommends a sort of period of rest prior to starting each set of plants into fruit, this period differing according to circumstances. The varieties most suitable for starting at different seasons are also stated, and the whole system of management lucidly explained, particularly as regards heat; and directions for the application and withholding of water are given in language that cannot be misunderstood.

Closely following the section just noticed is one on retarding the fruit, and keeping that which is ripe as long as possible—both matters well worthy of consideration, though not more so than that which is treated of in the next division of the work—viz., How to keep up a constant succession of ripe fruit all the year round. The author's observations on this subject are so good that I shall extract a short paragraph. After describing the proper time to secure suckers, he says, "In June and July I always endeavour to start a quantity of the true Smooth-leaved Cayenne. This is a noble Pine when well grown, being unsurpassed for appearance and long keeping after it is ripe, and swells better after October than any other Pine I know. The Black Jamaica is also a most useful Pine for winter swelling, and probably is unsurpassed for flavour at the dullest season of the year. The Queen is comparatively worthless as a winter Pine compared to these two; it does not swell kindly, and is always dry and juiceless compared to them."

Further remarks on the treatment of the sets of plants intended for the different periods are followed by a few notes on such plants as miss fruiting; and then the author gives a notice of the planting-out system, which, although he does not condemn it, he does not altogether approve of. He considers that the limited control which the manager has over the plants in this system is poorly compensated by the less amount of trouble which they give as compared with those in pots. This, doubtless, is true, and may account for there being, perhaps, fewer Pines grown on this principle now than there were ten years ago. At that time I believe those at Trentham were so grown, as well as those at the Royal Gardens, Frogmore, which the author quotes as a good example. However, the mode of management is given that those who may feel disposed to grow Pine Apples on the planting-out system may know how to proceed.

Perhaps the only exceptional portion of the work is that relating to the insects which sometimes attack the Pine—viz., the white and brown scale, and mealy bug. The writer acknowledges never having had to conquer these formidable opponents, and I certainly pity those who have. A remedy, though not Mr. Thomson's, is put forth on good authority, and is said effectually to destroy the white scale and mealy bug without disturbing the plants. I would certainly much prefer clean ones to those so treated; but if the remedy is effectual the discoverer is entitled to the thanks of Pine-growers. I may, however, remark that the destruction of the white scale is not an impossibility, for many years ago a case occurred in my practice which proved that this insect is unable to endure what the plant will do. At a place where Pines were not grown,

but where a mixed collection of plants was kept up, a young lady had three or four Pine suckers given her, and she wished them, for the sake of curiosity, to be kept amongst the flowering plants in a sort of half-stove half-greenhouse, in which were some creepers infested with white scale. I need hardly observe that the Pine suckers were speedily attacked, and the place not being at all suitable to their growth, it was determined to throw them away. This was in midwinter, and some hot dung being fermenting in a heap for forcing-purposes, instead of throwing them away I buried one of the best of them in the hot dung, after removing the pot, soil, and a great portion of the roots. It remained there about twenty-four hours, was then slightly washed, potted, and placed in a frame heated by hot water and intended for Melons, which, in fact, occupied the rest of the compartment. The half-starved insect-covered plant speedily showed symptoms of doing better, and grew on rapidly, showing fruit and ripening in the same year one of about 4 lbs. weight, which was very good for a Queen. I mention this case as one that came under my own management, for, like Mr. Thomson, I have never had a collection of plants infested with this insect to deal with, and I confess that I should look with dismay on the appearance of a single scale insect on any one of those I might have in charge.

One further observation is proper to make on the work in question. Mr. Thomson thinks there must be a spurious variety of the Smooth-leaved Cayenne in cultivation as well as the true one, and in describing the kinds which he recommends I promised to allude to this. Having in my own practice always regarded the Queen and Black Jamaica as the all-important varieties, I cannot give any opinion on this subject; but I never saw the Smooth-leaved Cayenne in so good a condition as I did last year at Archerfield, Dalkeith, and one or two other places in Scotland. Mr. Thomson and his brother at Dalkeith grow it more extensively than they do Queens, and they estimate its weight when fully swelled to be about 1 lb. per pip—i.e., a fruit eight pips in height would, when ripe, weigh as many pounds. Queens were thought very good if they weighed half a pound per pip. The Smooth-leaved Cayenne, as grown by Mr. Thomson, of Archerfield, was certainly a very fine fruit, and the plant not by any means unwieldy. Three plants in pots, with fruit not quite ripe, were sent to the Edinburgh International Show last September, and were, perhaps, as much admired as anything there. The fruit would, I believe, average from 7 to 8 lbs. or more, the plants being dwarf and in pots by no means large. Queens were equally good, and, I believe, one or more in Mr. Thomson's collection exceeded 5 lbs.

In drawing this review to a close I can heartily recommend the perusal of Mr. Thomson's little work to all practical gardeners. However successful they may have been in the particular branch of culture on which it treats, they will most likely find something fresh; while on the less experienced it has a double claim, as the practice of one of our best Pine-growers is clearly and ably laid down in all its details. If proof were wanting of the good quality of the fruit grown at Archerfield, I would only say that last September several English gardeners witnessed what was to be seen there. I remember meeting at that place a nobleman's gardener of high standing in one of the midland counties, and after looking at the Pines and inimitable flower-beds he cast his eyes around, and then on the ground, and inquired if there was not something peculiarly favourable both in the soil and climate to produce such results, or rather help to do so; yet few places would seem to be less favoured by its situation, which is on a plain of considerable extent, bordering on the German Ocean and Firth of Forth, the latter being only a mile off. That a combination of circumstances favoured in some degree the out-door department would appear certain, but there can be no question that from the truly artificial conditions under which the Pine Apples were placed, they might almost as well have been grown on the top of Ben Lomond as where they were, if managed with the same skill. That Mr. Thomson's Treatise may not meet the approbation of every one is very likely; but I for one would be anxious to see what criticisms are made upon it, and trust no one will be deterred from making such if they deem them necessary. My own views may be gleaned from the preceding observations, which, though directed to the work in question, were, nevertheless, based on a visit to Archerfield.—J. ROBSON.

NEW PLANTS AT MR. BULL'S.—In the account of these, at page 339, by a slip of the pen, *Schistocasia Porlei* is placed

among the Orchids, instead of being included, as it ought to have been, among the Aroids.

TOBACCO—ITS CULTURE.

[We have so many readers in America and our colonies, and so many who are emigrating ask from us information relative to the culture of the staple crops of the countries whither they are proceeding, that we purpose occasionally publishing details which will supply the particulars they require.—Eds.]

There are some thirty species of *Nicotiana*, only two of which, *N. tabacum* and *N. rustica*, are much cultivated. Of these two, only one is generally grown—*N. tabacum*. Of this there are several varieties, each of which possesses qualities peculiar to itself, or qualities derived from the different soils, modes of cultivation, curing, &c. Each cultivator selects such variety as he thinks best adapted to his soil, climate, &c. The variety which will be noticed in the following is the Connecticut Seed Leaf. This, when properly grown on suitable soil, attains a larger and more perfect growth than any other known variety; the stem is erect and strong, attaining 7 feet in height or more; the leaves often grow to the length of 4 feet, and 2 feet in breadth. The flowers are trumpet-shaped, and of a rose colour. The seed-balls or capsules are ovoid, from one-half to three-quarters of an inch in diameter, divided into cells compactly filled with minute seeds, which, when well ripened and properly saved, will retain their germinative properties ten years, as found by experience. This variety is the one grown for, and the most suitable for wrappers to fine cigars. It also combines the various qualities of hardiness, fineness of leaf, and quick maturity, so desirable in a climate like the northern and western States. Skillfully grown on properly enriched soil, it will yield 2,800 lbs. to the acre, in extreme cases 3,000 lbs.

SEED.—At topping-time let a desirable number of the earliest and best plants go without topping, keeping all the lower branches broken off. When the general crop is ripe, strip the leaves off and tie the stem to a stake. It is ripe when, without freezing, the capsules are quite brown; cut the seed with about 2 feet of the stalk, and hang it in a dry place, where it will not be disturbed. When wanted for use, select the best bolls, rub out the seed with the hands, and screen through a fine sieve.

SEED-BED.—A warm, sheltered situation, a deep, rich, sandy loam, free from weeds or seed, is the best. Plough or spade, in the fall, 10 or 12 inches deep; make level by harrow or rake, and cover closely with Tobacco stalks laid on straight. In spring, as soon as the ground will work well, remove the stalks and plough 3 or 4 inches deep, making a very narrow furrow-slice; and into each furrow, as turned, strew guano or hen manure quite freely; work in on the surface three pecks to a bushel of poudrette to the square rod, and make the soil as fine and the surface as smooth and level as possible. Use a table-spoonful of seed to each square rod of bed; mix it with sand, and sow broadcast very evenly; finish by rolling with a heavy roller. Make the beds 10 or 12 feet wide, that being a convenient width in working; cover with brush to keep fowls off, and to prevent radiation. To weed the bed, remove the brush, and stretch a plank across the bed, using blocks under the ends to prevent the middle from settling on to the plants when you sit on it to weed. The bed should be kept carefully clean of all weeds.

SOILS.—A sandy loam, neither very light nor heavy, is the best; the farther removed from this the poorer the quality of Tobacco. Ground which has been cultivated with some hood crop is the best, and produces the finest-grained leaf; such should be ploughed twice, the first time in April or early in May, the second about the 20th or 25th of May. It should be well done; ploughing deep and with narrow furrow-slices, and, between the first and second ploughing, using the harrow to keep down weeds, &c.

MANURES AND THEIR APPLICATION.—The main reliance is to be placed on farm or yard manure. Tobacco grows quickly, is a gross feeder, and needs large quantities of the best manure to feed on; from twenty to twenty-five cords per acre should be well fined, spread broadcast over the surface (after the second ploughing), and cultivated and harrowed to thoroughly incorporate it with the soil to the depth the cultivator runs; this, with the addition of the fertilisers hereafter mentioned, will, with such careful culture as here recommended, produce the best results. This application of manure should be made about a week previous to transplanting. Lay off your rows with a suitable marker, 3 feet 10 inches apart. Now with a coverer,

which hauls the soil into light ridges, follow the marker; this leaves a place for the row as smooth as a roller would leave the surface. Take a light wheel (or one may be attached to the coverer), and fasten blocks to the outer edge 2 feet apart, and have a shaft and handle for hand use. Go over the ridges with it, marking the place for hills; with the hand hoe open the holes and drop into them guano and plaster, mixed at the rate of 150 lbs. of the former to 250 of the latter to the acre; cover 2 inches deep with fine soil and spat with the hoe, leaving it a little depressed for setting the plant.

TRANSPLANTING.—A cloudy, moist time is the best; although by watering the ground, and again watering the plant after setting, it may be done with safety in very dry weather, if thoroughly done. The plants should be carefully raised from the bed, using care not to mutilate them or break off their roots; a dinner fork, to run down beside the plant, by prizing up will loosen them so that they may be raised by the leaves. Place them in a basket ready to drop out by a careful boy, one on a hill. Care should be used in setting to run the roots straight into the ground without doubling them, to the depth they grew in the bed; the plant when set should be left as nearly as it grew as possible, no pinching of the bud or crowding the leaves together. In pressing the soil down around them a little depression of the plants cannot well be avoided; this is advantageous rather than otherwise.

CULTIVATING.—In a few days the plants will have taken root; the cultivation should then be commenced with the horse cultivator, followed by the hand-hoe, stirring the soil but little close around the plants. The cultivation should be repeated once in ten days, till there is danger of injury to the plants in going among them with the horse and cultivator; then further culture should be done with the hoe, keeping the ground perfectly free of weeds. As the leaves are what the crop is grown for, they should be well cared for, in order that they may not be injured at any stage.

ENEMIES.—First is the cut worm, which eats off the plant; the only remedy is to hunt it out, kill it, and supply a new plant at the first opportunity; this worm will need to be looked after often, till all danger of injury from that cause is over. Next we have the green or Tobacco worm, which commences when the leaves are the size of your hand, sometimes. This worm comes from the egg of the Tobacco-miller—known in different parts as Hornblower, Humming bird miller, &c., a miller about the size of a humming bird, of a dusty brown, with orange-coloured spots on his body, a trunk-like tongue 5 or 6 inches long, and when not in use closely coiled between his feelers. The eggs are a trifle lighter in colour than the leaf, about the size of a pin's head. The worm is very small when first hatched, and very likely to escape unobserved; a small hole like a pin-hole in the leaf will reveal its retreat on looking at the under side of the leaf. The remedy is the same as in the former case, by destroying them and keeping the plants free from them, or they will have a ragged appearance.

TOPPING.—Here is where the best judgment of the grower is called into exercise; experience can only determine the right point, so that all the leaves will mature and none be wasted. After the plants have run up to flower, the tops should be broken off, leaving them uniformly 2½ feet high. All the plants will not be ready for topping at the same time, so some run a little past and others are topped sooner. All should be topped previous to August 20th.

SUCKERING.—This consists in breaking off the shoots which start from the stalk at the axils of the leaves; these should be kept broken off as fast as they make their appearance; the last suckering to be done immediately before cutting.

CURING-BARN.—A separate building, arranged expressly for the purpose, is the best; but stables and sheds can be used for want of better. A building 30 by 32, with 15-foot posts, will hang an acre of good Tobacco, by hanging three full tier and a part tier on the purlin beams. A basement room under a part or all of the building is convenient for stripping, packing, &c. One half of the siding should be hung on hinges, and there should be a ventilator in the roof to admit of free ventilation, &c. The cross beams should be arranged equally distant for resting the poles for hanging on. For poles get straight poles 5 or 6 inches in diameter, or sawed scantling 2 by 5; these are arranged 10 inches apart when filled with plants.

CUTTING AND HOESING.—The Tobacco upon ripening assumes a thick, harsh, or brittle appearance, turns a spotted-green colour, &c. It should be cut before it become dead ripe, as it wastes less and cures more evenly. A good hay-knife or backed saw is the best to cut with; the plant is cut close to the

ground by leaning it over a little and placing the knife under the leaves, and by an easy dab the stalk is severed from its roots and laid gently down to wilt; after wilting partly it is turned over to wilt on the other side, when it is ready to cart to the barn. A platform waggon is best to cart on; lay it on crossways, but uniformly one way. To save handling, two teams or waggons are necessary, with sufficient help to hand it from the lead to the one who hangs. Commence by tying your twine to a plant, and place it by the side of the pole; on the opposite side, about 6 inches along, place the next, and secure it by a single turn of the twine from left to right, thus placing them alternately till the pole is filled, when the twine is secured. Good strong hemp twine is used. Cutting should be done when the dew is off; and all cut before noon, housed by that time, or it may sunburn. A clear hot sun will burn it often in twenty minutes. The Tobacco all hung, give it all the ventilation possible in fair weather, without allowing the sun to shine on it directly; in rainy or foggy weather close it in. The sweat or pole burn happens in about two weeks after hanging if the weather be sultry and damp. Clear, drying weather or tight buildings are desirable at this time as a preventive.

STRIPPING.—When the sap is all dried out of the leaf-stem the Tobacco is cured; and when a mild, damp time comes open the barn that it may become moistened; when it can be handled without rustling take it down, carry it to the basement, and bulk it free from the ground, butta out, tips lapping about one-third. No more should be bulked than can be stripped out in three or four days, or it may be injured. It is sorted into two or three lots, according as it is more or less perfect; each sort is kept separate, and done up in hanks of about three to the pound; the butts of the leaves are kept even and bound neatly with a leaf wound round and tucked into the hank; neatness in this part often adds several cents per pound to the value. The Tobacco, after being stripped, should be bulked soon, to keep it from drying out.

CASING.—Most of our large, successful growers case their own Tobacco, after lying a short time in bulk; a mild time is chosen, when it is pressed into boxes 2 feet 4 inches square, by 2½ feet long inside measure; 375 lbs. are pressed in each case, with a lever or screw for the purpose. The hanks are laid in butts to the end of the box, away one inch, to prevent crowding against the end; the leaves are straightened out smooth, to keep them from pressing in wrinkles. The following season the Tobacco undergoes a fermentation or sweat, which makes it Tobacco ready for manufacturing.

By high manuring and thorough culture, Tobacco may be continuously grown on the same ground; but it is generally at the expense of the fertility of the rest of the farm. A better way is to make it one in a course of rotation; in this way an improvement in the fertility of the farm is constantly going on.—(W. H. WHITE, in *Albany Country Gentleman*.)

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

CYMBIDIUM HOOKERIANUM (Dr. Hooker's Cymbidium).—*Nat. ord.*, Orchidaceæ. *Lin.*, Gynandria Monandria. Native of the Sikkim Himalaya. Flowers large, green; lip yellow, spotted with reddish purple.—(*Bot. Mag.*, t. 5574.)

THELIDIA CORONATA (Small-leaved Thelidia).—*Nat. ord.*, Vacciniaceæ. *Lin.*, Decandria Monogynia. Native of the Andes. Flowers dull red.—(*Ibid.*, t. 5575.)

MICROCACHYRS TETRAGONA (Strawberry-fruited Cypress).—*Nat. ord.*, Conifereæ. *Lin.*, Diccia Monandria. Native of Tasmanian Mountains. Cone fleshy, and brilliant scarlet.—(*Ibid.*, t. 5576.)

IRIS RETICULATA (Netted Iris).—*Nat. ord.*, Iridaceæ. *Lin.*, Triandria Trigynia. Native of Georgia, Persia, &c. Flowers rich purple, and richly perfumed like the Violet.—(*Ibid.*, t. 5577.)

CEROPEGIA SORORIA (Kaffrarian Ceropogia).—*Nat. ord.*, Asclepiadaceæ. *Lin.*, Pentandria Monogynia. Native of Saffaria. Petals reflexed like the Cyclamen's, pale green laced with purple. *Sororia* (sisterly) is one of the absurd specific names occasionally bestowed. It was given because this was sent to Dr. Harvey by a lady who had previously sent him another species, *C. Bowkeri*.—(*Ibid.*, t. 5578.)

TACSONIA VAN VOLXEMI.—See p. 329.—(*Floral Mag.*, p. 289.)
RESE—*Black Prince*.—Flowers dark purple and crimson,

beautifully blended. Introduced by Mr. W. Paul, Waltham Cross Nursery.—(*Ibid.*, pl. 290.)

RHODODENDRON DENISONII.—Flowers white, tinged and dotted at the base with lemon colour. Introduced by Mr. B. S. Williams, Nurseries, Holloway, who states it to be the progeny of *R. Dalhousianum* crossed with *R. Edgworthii*.—(*Ibid.*, pl. 291.)

HYACINTH—Sir Henry Havelock.—Lobes of the corolla intense purple, edged with mauve. The colours blending give quite a new tint.—(*Ibid.*, pl. 292.)

PEAR—Van Mons Léon Leclerc.—“This excellent Pear was raised by M. Léon Leclerc, at Laval, in the department of Mayenne, France. It is not known exactly what was its parent, for M. Leclerc had sown seeds of St. Germain, Glou Moreau, and Easter Beurré; but judging from the appearances we should be inclined to suppose that it has taken its origin from the St. Germain. The tree first produced fruit in 1828; and in October, 1837, M. Leclerc sent specimens of the fruit through M. Vilmorin to a meeting of the Paris Horticultural Society with the following note:—

“M. Van Mons has not only handsomely accepted the dedication of this Pear in declaring to me that he regards it in all respects of the first rank, but also, by a refinement of politesse, he has exacted that the name of the raiser who paid him this compliment should be placed in continuation with his own, for the sake of distinction. This is, then, the Pear Van Mons Léon Leclerc. This explanation was necessary to justify such a designation.”

“The fruit is of the largest size of dessert Pears, and is of an oblong shape, uneven and undulating in its outline. The skin is a pale dull yellow colour, covered with russet dots and traces of russet. Eye open, with spreading segments, set in a very shallow basin. Stalk from 1 to 1½ inch long, set on the end of the fruit with a slight depression, or obliquely without any depression. Flesh yellowish white, buttery and melting, very juicy, sugary, rich, and deliciously flavoured.

“A dessert Pear of first-rate excellence, which ought to be grown in every collection. It ripens in the end of October and during November.”—(*Florist and Pomologist*, v. 89.)

GLAZED AND FLUED WALL.

HAVING seen in “our Journal” some statements by your correspondent “BETA” adverse to protection for wall-fruit-tree blossoms, I have been induced to send you the following description of how I have seen Peach and Apricot blossoms protected at Haggerstone Castle, Northumberland, and the trees successfully fruited about 380 miles north of London.

Fig. 1 is an end section of a Peach wall 290 feet long, which had, some years ago, been artificially heated at no little expense and trouble by keeping sixteen furnaces going, but they have been left unheated for years. *a a* Are smoke flues; *b* is a board 1 foot broad, to which the canvas or hexagon netting is fixed; *d* one of a line of pegs to which the netting, by means of rollers attached, is lightly secured at about 18 inches from the ground.

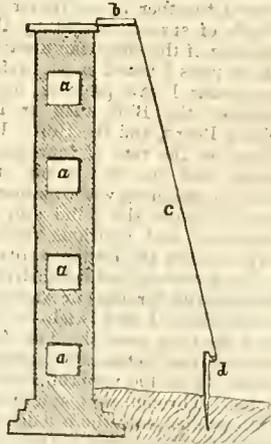


Fig. 1.

In fig. 2 *a* is an iron stay projecting from the coping of the wall, on which the moveable board, *c*, is fixed by means of iron bolts at *b*. At *d* there is a narrow piece of wood fixed about half an inch from the front of the board; on the face of this the canvas, *e*, is nailed. The water is thus thrown a little over the canvas, which carries it safely to the bottom.

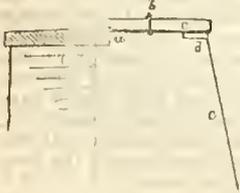


Fig. 2.

The netting is made in lengths of about 10 or 12 feet, and each side is furnished with a number of brass rings, and by running a cord alternately through these

rings they are tightly laced together. Thus fixed, they are perfectly secure from wind, and with some slight exception, perhaps, at the joinings, the covering is waterproof. The openings at the bottom and joinings, and the innumerable meshes of the netting, give abundance of ventilation. There is plenty of room below the net to permit of the cultivator pursuing his operations without its removal. The Peach trees on this wall are supported by means of iron eyes fixed along the lines of bricks quincunx fashion, and pegs made of the young growths of the Privet. This, I think, is a great advantage over nailing, as it does not break up and disfigure the wall, and affords but very little harbour for insects.

The Apricot wall is protected in the same way as that on which the Peach trees are trained, and last year the fruit set very well, but dropped off by the hundred in the stoning process, owing, I have no doubt, to the roots having penetrated so far below the drainage of the border as to come in contact with water stagnant and cold as in winter. Owing to the extremely low and level character of the situation of these walls, it is quite impossible to have drainage perfect; but, notwithstanding, fair crops of fruit are generally taken from these walls.

The canvass is put on when the buds begin to show colour, and is not removed till the fruit is swelling and all danger of frost past. Protection in this locality is not only beneficial, but absolutely necessary for the security of the crop. The spring months are generally cold, with some boisterous, cold, cutting winds from the west directly off the Cheviot Hills, the tops of which are often covered with snow well into the spring months.

This mode of protection offers some advantage to people living in localities where it is desirable to have the trees as much forward as possible with safety, so as to give them all the advantage of the summer months for maturing young wood and fruit buds for another season. I am convinced that with such protection, and shallow sloping borders perfectly drained, and protected from frost and excessive wet during the winter by means of wooden shutters, Peaches might be grown with success further north than they are.

“BETA” seems to attribute the cause of his failure to the protection, when he says “I will protect no more,” but I think the extreme wetness of the season is sufficient to account for any failure in fruit not setting. Our trees here (in Kent), were merely protected with Laurel branches, &c. Peaches have set very well. Apricots have not done so well, but they are not at all to be called a failure.—Bon.

A PEEP AT THE WOODS IN ODD PLACES.—No. 1.

WHITE CEDAR, BLACK ASH, AND BASSWOOD.

“WHAT a splendid pile of fencing you have there, William!” I exclaimed to a friend as we stood on the edge of a clearing, looking at a large pile of beautiful, clean, straight Cedar cut down and trimmed, ready for being converted into rails, or, to use my friend William’s expression, “hauled and ready for splitting.” Before, however, we split and use up these individual trees, come with me (in imagination), and let us have a look at the beautiful Cedar tree in its own habitat; and though we cannot expect to make its acquaintance with dry feet, still I feel convinced that the beautiful object itself, with the delicate perfume it sheds around, will amply repay us for all the trouble we shall be obliged to take to obtain a sight of it.

The clearing, on the edge of which I have mentioned that we were standing, occupied one side of a hill, on the crest of which we were stationed. Looking behind us we saw a piece of brown, cold, untidy-looking land covered with a litter of leaves, small twigs, and chips, with the marks of more than one huge fire; and at every few yards, or feet, as the case might be, a forlorn stump, standing some 2 or 2½ feet out of the ground. This was the clearing, and to help to fence it off the Cedar trees had been chopped (*Anglicè*, felled), and hauled or brought out of the bush to one spot. Looking before us who can describe the beauty of the glimpses, caught between the trunks of some noble timber trees, of a lovely woodland view, in one direction contracted to the distance of a few hundred yards by the richly wood-clothed hill opposite us, and in another stretching away for miles, displaying a glorious prospect of alternating hill and valley, curiously diversified and ornamented by patches of corn, Potatoes, or some other crop, appearing like small islands planted in a lovely green sea of native forest and bush? Between us and the opposing hill

runs the lively, brilliant, and clear river Credit, rapidly, and at times noisily, hastening its way to Port Credit, on Lake Ontario, where its crystalline waters are lost in the waves of that noble, inland, fresh-water sea. Oh, beautiful river! many a musing hour have I spent sitting on the semi-prostrate trunk of some mighty monarch of the forest, which in his palmy days had stood on your bank, and with his huge limbs softened the blustering wind lest it should too roughly ripple the smooth surface of your glassy waters; and now in his hour of age, when his roots can no longer give him support, and the rude wind has conquered and overthrown him, he leans lovingly o'er your stream, and though decaying seems striving to protect you still. Here have I sat and watched the mingling tints of the foliage of the Cedar and Hemlock, the Elm, the Ash, and the Bass-tree, the tall straight Hickory, and the lofty Pine. Twining amidst these, and adding greatly to the general wildness, luxuriance, and loveliness of the sylvan banks of the river, the elegant Vine casts its graceful arms, embracing and linking together the limbs of various trees, and converting the whole into a closely woven arbour, affording cool and grateful shade during the burning hours of the noon of this climate. But, alas! the truth must be told: this shade harbours swarms upon swarms of those fearful and ferocious creatures of prey and torture vulgarly called mosquitoes, whose venomous stings are more to be dreaded than the surly bear or howling wolf.

And now being on the bank of the river, let us proceed along it, in spite of the mosquitoes, till we reach that low swampy piece of ground which we see in the next bend of the river below us, where the foliage looks so dark and green, though enlivened with the lighter hue of a Birch tree and the curious soft-looking branches of the Hemlock. This is a Cedar swamp; and here, in the fall of the year, and when harvesting work is ended, we shall find the settler, with what help he can raise, hard at work chopping—i. e., felling Cedars for posts and rails. The White Cedar (*Cupressus thyoides*), grows, when not too crowded, as a beautiful cone of darkish-green foliage, the apex of which is of a much lighter green in consequence of the young shoots. It is an evergreen, and varies in height from 20 to 60, 70, and even in very favourable circumstances to 80 feet or more, though this last height is comparatively rare. The lower boughs droop most elegantly towards the ground in graceful sweeping curves, and the whole tree is an object of great beauty, most pleasing to the eye, and on account of its delicious and delicate perfume equally so to the olfactory organs. The tree grows sometimes with a straight grain—i. e., perpendicularly, but more generally spirally. This can at once be detected on looking at the bark, and the straight-grained trees are chosen as more readily split into rails and laid together for that purpose, whilst those of spiral growth are better for posts, and, consequently, where required, reserved for that use. One would imagine, to look at a standing tree, that it would be almost impossible to split any trunk so full of branches; but such, with this tree, is not the case, for it splits, especially such logs as are of straight grain, cleanly and readily, and any one accustomed to the use of the axe and tolerably skilful, can without the aid of wedges split a log of from 6 to 12 inches in diameter, and from 12 to 15 feet long, though, of course, where the grain is spiral there is more difficulty, and wedges would be required for logs not exceeding a foot in diameter. The bark is rather rough externally, of a pale brown colour, and burns quickly, and with a very pleasant perfume. The wood is light and soft, though very durable, long resisting the attacks of the weather, being but very slightly affected by changes of damp and dryness, and is, therefore, invaluable as fencing, especially where the fences are made, as they mostly are in Canada, by merely laying the rails one upon another in a zigzag manner, so that they overlap each other, the lowest rail resting on the ground.

The next most valuable wood for this purpose is very much heavier, denser, and closer-grained, and grows on higher ground than the Cedar; it is called Black Ash (*Fraxinus sambucifolia*). The White Ash (*F. americana*), I will only mention as being very similar, in fact, almost entirely like our own English Ash, and the timber is valuable for similar purposes to those for which we use it at home—viz., cart and coach building, &c., possessing great strength and elasticity. The Black Ash is different, its main value being for fencing-purposes, since in other respects it is inferior to the White, being a smaller tree and the timber of greater specific gravity, and with less elasticity and toughness. The foliage is of a dark green and has a sombre appearance, the bark and wood being also of a deeper and duller hue than those of the White Ash.

What a lovely collection of plants is this at the foot of this Black Ash, under the boughs of which I am now standing on the hill side, looking between the trunks of the grand sylvan monarchs surrounding me, at the pure crystal streamlet running from a pretty little spring, which wells up close by and hurries with noisy chattering impatience to join in the dance and whirling race of the river which rolls at the base of the hills. Growing on the bank just over the spring, in a soil composed of decayed leaves, bits of broken twigs, and dead moss, on the top of a stiff clay, we see a beautiful dark green shining-leaved little plant, and stoop to pluck it, but the stem seems tough and not easily broken, and in pulling it away we bring with the leaf a long bright yellow fibre, and on turning up the leafy mould with our hands we are astonished to find a perfect nest of these little yellow fibres. This plant is the Golden Thread (*Coptis trifolia*), and we find it taking a place in the pharmacopoeia of the United States as an astringent, though from my own experience one of very slight value, but still of great repute amongst settlers and backwoodsmen. What is this running away in long creeping shoots, and sending up every here and there, at irregular intervals, most elegant miniature Fir trees with one long top shaped very similarly to a fox-brush, the whole plant being of a beautiful bright green except the top, which shades off gradually to a greenish yellow, and standing from 6 inches to a foot in height? It is a Club Moss, and is, like the Golden Thread, a plant said to possess medicinal qualities, being used in ointments, &c. Now, let us move a little further up the stream, though before we go we will just pluck this pretty, spreading, five-armed plant with its delicate black stem and horizontal fronds; it is one of Flora's fairest productions, and is one of the Maiden-hair Ferns.

As we proceed up the river we come to what in this part of the world is termed a "jam"—that is, the river is blocked up and rendered impassable to any boat or other floating thing, and it occurs in the following manner:—Some tree or log—that is, trunk of a tree cleaned up and ready for use, in floating down the river grounds in a shallow place and sticks fast, generally at one end, whilst the other end swings round and rests against the bank, thus narrowing the river's channel; again, another log comes and may go through and pass on its journey downwards, but most probably is caught by the log already fixed; others, again, come down the stream until another ground or is canted across the gap between the end of one fixed log and another, or a fixed log and the opposite bank; in this manner the dam across the river is complete, and small bushes, limbs of trees, logs, and trees themselves, are all stopped and woven together in an inextricable mass, which not even the floods of spring, caused by the breaking up of the ice and melting of the snow, can always remove, since on one or two of these jams I found most perfect little gardens, and on one in particular I saw growing, one species of Fern, five kinds of Grasses, the Blue Flag or Iris, the wild Clematis or Old Man's Beard, and the Hop. Under this garden the clear river flowed at the rate of four miles an hour, its soft murmuring ripple and the cool shade of the lofty trees growing on its edges, combining with the marked silence of the woods at mid-day to strike the mind and impress upon the senses that luxurious and delicious feeling of sweet and calm repose, expressed in the Italian words *dolce far niente*.

As, however, that decidedly enervating feeling is hardly compatible with forcing our way along the banks of that part of the river where I now wish to lead you, let us throw it aside, and pushing over the jam follow me into this low piece of ground lying between the margin of the river and a lofty bank some 300 or 400 yards off, and comprising an area of about two acres. Through this, and amidst a dense thicket, run various little gullies, each the bed of a clear streamlet, the whole neither more nor less than a network of small branches running off in various directions from the bed of the river, which is herein no part deeper than 4 feet. Well, we will hop over these little brooks and thrust our way through the bushes, for those who love Black Currants will be amply rewarded with as many as they choose to eat, and all for the trouble of picking, since the greater portion of this plot of land is so closely overgrown with this shrub as to render it a difficult matter to make a passage through the bushes. The fruit, though of small size, is sweet and of good flavour, but still being wild is quite neglected by the inhabitants, for nobody seems to think it worth gathering or preserving. This, however, is not the case with the Raspberry, which grows wild all along the dry banks of the river, in dense thickets; for its fruit is gathered and used in various ways, making a delicious preserve, though requiring more sugar

to enable them to keep than is needed in boiling down the similar fruit of our gardens. By the side of the Black Currant bush we find two kinds of Elder, a white and a black sort, both bearing enormous bunches of beautiful deep purple, almost black berries, though those of the black Elder are alone used, as there is a prejudice against the white one, the berries of which are considered poisonous; for my own part, however, I could not discover the poison, for being very fond of Elder-berries I ate handful after handful of them without the slightest inconvenience. I may here mention, that I noticed amongst the Raspberry thickets a larger number of humming birds than anywhere else.

Now, kind reader, I have brought you to a pretty little clearing on the margin of the river which here divides to embrace a lovely islet covered with Alder bushes, which are in turn covered with Vines bearing small sour bunches of black Grapes. In the centre of the clearing, which is about 15 yards wide by 20 long, stands a lovely specimen of the Bass tree (*Tilia americana*), tall, straight in its trunk, and with a handsome spreading head, amongst the boughs of which, twining round and supported by them, we see the elegant wreaths of the Virginian Creeper, whose leaves are just beginning to take their autumnal tints of bright yellow and vivid scarlet. The Bass is a species of Linden or Lime tree, growing exactly like it, and only distinguished from it by the size of its leaves. The bark of the tree is highly useful, being employed by the Indians for ropes, and for making baskets, and the inner bark is used to make the well-known bast mats of the gardener; whilst the wood, which is white, soft, and easily worked, is of the greatest use to the coach-builder for panelling, being capable of taking an excellent ground for painting and varnishing, as it is not apt to warp or shrink.

At the foot of the particular tree I here mention, I once spent a very merry afternoon. Some young men with whom I was acquainted, proposed a sort of picnic in this little clearing, and we were all to bring such articles as we could obtain towards a *dîner à la campagne*, and meet here to cook and dispose of our various supplies. When the hour arrived at which we had appointed to meet, I was the first upon the ground, but was speedily joined by the others, all variously burdened. For my part I bore a supply of drinkables, in the shape of whisky, also a loaf of bread, some tobacco, and pipes; next came a friend with a quantity of Potatoes; another brought pepper, salt, and beer, and pockets filled with Apples; and now appear two together, bearing with them a goose, and a sucking pig; another brought two chickens; and again another some very fine fresh-caught trout—in fact, all brought something, none came quite empty-handed, and rare fun and boisterous laughter proclaimed each fresh arrival. But, lo! what a mistake, although three or four thirsty individuals had remembered to bring cups, not one in the whole party had thought of table knives, forks, spoons, or plates! Well, well! we are in the bush, and at least four miles from the nearest log hut, so we must do the best we can, for it will not do to lose our feed for such trifles as these: so, no man being without a heavy knife of some sort, all set to work, one party as plate manufacturers, this article being formed of a square piece of Bass bark cut round with the knife and then pulled off the tree, and another party as cooks. The cooking was done in the following manner, and to any one loving tender, well-cooked meat in which all the gravy is preserved, I can safely recommend this process of cooking. The goose, pig, and fowls were brought just as they were to the margin of the river, and there well rolled in the mud; this mud, with the aid of some clay, was made into a thick paste, and the birds and animal were entirely enveloped in a thick coating of this, and then placed in a good hot fire, and thoroughly baked, after which they were taken out and eaten, and I must say most excellently cooked they were, and most perfectly did we enjoy our picnic, and each other's company, till late in the evening, when by the light of a beautiful moon we all rose, and in company wended our way to the village.—A SURGEON.

WORK FOR THE WEEK.

KITCHEN GARDEN.

By continual surface-stirring weeds will never make their appearance amongst growing crops; but there are some parts of the garden, such as those quarters devoted to Gooseberries, Currants, Raspberries, &c., which, not requiring continual surface-stirring, are apt to be neglected. The hoe should be kept constantly at work amongst these, whenever the sun is power-

ful enough to wither the weeds as they are cut up. *Beet*, the first sown to be thinned-out, and if there are any vacancies the thinnings may be successfully transplanted if they are carefully lifted, a long dibble used, and the root placed perfectly straight into the hole. With such favourable weather as we have had, there ought now to be a good breadth of *Cauliflowers* and *Cabbages*; keep the earth well moved amongst them. Cauliflowers in a forward state must be supplied with liquid manure, even if the ground is wet. *Celery*, a few trenches should now be made ready for the earliest crop. On soil with a wet bottom the trenches should not be made too deep, so that the plants may be nearly on a level with the surface of the ground. A dry bottom with deeper soil may have deeper trenches. In either case give the rows a good width, because the Celery should never be earthed-up until it has nearly attained a size fit for use, and, therefore, the intervening spaces may be cropped with Lettuces, early dwarf Cabbages, and Cauliflowers, all of which would come off before the final earthing. *Carrots*, where young ones are in request another sowing may be made; and advancing crops of the same must be kept well surface-stirred, and thinned-out to from 4 to 6 inches apart, as very large Carrots are seldom required. The ridge for *Cucumbers*, recommended last week, will now be in a proper state to receive the plants; let them be put in without delay, and shade the glasses for a few days. At the same time a few glasses may be sown with seeds of the Vegetable Marrow, and Cucumbers for succession, and for Gherkins. For the latter purpose, on warm soils seeds sown in the open border will suffice; but on colder soils it is better to forward the plants in pots, and have a sloping bank thrown up facing the south. Plant them near the top, and train the vines downwards, stopping them occasionally. Stop the early *Peas* as soon as the first blooms are well set. *Parsnips* require to be thinned to 9 inches or more apart if the ground is rich. Plant-out *Tomatoes* in light compost under a south wall, also *Chilis*, *Capsicums*, and *Basil*; in doing which, if they are at all pot-bound, let the roots be gently loosened and spread out.

FRUIT GARDEN.

During the process of nailing-in the shoots of Peaches, Nectarines, and Apricots, examine if there are any nails so placed as to be likely to injure the swelling fruit, and remove them. In nailing-in young shoots use strong cloth shreds of good texture, cut to a sufficient length to allow of plenty of room for the wood to swell. Sometimes short shreds are used, and bound so closely round the wood that at the pruning season shoots are found to have an indented ring, and very often a large piece of gum. Vines will now require constant attention in stopping and nailing-in. It will also be necessary to go over Pear, Plum, and Cherry trees to remove gross shoots, and to stop those not wanted for laying-in. This repeated as may be necessary during summer is preferable to the old practice of allowing the shoots to remain upon the trees until midsummer, and then cutting them back to two or three eyes. Do not forget to use every available means to keep Strawberries in a free-growing state by timely applications of water, and frequent surface-stirring.

FLOWER GARDEN.

Except in favoured localities it will be unsafe to commence planting out the bedding stock until we experience a decided change of weather. In the meantime let the plants be nicely hardened off and arranged, so that when planting-out is commenced it can be done expeditiously. Also decide what is to occupy each bed, and have everything in readiness. Push forward late-propagated stock, and endeavour to keep the whole healthy and growing slowly. Some allowance must be made in regard to the time when it is desired to have the principal display of flowers. If early, the plants will require planting more thickly, and need not be stopped; and if not before a later period in the summer, somewhat thinner; and the flower-buds should be pinched off as they appear till the plants have filled the beds. When a large quantity of hardy shrubs is annually forced, either to decorate the conservatory or drawing-room, it is not desirable to pot a fresh stock each season, as a number of the deciduous shrubs, as *Roses*, *Lilacs*, *Thorns*, *Honeysuckles*, &c., may by proper treatment be made to bloom for several successive seasons. Select, therefore, the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage. These cramped for pot-room shift into pots a size larger, using rich turfy loam, and plunge them in an open situation, that the wood may ripen early. These plants, from having been previously forced, will bloom earlier than the new stock,

of which a portion should each year be potted to replace such as become useless for further work.

GREENHOUSE AND CONSERVATORY.

Camellias making their wood should have constant shading, the house to be kept very moist day and night, and the plants frequently syringed. Pay every attention at this period to plants of climbing habit, whether festooned from the roof, up pillars, or on trellises in pots. Let stopping, thinning, training, &c., be attended to as required. Many of these plants are unproductive of blossom for want of stopping the gross shoots. Weed out the inferior specimens and kinds in the greenhouse, so as to give plenty of room to the best, and never allow the plants to touch each other during the time they are making their growth. All plants which are becoming shabby must have the old blooms removed immediately, and, if necessary, be cut back and started into fresh growth. Look well to watering, but avoid saturation, and give abundance of air at all times, unless you like to syringe, and shut up for an hour or two before 4 p.m. Many plants, such as Diosmas, Myrtles, and other things which have done blooming, if cut back and repotted will, with attention, make fine plants by the autumn. These old plants and many more are very valuable in large establishments, where many cut flowers are required for drawing-room decoration.

STOVE.

As regards the plants in this structure, thorough cleanliness, free ventilation, plenty of atmospheric moisture, and slight shading in bright sunshine, are at present the chief requisites. No means should be neglected to encourage a free growth at this period in Orchids, in order to have their pseudo-bulbs firm, well fed, and ripened betimes. Take care to secure cuttings of such plants as Brugmansias, Clerodendrons, Erythrinæ, Poinsettias, Eranthemums, and of those useful winter-flowering plants Euphorbia jaquinæiflora and Gesnera bulbosa. Continue to attend to the points of cultivation previously recommended, remembering that now is the period of rapid growth, and for supplying all the encouragements necessary thereto.

PITS AND FRAMES.

These structures will almost be done with for this spring's planting. Cuttings of dwarf Phloxes, Alyssum saxatile, Arabis, &c., must now be put in.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Prepared for trenching-down some of the winter vegetables, as Cabbages, Brussels Sprouts, some being yet good, and Scotch Cabbaging Kale, very fair as respects the young sprouts. Planted out more Peas. Some of our friends talk of thinning the rows before staking. Sowing before staking is with us of no use, and equally so with staking if the pheasants can reach through the stakes. Securely staking at once, even if that were effectual, takes more time than we can spare just now, and, therefore, we have sown a lot more under protection in semicircular drain-tiles and boxes. Those transplanted when about 3 inches in height, and staked at once, are doing well, and neither pheasants nor any other enemies have interfered with them, though hen Pheasants have such a love for us as to be sitting on a dozen of eggs close to these Peas. We have a lot of Scarlet Runners in boxes coming on well, but we sowed several rows in nice mellow soil and staked them at once, putting bushy twigs so thickly at the bottom on each side that it would be no easy matter to get at them. However, staking takes up rather too much time just now. We have also sowed Dwarf Kidney Beans for succession, and lest the seeds should be meddled with, we have a lot in boxes just coming up that will replace them, or come in before them. The gardener will pretty well be a match for any intruding enemy in the long run, but it is the time and extra labour that tell, and throw his arrangements out of joint.

Pricked out lots of Celery plants in fine soil, with a bottoming of rough rotten dung and soil, so as to have balls about the roots at planting time. Planted out Lettuces; sowed more. We like to sow thinly in rows, and not to plant much after this time. Put herb-beds in order; especially planted a bed of Spearmint, and put the tops under a hand-light to strike more plants. Spearmint is with us a shy crop, requiring renewing every year. To suit our purpose the herbs are in a corner rather moist for them, and nothing suffers more than the above Mint. We can only keep it on by fresh planting. Peppermint, on the contrary, seems to look after itself, and not seldom we

have taken the shoots of the latter for the former without any one being the wiser. Made, also, fresh beds of Sage, merely inserting slips some 8 inches long well into the ground. They will be nice plants before the head stuffing-time comes. Divided some roots of Tarragon, and will most likely fill a hand-light in a shady place with cuttings, as some people think a salad poor without a few leaves or shoots of this herb, and a few sprigs of Chervil. Sorrel also requires dividing, which must be done, as a dish of Sorrel depends for receiving approbation, even from those who like it, very much upon being grown in fresh, well-enriched soil. When all such things, and soup herbs in general, are kept in one place, it often saves many a journey and much time. To save both we generally have a little Parsley, Spinach, &c., in the same place, along with Thyme, Pennyroyal, Marjoram, &c.

Looked after Cucumbers. Set those intended for Gherkins and ridges, also Vegetable Marrows, in a frame in the meantime, to grow on until we can find room for them. Threw wood ashes and soot over vegetable seeds, and watered Cauliflowers to hasten them on, as from having our earliest destroyed by rats and mice we shall not be so early as usual. Fortunately good white Broccoli will last some time yet. Sowed the main crop of Parsley, and will sow again under protection in the end of June, and that makes us pretty well independent of the winter. See previous weeks for general details.

FRUIT GARDEN.

Run the hoe through the Strawberry quarters and borders to destroy all incipient weeds, and to give an opportunity for the rains to descend. Will take young plants from a border for the last forcing. Disbudded trees, thinned shoots, and stopped shoots in the Peach-house and orchard-house; further thinned shoots in the Fig-house; regulated the shoots and bunches in vineries—the early Vines, Sweetwaters, in a narrow pit, started at Christmas, came in in the end of April, but the glass was covered with straw covers every night. We have thinned all Grapes that need it, except a few Muscats, and they can wait a few days, as though thick enough they seldom set so very thickly as to injure one another early. Watered fully half of the borders of the orchard-house with manure water. Watered the inside borders of the vineries with drainings from the dunghill, after throwing some soot carefully over the surface. The ammonia from the soot will do good for some time, even as it escapes into the atmosphere of the house. The earlier vinery-borders outside are still covered with litter, and advantage has been taken of the little heat given off to make a temporary bed, with a rail back and front, and old sashes laid on, whilst beneath them are placed Scarlet Geraniums, that need a little strength for beds. The late vinery-border is exposed, only covered with a layer of horse-droppings, and on these, as the showers were coming, we put a sprinkling of soot, for the rains to wash down. These Vines having borne prodigiously for many years, we shall give the borders a sprinkling of guano or superphosphate. We like the latter best, because it is so safe in inexperienced hands.

Gave a good watering to the border of the Peach-house, where the fruit is swelling fast. A little red spider appeared at one corner, and we have had the leaves carefully washed with a brush and sponge. At that place the pipes come almost close to the wood and the fruit, the best of all arrangements for red spider. Here we have placed bricks set in sand on the flat pipe, and poured sulphur on and between the bricks, and also some all along the pipe. We are anxious about this spot, about half a yard, as we know how quickly this enemy spreads, and that prevention is better than cure. With the exception of two or three Strawberry plants, this is the only case as yet in which the enemy has appeared this season. There has been a little sulphur on the pipe almost constantly, at least sulphur mixed with water and a little soot to colour it, for when of a lightish colour from sulphur water alone, or from sulphur and a little lime in exposed places, so as not to be removed easily, the pipes do not throw off so much heat as when they are darker in colour. The first wet day we shall daub sulphur, made into a paint with strong soft-soap water, in open places on the back walls of houses where the sun has the chance of striking with full force. Such spots will give off sulphur fumes for a long time. Stopped and regulated Melons for fruiting, being later than usual.

ORNAMENTAL DEPARTMENT.

Out of doors chiefly rolling and mowing the lawn; weeding and rolling walks; digging beds; protecting and exposing bedding plants according to the weather, letting them have all the

nice mild showers, and protecting them from the changes of the night; potting and assisting the latest, and giving a warm syringing to the cuttings of Verbenas, &c., inserted in a bed in a frame as lately detailed, which promise to be all right in a fortnight's time; fresh arranging houses; potting Fuchsias, Geraniums, &c. Some good plants of Rollisson's Unique Geraniums had a few green fly on them; they were placed in a smoking-box and smoked, and kept there for several days, and then were cleaned and well syringed. A box, or a little close closet or room, is very useful for this purpose, as a pinch of tobacco will be as effectual as a pound or half a pound in a larger place, and tobacco is no trifle in some places where large houses are smoked, and then the disagreeable odour of the fumes lingers for days afterwards. Potted many plants, and gave more head-room, and a little bottom heat to Caladiums in a pit; shifted those in smaller pots, and started Gesnera zebriana and its varieties for autumn display. Potted Balsams and Cocksoombs, sowed more; and pricked out Stocks, China Asters, and other annuals, &c.—R. F.

COVENT GARDEN MARKET.—MAY 12.

A GOOD supply of out-door produce is now coming in, and that from under glass is also improving, although far from what we usually have at this season. Strawberries especially being very short. A few Peaches, Nectarines, Melons, and Figs of good quality are to hand this week.

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples ½ sieve	4	0	to	8	Melons..... each	8	0	to	12
Aorioots doz.	0	0	0	0	Nectarines..... doz.	18	0	36	0
Cherries lb.	2	0	3	0	Oranges..... 100	6	0	12	0
Chestnuts bush.	0	0	0	0	Peaches..... doz.	42	0	60	0
Currants, Red ½ sieve	0	0	0	0	Pears (dessert) .. doz.	0	0	0	0
Black do.	0	0	0	0	kitchen..... doz.	0	0	0	0
Figs..... doz.	8	0	15	0	Pine Apples..... lb.	8	0	12	0
Filberts..... lb.	0	0	0	0	Plums..... ½ sieve	0	0	0	0
Cobs..... 100 lbs.	0	0	160	0	Quinces..... ½ sieve	0	0	0	0
Gooseberries .. quart	2	0	0	0	Raspberries..... lb.	0	0	0	0
Grapes, Hothouse. lb.	8	0	15	0	Strawberries..... oz.	0	6	1	8
Lemons..... 100	6	0	10	0	Walnuts..... bush.	14	0	20	0

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.
Artichokes..... each	0	8	to	6	Leeks..... bunch	0	8	to	0
Asparagus ... bundle	3	0	8	0	Lettuce..... per doz.	1	0	1	6
Beans, Broad. bushel	0	0	0	0	Mushrooms..... pottle	1	0	2	0
Kidney..... 100	1	0	1	6	Must. & Cress, pannel	0	2	0	0
Beet, Red..... doz.	2	0	3	0	Onions..... bushel	4	0	6	0
Broccoli..... bundle	1	0	1	6	Parsley..... sieve	2	0	0	0
Brus, Sprouts ½ sieve	0	0	0	0	Parsnips..... doz.	0	9	1	6
Cabbage..... doz.	1	0	2	0	Peas..... ½ sieve	5	0	0	0
Capsicums..... 100	0	0	0	0	Potatoes..... bushel	2	6	4	0
Carrots..... bunch	0	4	0	8	Kidney..... do.	3	0	4	0
Cauliflower..... doz.	2	0	6	0	Radishes . doz. hands	0	6	1	0
Celery..... bundle	2	0	3	0	Rhubarb..... bundle	0	4	0	8
Cucumbers..... each	0	4	1	0	Savoys..... doz.	0	0	0	0
pickling .. doz.	0	0	0	0	Sea-kale..... basket	0	0	0	0
Endive..... doz.	2	0	0	0	Shallots..... lb.	8	0	0	0
Fennel..... bunch	0	8	0	0	Spinach..... bushel	3	6	0	0
Garlic..... lb.	1	0	0	0	Tomatoes..... ½ sieve	0	0	0	0
Herbs..... bunch	0	3	0	0	Turnips..... bunch	0	4	0	0
Horseradish .. bunch	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TRADE CATALOGUES RECEIVED.

W. Hooper, New Wandsworth.—*Descriptive Catalogue of Plants.*

James Backhouse & Son, York.—*Catalogue of Stove, Greenhouse, and Bedding Plants, Ferns, Orchids, &c. Supplement to Catalogue of Alpine Plants.*

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

CEDAR OF GOA (C. E. F.).—The Cedar of Goa will not stand frost. It requires protection in winter near London.

STRAWBERRY STALKS GRUB-EATEN (An Amateur).—The stalks of the leaves and flower-trusses are eaten through by a grub, called by gardeners the "Leather Jacket." It is the larva of the daddy-longlegs. Scratch away the earth with a knife from around each plant, and destroy the grubs you find.

BOERS (A Young Beginner).—They treat on two different branches of gardenlog. The Dictionary enumerates the species of plants and their culture. "The Science and Practice of Gardening" explains all the operations of horticulture. You should have both the volumes. (W. R.).—The third edition of "Hogg's Fruit Manual" is now published. You will have seen it noticed last week. (D. A. B.).—"The Cottage Gardener's Dictionary" is not published at our office. No additions have been made to it since 1856. (J. P. G.).—"The Cottage Gardener's Dictionary" not having had any additions made to it for the last ten years, does not include "all flowers now in cultivation."

PROPAGATING BEGONIAS AND GLOXINIAS FROM LEAVES (H. S.).—Fill a well-drained pot or pan (the latter is best for Begonias), to the rim with a compost of sandy peat and loam and silver sand in equal parts, and cover the surface with a thin layer of silver sand. Take a Begonia leaf which is about half or three parts developed, cut away the leaf-stalk to within half an inch of the blade, and insert the remainder of the leaf-stalk close to the rim of the pot or pan. Lay the leaf flat on the surface, and peg it down closely so that its nervures may be slightly imbedded in the soil, and the whole under-surface lie flat. For Gloxinias the pots should be prepared in the same manner, only the leaves must be put in around the sides of the pots like cuttings, and with their lower ends from three quarters of an inch to an inch in the soil. Give a gentle watering, and place in a mild hotbed of from 70° to 75°, and a propolisate top heat. Maintain a close and moist atmosphere, and shade from bright sun, keeping the soil moist but not wet. The Begonias will form little plants along the midribs of the leaves, and when of sufficient size the young plants may be taken with their roots, cutting the midribs on both sides, potted singly and retained in heat until established. The Gloxinias will form tubers beneath the soil, and be well rooted in six weeks. They should then be treated as old plants, and dried off towards autumn. In spring they may be potted off singly, and shoots will come from the crown of the roots, and if grown on, flowers will follow in due season.

DESTROYING COLTSFOOT AND WILD GARLIC (J. N. P.).—Your only plan will be to have the ground cleaned by a thorough plough and scarifying, and then grow a root crop, as Swedes; or you would do it much better with a year's fallow, frequently ploughing and dragging the ground. If you were to have the field well worked for a year, and in the following spring have it cleaned by manual labour, using steel digging forks to bring up the roots, and then took a root crop which required clean tillage, you would do much to clear the ground. After another cleaning from the roots of the weeds in spring, the land might be sown with grass seeds, or another root crop might be taken.

WIREWORKS (T. P.).—In No. 60 of our Old Series of THE COTTAGE GARDENER are drawings of the wireworm and its parent beetle, with notes on the modes of trapping, &c. These are all very uncertain. The mole feeds on them. If we had a garden much infested with wireworms, especially if the soil were rather clayey, we would pare and burn 9 inches in depth of the whole surface.

LIQUID MANURE FOR CELERY (M. A. H.).—When young the plants should only have water, but that abundantly. When trrenched out, as you wish to grow large heads for exhibition, you might apply the drainage from a pig-stye or stable, diluted with an equal quantity of water. In the First Volume of THE COTTAGE GARDENER, page 136, are full particulars of a very successful mode of growing Celery for exhibition.

CUCUMBER LEAVES INJURED (T. H. J.).—We found no insects, but just a possible trace of thrips. We think the markings might be made with sun heat when little or no air was given.

WHITE BEDDING PLANTS (Blume).—Centauria candidissima and Cineraria maritima are the best white-leaved plants, and the Cerastium tomentosum is the best dwarf. The Cineraria offsets or cuttings, when they become plants, will be richer in colour than seedlings. Brown's "Forester's Guide" will suit you.

INSECT ON PEACH SHOOT (E. S. B.).—Although on your Peach tree it is the Vine scale (Coccus vitis). Brushing it with a creamy mixture in water of soft soap and flowers of sulphur will destroy it.

BLISTERED PEACH LEAVES (Wyeside).—This distortion is evidently caused by a bursting of the sap vessels in the leaves by exposure to the late spring frosts. Peach trees under glass never are affected with blistered leaves. Thanks for the seeds.

GARDENIA NOT FLOWERING (H. G. E.).—The plant is, perhaps, in too high a temperature, and has not been sufficiently rested in winter, for it expands its blossoms very freely if afforded a mild bottom heat. We grow our Gardenias in a vinery and plunge the pot in February in a bed of tan, and they bloom freely. They require an abundant supply of water when expanding their blossoms, and should be kept dry and cool during the winter; at that season they do well in a greenhouse having a temperature ranging between 45° and 50°.

EVERGREEN OAK NEWLY TRANSPLANTED (E. M.).—We fear you will only save the tree by reducing the head considerably, and this should be done at once. That, and copious waterings during dry weather, are the only measures calculated to keep the tree alive, and we think that the manure will not be of benefit, but, on the contrary, hinder the formation of fresh fibres. No young growths ought to be removed.

SHRUBS FOR PLANTING UNDER FIR TREES (Idem).—The following we find do fairly:—Berberis repens and Darwinii, Berberis or Malonia aquifolium, Laurustina, Aucuba japonica, common Laurels, Privet, Snow-berry, and Yew, also Rhododendrons, none of which are of very quick growth.

PEACHES AND APRICOTS NOT FRUITING (A Constant Reader).—The cause of your trees not fruiting is the imperfect ripening of the wood, which may be occasioned by the roots being in a cold, wet, rich, deep border. If the trees are not old we advise you to take them up next autumn and replant, not covering the roots to a depth of more than from 4 to 6 inches. The very rich and heavy soil put on the bed would do harm by placing the roots farther from the surface. Bad pruning would not hinder the fruiting, and the frost you say did not injure the fruit. Look to the roots.

WATER MELON CULTURE (A Novice).—Sow the seed now in pots filled with rather strong loam, and place in a mild hotbed of from 70° to 75°. When the rough leaves show put off the seedlings and grow them on treating them in the same manner as Melons.

INARCHING BOWOOD MUSCAT VINE ON WEST'S ST PETER'S (*A Lady Subscriber*).—The flavour of the Bowood Muscat would not be altered by inarching it on West's St. Peter's; but it would not force so well as if it were inarched on the Black Hamburg, for West's St. Peter's requires nearly, if not quite, as much heat as a Muscat. The Bowood Muscat would do well on the Black Hamburg for forcing or any other purpose, and its fruit would keep as well as if West's St. Peter's were employed as the stock.

PLANTING VERBENAS (*F. J.*).—The Verbenas, to make a line in a ribbon-border from 9 to 12 inches wide, should be planted at these distances apart, according to size.

HYACINTHS IN BEDS (*Idem*).—Your soil being light and well drained the Hyacinths would not be in the least injured if left in the ground. In autumn you may take them up, remove the small offsets, dress the bed, and replant on the same day. If the soil be wet you may take them up immediately after the foliage has turned yellow.

COCOA-NUT FIBRE REFUSE AS A MULCH (*Idem*).—The cocoa-nut fibre refuse, and not the fibre, should be put around Rose trees. It resembles brown sawdust. Do not use the fibre, which resembles bristles. The refuse dust would form an excellent mulch for Carnations.

CUTTING GRASS WITH A MACHINE (*Idem*).—The grass is best cut when dry, or when the dew is off in the morning. A slight amount of damp is not objectionable. We have not used the machine in the evening with advantage, for the labour power then lags.

CANNA INDICA (*P. H.*).—The soil most suitable for this out of doors is a moderately light loam, enriched by a dressing of leaf mould and well-rotted manure; but any description of soil will do if it is in good heart and not a stiff, cold, wet clay. The situation should be warm, and, though open, it is best if sheltered from westerly winds, which injure the foliage. Well harden off before planting out.

DATURA METELOIDES FLOWER-BUDS FALLING (*Datura*).—We think that the flower-buds fell from warmth and dryness inducing red spider, and from want of sufficient moisture in the soil. A moderately light and well-drained soil enriched by a good dressing of well-rotted manure or leaf mould is best. During dry weather, and particularly when swelling their buds, the plants require to be well watered. The plants which you keep in a greenhouse should be well syringed to keep down red spider, giving a light and airy situation.

CANNA TUBERS NOT GROWING (*Idem*).—The Canna tubers have probably lost the eyes; but they will sometimes not start until late in May. They ought to have started before this in a hotbed.

CHARLES LEFEVRE ROSE WEAK (*Idem*).—The plant is very weak. You will do well to cut it and the dwarfs in pots closely to two eyes, and when these break retain the stronger, rubbing the other off.

DECIDUOUS CYPRESS (*Idem*).—The deciduous Cypress is *Taxodium distichum*, and the specimen you sent belongs, as you suppose, to that species. The Evergreen Cypress is the Upright Cypress of the south of Europe, and is known as *Cyperus sempervirens*. The Deciduous Cypress, or *Taxodium distichum*, is a native of North America. *Taxodium*, or *sequoia*, *sempervirens*, is the Redwood or Bastard Cedar.

ORCHARD-HOUSE ASPECT (*Inquirer*).—For a span-roofed house let its sides face as nearly as possible east and west. For a lean-to, the nearer one side faces the south the better.

GOLDEN-LEAVED IVY GERANIUM FOR EDGING (*Hedera*).—Plant 14 inches from the edge, and the plants from 9 to 12 inches apart.

ARRANGEMENT OF A GREENHOUSE (*John Bull*).—We approve of your raised border at the back of your house, and the planting it as you propose with six Camellias; but you will injure your Camellias by having creepers above them also on the wall, which is only 12 feet in height. The *Stephanotis* will not do in winter in a temperature of less than from 55 to 60, and that would be too much for the Camellias. You might have two brick pits, say 18 inches square, at each end of the border at the back, and in these plant *Passiflora Colvilli* and *racemosa ærulea*, and take them along the top of the wall until the Camellias filled the place. The other trailers you may want we would put against the rafters of the roof of the house. The house would be best with a walk all round, the border at back, and shelf in front, which would leave you room for a three-foot bed or stage in the centre.

STRAWBERRY FOR AN EAST BANK (*W. B. W.*).—Most varieties would do well on the bank if the soil is good. We have had Black Prince, Keens' Seedling, and Carolina Superba doing well on not very steep slopes. For a very steep and dry bank the most suitable are the Alpine Strawberries.

PURPLE SPINACH (*Idem*).—The name of Purple Spinach is *Atriplex hortensis rubra*. It may be sown now in drills as for Spinach, and the seeds covered with light soil. When up thin out to 6 inches apart. To become bushy it requires to be frequently stopped, though when allowed to grow it forms a fine plant 4 to 6 feet in height on good soil, and is very handsome, having a sub-tropical appearance. The inflorescence is curious, and equally ornamental with the foliage.

LOBELIAS FALLING (*J. C. M.*).—We can only account for the Lobelia cuttings falling from your putting in the flowering parts, and we have not the least doubt they damped off from keeping the soil very wet. We find that old plants do not give cuttings that take root so freely as those from plants a year or so from the seed. Our practice is to save the best of the plants raised from seed in the spring, colour, size of bloom, and compactness of plant guiding the selection. If taken up with balls in autumn they winter more safely, and give stronger and better-growing cuttings. Lobelias may be continued by cuttings from year to year, but the plants wear out, and most of the failures of Lobelias are to be attributed to this. Put in none but strong cuttings of the parts not showing flower. They will grow well.

ANTS—WIREWORMS (*J. P. F.*).—For ants, see what we said in our last Number, page 353. For wireworms, see what we say to-day in answer to another correspondent.

NAMES OF PLANTS (*J. E. B.*).—1, *Drymoglossum piloselloides*; 2, *Asplenium marinum*; 3, *Athyrium Filix-femina var. cristata*; 4, *Asplenium ebeneum*; 5, *Niphoobolus Lingua*. (*Barbora*.—*Daphne pontica*. (*Quiz*).—1, *Polypodium vulgare*; 2, *Saxifraga crassifolia*. (*H. G. E.*).—The shrub is *Porsythia vridissima*, and the bulb a variety of *Narcissus pseudo-Narcissus*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of Loudon for the Week ending May 12th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 6	30.216	30.188	62	43	53	49½	W.	.00	Very fine; cloudy; fine throughout.
Mon... 7	30.221	29.998	65	32	55	50	S.W.	.00	Slight haze; fine; very fine.
Tues... 8	30.267	29.880	64	44	55	50½	S.W.	.05	Very fine; overcast; rain at night.
Wed... 9	29.802	29.778	70	40	56	51	W.	.02	Rain; cloudy and fine; fine at night.
Thurs.. 10	29.940	29.916	70	44	53½	51	W.	.11	Dusky and white clouds; cloudy; fine at night.
Fri... 11	29.699	29.399	69	39	55	52	S.W.	.15	Heavy rain; white clouds; hoisterous; hail shower.
Sat... 12	29.785	29.543	63	33	55	51	W.	.04	Rain; cold showers; fine at night.
Mean	29.981	29.806	65.14	39.28	54.93	50.71	..	0.37	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY AS A SOURCE OF INCOME.

POULTRY is something more than it appears to be in the show-yard. Without desiring in any way or measure to take from the pleasure of exhibiting, or to deprive it of its character as a hobby, we cannot but think of poultry also as an article of food, more especially now when the subject seems to be forced upon us.

Carried to the full extent of its capabilities, poultry would contribute largely to the food of the country, while rearing it might eke out a scanty income; but we are afraid we must give up the last. It would almost appear that those who suffer from the most inconvenient ailment of small incomes are also subject to constant attacks of false pride, which forbid them to use any efforts to increase their means, except such as come within the scope of positive gentility. When a subject like that we are writing upon is mentioned, they rejoice in their ignorance, and protest "it is a thing in which they do not take the slightest interest," while they wonder at opulent neighbours who follow such things zealously. As indications

of character, perhaps the fact that they do may also explain the difference in the means of the two parties.

There is, however, another class who have made a feeble attempt, and given it up at the first disappointment. There is in this, as in everything else, something to learn from those who do for a livelihood that which is followed as a hobby by others.

We often think it would be wise if poultry-keepers followed the example set them by the gentry and many of the nobility, who, at Covent Garden, become the rivals, and often the successful rivals, of the professional growers of forced fruit and vegetables. We know a titled lady in the midland counties who pays all her poultry expenses, and has a profit left from the sale of eggs alone. We will grant this may be an exception, but we look with the greatest pleasure on the practical utility of the balance-sheets that appear from time to time in our columns. A paragraph of practice is of more worth than a volume of theory. Every one of these balance-sheets will make a convert, and each of the latter will add to our stock both of food and knowledge.

What is the cause of the disappointment of those who have given up keeping poultry after one failure?

First, Having heard that spring chickens are unusually dear,

and having three hens that have promising broods, there is a sort of Almagest calculation—"Each hen has ten chickens, and these are worth at least 4s. each. For thirty chickens this will be £6; the hens will lay again directly, and second broods may not make as much, but they will sell well—say half price, that will be £3; extra eggs will pay expenses, and my three hens will pay £9, £3 each." This dream is not realised, and then the pursuit is thrown up in despair, and that which affords a pleasant employment and will realise a small but almost certain return, is relinquished, because it will not carry out an ideal profit.

As market poultry will be that which finds a certain sale, we would speak of it. It is with poultry as with everything else, that which is produced in advance of its regular season is the most remunerative, but there is one universal condition tacked to all—it must have maturity. Thus, in the month of April, there are tens of thousands of spring chickens about; they are spring chickens, inasmuch as they are hatched in the spring; but they are not saleable for lack of size till the summer; they are not fit for market till June. The spring chicken that is valuable must be mature and fit for table purposes in April and May. It must be of good size and fit for sale in the spring, being as large as it would naturally be in the summer. This quality makes its value. The small spring chicken, so called because it is hatched in the spring, does not bring the largest price because there are thousands like it; but that which is hatched between November and February, and fit for market in April and May, having all the quality of the spring chicken and the size of a fowl, is valuable, and realises a large price because it is rare. Size is gold when joined to youth and good quality. We believe this will give the key to many past disappointments and prevent future ones. Those, however, who cannot give the attention necessary for rearing and fattening spring chickens, will find summer fowls remunerative. The demand for eggs and poultry generally increases yearly, and there is no doubt it will find a ready sale at all times. The fact of supplying the market does not interfere with exhibiting. On the contrary, the winners of the winter may often be chosen from among the market chickens of the spring.

SOUTHERN POULTRY SHOWS.

This is a subject which possesses peculiar interest to the exhibitors and lovers of poultry residing in the part of England south of the midland counties. The different letters which have appeared concerning poultry shows in the south have, I am thankful to say, ended in something better than words. Permit me a little space about a show that is to take place near Bristol in August next. I ask this, as our good friends in the north can walk alone, nay, do run alone, on the poultry show subject; but in the south there needs every encouragement and help, even the little my pen can give.

There is, then, to be a Show on the 22nd of August at Kingswood, near Bristol, attached to the Cottagers' Horticultural Society, which it appears comprises six parishes. This Society was only formed in 1864; but it is not only youthful but vigorous. It has this year been determined "to add to the attractions of the Society's programme an exhibition of domestic poultry; and to enhance the value of such exhibition, and to enable the cottager, for whom this is more particularly intended, to judge of the merits of first-class poultry, it has been resolved to offer prizes open to all England." This is well. In other respects all seems promising. Patrons, Vice-Presidents, and Committee are numerous and influential. There are special prizes for the cottagers' flowers and fruits—sensible useful prizes; among them "a pair of boots [I hope they will fit the winner], a set of garden tools, a spade, and a prong for working potatoes." May it never turn up a diseased one! Now, these prizes are a thousand times better than useless things. When I turn to the poultry part of the schedule I find for the cottagers of the district suitable money prizes, with an extra 10s. for the best pen. Then come prizes of 10s. and 5s., first and second class respectively, for amateurs; and "open to all England," first prizes of £2 2s., and second of £1 1s. These will doubtless draw together some excellent birds. But this is not all. Mr. Rodbard offers "two prizes of the value of two guineas and one guinea for the best cockerel of any variety, to be exhibited separately." Thus, then, all appears very favourable. May it be fine weather, may there be plenty of birds and plenty of visitors; and then I am sure

we shall enjoy Wednesday, 22nd of August, at Kingswood.—
WILTSHIRE RECTOR.

As one who has repeatedly grumbled at the non-existence of southern poultry shows, which, in the words of our *Primo Minister*, have indeed been "conspicuous by their absence," allow me to congratulate my brother fanciers that "the old order changeth," and that henceforth we have the promise of a better state of things. I take up the last Number of "our Journal," and instead of having my bile disturbed, as the "Wiltshire Rector's" was by reading with dismay a long list of Yorkshire shows with outlandish names, culminating in that crackjaw name of Heckmondwiko (!), I now see with a gradually broadening smile of satisfaction a goodly list of southern, eastern, and western cities, shortly to echo with the "cock's shrill clarion." There is Woodbridge, in Suffolk, with its working Secretary Mr. Dallinger; and a "genuine fellow," a thorough poultry-fancier, is Mr. Wright. Then there are Bury St. Edmunds, and Qheinsford, and Ipswich. Bravo! say I, to the pluck of the East Anglian fanciers! Turning southward—we will not stop at Maidstone, a "close borough," I fear, as regards poultry, limited with sundry other restrictions to Kentish fanciers; and Poring, where they only show Dorlings!—we pass with a sigh the Crystal Palace, scene of former glories, tempting one to paraphrase Moore's lines, for there, indeed—

"We seem like one
Who treads alone
Some poultry show deserted;
Whose guests are fled,
The chickens dead,
And the manager departed."

Proceeding southward Brighton offers a more cheering spectacle; and though last year the cattle show there, given up on account of that delightful "rinderpest," carried with it in its ruin the poultry show, still we have reason to hope that another Brighton show will rise like the phoenix from the collapse of the old one. The "South of England," at Shoreham, greets us with a high-sounding title. May it float as lightly on the waves of success as the name of its projector, Mr. Cork, would bid us augur! But, Westward, ho! for the stately spire of Salisbury attracts us to that ancient city. There in a few weeks will be gathered such a "cock parliament" from all parts of England, as to make old "Mother Birmingham" herself jealous! But from the more distant west we hear of other shows. Kingswood by smoky Bristol has raised its standard. Calne has a well-earned name for the love of fowls, and a Gloucestershire show blooms in the future! Southampton, too, is "no mean city" for a gathering of the feathered tribe. Lastly, I must not pass over one of, if not the very best of, southern shows, and which may be pronounced in the language of the poultry judges, to be "good at all points!" Thrice in three consecutive years has the writer journeyed, on a pleasant summer's day, to the annual gathering of the North Hants, now the "Hants and Berks Agricultural;" twice at quaint old Basingstoke; once at scholastic Winchester did we show our respect for the Show, and give ourselves a treat.

"Hæc olim meminisse juvabit."

We will not say "what our birds did," as we wish to be modest and leave all the "erowing" to them. But we will say, that though our day at Winchester followed the day upon which, like all the world, we kept what "Punch" calls "the feast of Darbe" upon Epsom Downs, yet the Winchester day was to us as jolly as the other! Remember that we (for there were a party of us), were poultry fanciers! Now, Mr. "WILTSHIRE RECTOR," we all owe you a good turn, for "many's the time and oft," that you have entertained us; so here is a wrinkle for you in return. Go and see the "Hants and Berks" Show at Reading next month. If it is at all like its predecessors, you will find your fare from Wilts a good investment, repaid in what I know you like—seeing folks enjoy themselves wisely and well! To my brother fanciers let me say, You have a liberal prize list, good accommodation for birds, a first-rate Judge, and in Mr. Henry Downs, the "Head Centre" of this (not Fenian lot), Poultry Brotherhood, a most obliging and able Manager. A good list of prizes calls for a good entry, and a good entry or collection is well worth looking at. So when the 15th of June arrives, may the weather be "royal," and may I with all who love poultry "be there to see!"—
BRABIA POTRA.

WE, southrons, must rejoice in the prospect held out in your

last week's Number by "W. B." I trust that all of us will try by good entries to make the show a success, and then probably we may have it annually. How our friend "WILTSHIRE RECRO" must rejoice at the prospect! His "grievance" seems really to be dwindling away. Why, here, he will have Salisbury and Reading, and now a show proposed in Gloucestershire! Still, much of the success or otherwise, must depend on southern exhibitors coming forward freely as competitors. I trust "W. B." will be able to induce our local railway, G. W. R., to be "moderate."—Y. B. A. Z.

RAILWAY CHARGES.

I SHALL have altogether about 110 names to append to the memorial; all, with the exception of those subjoined, having already appeared in the pages of "our Journal," it is useless occupying the space by again inserting them or the memorial.

I have to thank your correspondent Mr. P. Warren for a very valuable suggestion; and I will immediately put in hand another memorial, to be signed by officials of poultry shows. I should only be too glad to receive the names of persons who would undertake the presentation of these memorials, but as yet I have only heard from one person; in default, I must be content with the post-office. It is only since I have been mixed up with this effort that I have learnt the great value of birds to railways. Why, on some lines they are far more valuable than passengers. One exhibitor writes me that if he goes by third class from his place to London he is charged 4d.; if he takes a bird with him the bird is charged 6d.; if he sends the bird and books it, 9d. Under such circumstances the shareholders possibly sing, "Would that all passengers were birds!" "Punch" may well dress the Cochins up in trowsers as men, they are more valuable sometimes.

The following are the additional names:—

Rev. H. J. Baily.	Mr. Charles Cowburn.
Mr. Wilfred Bowly, 5s. paid.	Rev. G. Raynor.
Capt. H. B. Lane.	Mr. Matthew Dimsdale.
Mr. Wm. Herdley.	Mr. F. G. Phillips.
Mr. Francis Broemel.	Rev. F. Taylor, 10s. 6d. paid.

—JOSEPH HINTON (Y. B. A. Z.).

EPWORTH SHOW OF POULTRY, &c.

ON Friday the 4th inst., the first Exhibition of Poultry, Rabbits, Pigeons, Canaries and other Song Birds was held at Epworth, in a large marquee, on the premises of Mr. T. Docker, of the King's Head Inn, who kindly lent his paddock for the occasion. The Show was a complete success, and even exceeded the most sanguine anticipations of the promoters. Being the first of the kind held in the town, it was partially speculative; but through the indefatigable exertions of Mr. W. N. Hudson, the Honorary Secretary, and Mr. J. C. Adley, the Treasurer, the experiment was crowned with success. The Exhibition was open to all England, and the number of entries was two hundred, several of them from distant parts of the country.

SPANISH.—First, W. H. Wheeler, Carlton, Notts. Second, R. Newbitt, Epworth. Commended, R. Newbitt.

DORKINGS (Any colour).—First, —Sleadmore, Epworth (Grey). Second, A. M. Aspinall, Althorpe (Grey). Highly Commended, —Sleadmore (Grey); W. Harrison, Belton; R. Bentley, Hatfield Moors. Commended, T. W. Dawson, Epworth (Grey).

GAME (Any variety).—First and Second, F. Styles, Crowle. Highly Commended, W. Harrison (Black Red); J. Hodgkinson, Hull; R. Bentley.

COCHIN CHINA (Any colour).—First, W. H. Wheeler. Second, W. F. Josling, Maltse Cottage, Chelmsford Partridge.

HAMBURGH (Any variety).—First, C. Marsden, jun. Second, W. Harrison (Golden-spangled). Third, S. Gravel, E. land (Golden-pencilled). Highly Commended, J. F. Loversidge, Newark, Notts (Silver-spangled). Commended, C. Marsden, jun.; C. Linchcliffe, Keadby (Silver-spangled); R. Bentley.

BANTAMS (Any variety).—First, E. Toder, Little Carlton, Newark (Black Red). Second, Messrs. S. & R. Ashton, Mottram, Manchester. Highly Commended, E. Toder (Dorkings). Commended, F. Styles.

ANY OTHER VARIETY.—First, J. Hodgkinson (Brahmas). Second, G. Oldfield, Epworth.

ANY BREED.—Cock.—First, J. Hodgkinson (Pile). Second, J. Kowbottom, Belton (Black Game). Third, R. Hornsby, Doncaster (Game). Highly Commended, F. Styles (Brown Red Game). *Hen.*—First, —Sleadmore (Grey Dorking). Second, H. Chesnan, Epworth (Dorking).

DUCKS.—First, Mrs. Chulton, Belton. Second, A. Fallowfield, Epworth. Highly Commended, J. Hodgkinson; R. Bentley.

TWELVE EGGS.—First and Second, J. W. Taylor, Cove, Haxey. Third, E. Nicholson, Epworth Turbury. Fourth, Miss B. E. Kusling, Epworth. Commended, M. Bramhill, Epworth; Mrs. Cliff, Holmes, Epworth.

RABBITS (Any colour).—First, Messrs. Hanson & Wagstaff, Thorne. Second, C. Gravel, Thorne. *Buck.*—First, Messrs. Hanson & Wagstaff (Black and White). Second, E. E. M. Roys, Ightfield, Whitechurch.

Doe.—Second, Messrs. Hanson & Wagstaff (Sandy and White). *Weight.*—Highly Commended, E. Newbitt.

PIGEONS.

CARRIERS (Any colour).—First and Second, H. Yardley, Market Hall, Birmingham. Highly Commended, R. Bellamy, Leven, Beverley (Black). Commended, Messrs. Hanson & Wagstaff (Black).

POWERS.—First, F. Key, Beverley. Second, E. Brown, Sheffield. Highly Commended, C. Adley, Epworth (Red). Commended, C. Adley (Blue).

TUMBLERS.—First, E. Brown (Almond). Second, R. Bellamy (Almond). Third, C. Gravel. Highly Commended, —Lowther, Doncaster. Commended, —Lowther.

FANTAILS.—First, F. Key. Second, H. Yardley. Highly Commended. —Taylor, Middlesborough. Commended, —Lowther.

JACOBS.—First, Messrs. Adley & Brock, Epworth (Buff). Second, H. Snusball, Gedney. Highly Commended, Miss Taylor, Temple Belwood (Yellow). Commended, H. Yardley.

BARRS.—First, G. Woodley, Thorne. Second, H. Yardley. Highly Commended, E. Brown, Sheffield. Commended, C. Hayeroff, Thorne.

ANY OTHER VARIETY.—First, F. Key (Trumpeters). Second and Fourth, H. Yardley. Third, C. Adley (Owls). Highly Commended, E. Brown, (Swiss). Commended, Messrs. S. & R. Ashton.

SONG BIRDS.

CANARIES.—Cock.—First, G. Crosby, Epworth. Second, Miss M. Hunter, Thorne. Third, R. P. Read, Epworth, (Marked). Highly Commended, J. Smith, Epworth (Yellow); W. Harrison, Belton (Yellow). Commended, Miss S. Hartley, Leeds (Green); J. Smith, Epworth (Yellow).

GOLDFINCH.—First, J. Wrigley, jun. Thorne. Second, D. Daubney, Sandtoft. Highly Commended, Miss A. Hudson, Epworth.

LINNET.—First, Master W. H. Butterfield, Epworth. Second, J. Wrigley, jun.

ANY OTHER VARIETY OF SONG BIRD.—Cock.—First, T. W. Dawson (Goldfinch). Second, J. Lindley, Epworth (Thrush). Third and Fourth, T. H. Capes, Epworth (Ring Ouzle, Tree Pipit). Highly Commended, L. Clarke, Belton (Mule).

JUDGES.—W. Wood, Esq., of Sheffield, and J. Morton, Esq., of Hull.

IS RYEMEAL A SUBSTITUTE FOR POLLEN?

SOME eighteen months ago I was not a little amused by a discussion which took place in this Journal regarding the carnivorous and omnivorous propensities of bees—whether they could, like "the lords of the creation," dine on roast beef, and breakfast on mutton chop or tender chicken. This grave question having been referred to your valued correspondent "R. S.," was by him subjected to the infallible test of experiment, and the result was a complete acquittal of our little favourites of the gross charge so unjustly preferred against them. Since then, the gustative predilections of bees have again been the subject of calumny, originating, apparently, from an Italian source. In the beginning of the present spring a small parcel was forwarded to me by a friend, containing three very curious-looking cakes. On opening the accompanying letter I was informed these were specimens of rape oilcake for feeding bees, recommended by M. Masso, an Italian apiculturist, who, according to the newspaper paragraph enclosed, made the rare discovery that his bees collected therefrom "balls of provisions which they stowed away, and so continued until the flowers re-appeared in the spring." Very wonderful! thought I; but I shall soon see. I hastened to the apiary, tried it in all forms, but found that my Italian bees had no liking for such bovine food. A few after boggling at it for an instant retired, seemingly much affronted at the indignity offered them.

"But what has all this to do with ryemeal as a substitute for pollen?" asks my reader. "Have you tried it?" Yes, I have, and, like M. Masso's rape oilcake, my bees will have none of it. It is quite true numbers became as white as millers by traversing through it, and several got themselves loaded with regular pellets, the dust having accidentally collected in the little baskets on the thighs, so that to all appearance they looked like bees covered over and laden with the natural pollen of flowers. As these entered the hive I could not help smiling at the completeness of the illusion. I fancied a few tried to nibble at it, but they soon left off, being unable to discover its use.

Such being my experience, I would feel obliged by any of your correspondents who have tried this alleged substitute for pollen kindly favouring us with the results of their experience regarding it. Dzierzon, I believe, was the first to make the discovery, and so distinguished an apiarian could not, I imagine, be well deceived in the matter. Several other German bee-keepers are also said to have used ryemeal, and likewise wheat, with good results; and Langstroth, too, has indorsed it with his recommendation, though it does not very clearly appear that he himself practically tested its value.

In a spring like the present, unparalleled for its unpropitious and ungenial character, when little or no pollen could be collected from flowers, a substitute, if such there be, would be an invaluable adjunct to the usual kind of feeding resorted to, and, therefore, it is desirable that apiarists should know how far, and in what way, Dzierzon's discovery may be made available, and if rye-mel can be really appropriated by bees, and used as a substitute for the pollen of flowers.—J. LOWE.

A BEE-KEEPING NOVITIATE.

I PURCHASED A SWARM in a common stock hive on the 4th of June last year. It swarmed on that day, and weighed, with hive and floor-board, 15 lbs. About a fortnight later I cut a hole in the top of the hive, and put on an adapter, as directed in Payne's "Bee-keeping." The top of the hive being round, I had to use some mortar to get a level surface; the mortar and adapter weighed 4 lbs., making the whole weight of swarm, hive, floor-board, and adapter 19 lbs. I put on a super, but the bees did not work in it, and after removing it in September the hive weighed 37 lbs. Whenever I speak of the hive please to understand I mean the whole together, hive, board, and adapter. I now wanted to increase the weight to 42 lbs. by feeding; but now came a difficulty, for I dared not lift up the hive to put food under. I made a small box with one end of glass to put over the hole in the top of the hive. I then took an empty sardine box, which held just half a pound of syrup, and cut a very thin piece of deal to fit it, boring it full of holes. This piece of deal floats in the box, and rises and falls with the syrup. The small box being full, I one evening, with trembling hand, pushed it under the box on the top of the hive; it was soon black with bees, and on looking through the glass in the morning I saw the food was all gone. I at once took it out, and filled it again. But now I found a fresh difficulty. After one or two feeds I found that as soon as I withdrew the box to fill it the bees came pouring up, and when I wanted to push it under again I dared not do so, being afraid of hurting the bees, but considerably more afraid of their hurting me. I then managed in this way: After waiting a few hours I put the box under, and then bored a hole through the top of the large box, directly over the centre of the small one. I then pushed through a piece of indian-rubber tubing, and by means of a small funnel I could then fill the box at pleasure. By these means I fed my hive up to 43 lbs. On the 24th of December it weighed 41 lbs., on January 29th 37 lbs., on March 29th 34½ lbs., on April 16th 32½ lbs., on the 20th 31 lbs., on the 23rd 30½ lbs., on the 25th 30½ lbs., on the 28th 31½ lbs., on the 30th 31 lbs., on May 2nd 30½ lbs., on the 3rd 29½ lbs., on the 4th 29½ lbs., and down to the 8th the weight has been stationary.

Will you inform me whether it is usual for bees to lose weight so late in the season, as I expected them to gain long before this, and whether you think mine are going on all right, also when you think I may put on the super? I wish to prevent them swarming this year.—J. R. BERTON.

[You evinced considerable ingenuity in overcoming the difficulty which you experienced in feeding your bees; but all and more than all the advantages of your apparatus are obtainable in a much more simple and convenient form by the use of an inverted bottle. All that is necessary is a common pickle-bottle, filled with food, and tied over with a bit of cap net, and inverted over the central aperture in the top of the hive, which should be previously covered with a piece of perforated zinc. A perforated block of wood about 5 inches diameter, and fitting closely to its neck, is an important adjunct to the feeding-bottle, obviating, as it does, all risk of a capsizing, and effectually excluding marauders.]

The recent unfavourable weather is the cause of your bees remaining stationary, and we should regard the first favourable change as the signal for putting on a super.

We know of no work exactly answering your description. Most bee-books give more or less reliable particulars of the natural history of the insect. Much information may also be derived from a perusal of Kirby and Spence's "Entomology," and there are good articles in the last editions of the "Encyclopædia Britannica," and Chambers' "Information for the People." Huber's "Observations on the Natural History of Bees" is still most valuable to the scientific inquirer; whilst full information on the more recent great discovery of parthenogenesis in the honey bee may be found in Mr. Dallas's translation of Von Siebold's work on that subject, published by Van

Voorst, as well as in articles from the pen of Mr. Woodbury, the first of which appeared in our 25th Number, and which were afterwards continued from time to time.]

NORTH BRITISH COLUMBIAN SOCIETY.—One of the most liberal prize lists for Pigeons is offered for competition on the 20th of December by this Society. The prizes vary from two guineas downwards, and there are many silver medals in addition.

OUR LETTER BOX.

POULTRY BOOK (A Beginner).—If you send seven penny postage stamps to our office with your direction, and order "The Poultry Book for the Many," you will have it sent to you free by post.

REARING BLACK BANTAMS (Eboracum).—Feed your Bantam chickens well, nothing is ever gained by starving chickens. Good and proper growth with symmetry are as necessary and essential as small size. My chickens are often successfully shown in November, especially Cochius.

DUCKLINGS WITH CONTRACTED FEET—GAPES (Constant Reader).—The only advice we can give you about your ducklings, hatched with contracted feet, is to give up breeding from the stock, as there are no means of preventing that which happens before birth. Adult fowls seldom or never die of tapes. It is very fatal among chickens. Pills of camphor half the size of a pea, given at six or eight hours' interval till the gaping ceases, will cure them, and if the water they have to drink is strongly impregnated with the same drug, it will prevent them.

TURKEYS HATCHED BY A HEN (T. M. L.).—Keep the hen under a rip with bars wide enough to allow the poult to run in and out. Be sure to put it in a sheltered place, so far as cold wind is concerned, but also in one where advantage can be taken of the sunshine. Feed as with chickens, adding to the bill of fare paste made of pea, bean, and oat meal staked with milk and with green onion tops chopped fine and mixed with it. It is essential to keep young Turkeys dry, and beer is a good thing for them.

CHICKENS DURING COLD WEATHER (H. B.).—Good feeding is the only thing we can suggest as the antidote for the cold weather. Beer is much better drink for chickens than water, when the atmosphere is damp and chilly.

COCHIN-CHINA PULLETS NESTING WITHOUT LAYING (A. J.).—Her egg-organs are most probably inflamed, and we anticipate that she is too fat. Give her a dessert-spoonful of castor-oil twice after a day's interval. Keep her on mashed potatoes with a very little barley-mal added, but no whole corn or flesh food. Abundance of green food, especially lettuce leaves, is desirable.

INCUBATOR (T. E. Partridge).—The temperature should be 104° or 105°. We have not heard recently anything about the Grape you mention. It will be advertised, probably, in due time.

DORING CHICKENS DYING (A. B. D.).—The symptoms are those of gapes. Give each chicken a pill of camphor, as directed for another correspondent to-day.

POINTS OF ROSEN DRAKE (J. W. C.).—The bill should be of a yellowish green without any other colour, except the black beak at the tip; long, broad, and rather wider at the tip than at the base. Head, lustrous, green, and purple; distinct white ring round the neck, not quite meeting at the back; rich brown or claret breast, reaching low down to the water line. Back, dark green; body, soft, grey, almost white near the tail; tail, dark green, and curls firm and black; wings, brownish, with broad ribbon mark of purple and white; white flight feathers are a fatal defect; legs, orange, or brown and orange; weight about 8 lbs.

GUINEA FOWLS (J. Richardson).—The eggs require from twenty-eight to thirty days for hatching. If you send seven postage stamps with your address, and order "The Poultry Book for the Many," it will be sent to you free by post. It contains the information you mention.

FRAME HIVES—GUIDE-COMBS (F. H.).—In the absence of guide-combs a very efficient substitute may be found in the German artificial combs or impressed wax sheets sold by Messrs. Neighbour. These should be cut into strips of 1¼ inch in width, and fixed on edge to the under side of the bars by means of melted wax. The best means of doing this is by making incisions a quarter of an inch deep and about 1 inch apart along one edge of the strip of wax, which should be held between two slips of wood with the incised edge projecting and slightly warmed by a fire; then gently bend the incised portions at right angles in opposite directions right and left, rapidly wax the bar with melted wax, and quickly press the bent portions of the incised edge upon it. If properly managed these strips of artificial comb will adhere firmly and form most efficient guide-combs. When natural combs are used for the purpose they should not be old, and all drone-combs should be carefully eschewed. The latter end of April is usually about the time for putting on supers, but no exact period can be named, as it is always varying with the season and the state of the stocks themselves.

POULTRY MARKET.—MAY 14.

In common with other markets, extreme dullness causes unsatisfactory trade, and lower quotations. We do not recollect so bad a trade in this month of May.

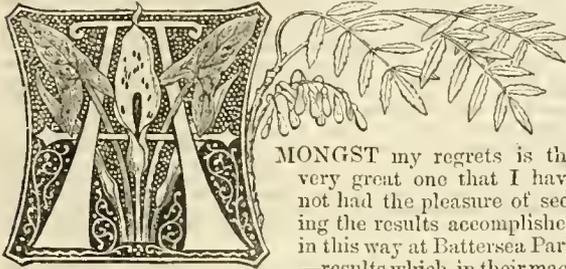
	s. d.	s. d.		s. d.	s. d.
Large Fowls.....	3	6 to 4	Guinea Fowls	0	0 to 0 0
Smaller do.	3	0	Partridges	0	0, 0 0
Fowls	0	0	Hares	0	0, 0 0
Chickens	1	9 to 2	Rabbits	1	4, 1 5
Goslings	6	0 to 6	Wild do.	0	8, 0 9
Ducklings	2	6, 3 0	Pigeons	0	8, 0 9

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 22—28, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon. Rises.		Moon. Sets.		Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days.	m.	a.
22	TU	WHIT TUESDAY.	65.7	42.9	54.3	17								8		142	
23	W	EMBER WEEK.	67.6	44.5	55.9	18	0	4	53	7	44	1	2	1	9	3 37	
24	TH	QUEEN VICTORIA BORN, 1819.	68.1	43.7	55.4	11	58	3	55	7	48	2	52	1	10	3 27	
25	F	PRINCESS HELENA BORN, 1846.	66.5	43.7	55.1	15	57	3	56	7	51	3	15	2	11	3 22	
26	S	HOVEA ILLICIFOLIA.	66.9	42.9	54.9	17	56	3	57	7	53	4	41	2	12	3 16	
27	SUN	TRINITY SUNDAY.	65.9	45.1	55.5	21	55	3	59	7	54	5	6	3	13	3 10	
28	M	HOVEA ELLIPTICA.	67.6	44.8	56.2	15	51	3	0	8	53	6	33	3	14	3 3	

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 66.9°; and its night temperature 43.9°. The greatest heat was 91°, on the 23th, 1847; and the lowest cold 25°, on the 23rd and 26th, 1863; and 23rd, 1864. The greatest fall of rain was 0.97 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

PLANTING OUT SUB-TROPICAL AND OTHER HANDSOME-FOLIAGED PLANTS.



MONGST my regrets is the very great one that I have not had the pleasure of seeing the results accomplished in this way at Battersea Park—results which, in their mag-

nitude and the harmony of their arrangement, seem to have eclipsed all that has been done in that way formerly. I trust that this season I may be able to admire and take notes of such arrangements, and also learn whether I have before met with Mr. Gibson, to whom the public are so much indebted for bringing together such fresh combinations of the beautiful. Perhaps I could value such combinations all the more, though as yet depending on mental vision, as, though of late years I have done little in this way, and this year will be likely to do little or nothing, it is more than thirty years since I noticed what might be done by planting out greenhouse and the hardiest of stove plants in summer; and for a period of some fifteen years I did less or more of this every year, when such combinations were not at all common. Then, as now, what I did, even on a limited scale, was much noticed by those who admired beauty in form as well as in brightness of colouring.

In answer to the many inquiries why I do not continue a system the full value of which no one would be more ready to recognise, I will not enter into the economical questions involved, but will content myself with stating that our little space under glass began to be more occupied with the useful as respects the table instead of the merely beautiful; that our lawn is so open and exposed to winds, that all large-leaved plants, as Cannas, Brugmansias, Castor-oil plants, &c., even with the greatest care, were liable to have the foliage cut into unseemly ribbons; and that the position formerly appropriated chiefly to this purpose became by degrees too shaded to suit the original intention, and other places that would have been suitable have for the present been devoted to other objects.

The place where the sub-tropical plants thrive admirably was enclosed by raised banks, running chiefly east and west, though bounded also on the east and west, the banks crossing each other so as to permit of suitable entrances. These banks were planted with Laurels, Pinus, &c.; and as long as they merely kept out the winds and admitted the sun, the plants did remarkably well. The beds in the centre were raised chiefly by flints; and a sunk fountain or cistern in the centre was made with flints set in cement against brick. Most of the flints round the beds and round the boundary that supported the banks were covered with Mesembryanthemums, Sedums, Saxifrages, &c. No doubt

the flints helped to absorb and retain heat in these elevated beds; but to increase this heat before planting out, from the middle to the end of June, we used to turn in the soil a spit deep in the afternoon after a sunny day; and for very tender plants, in addition to this, we used to take out a good hole, and fill it with hot fermenting dung and some 6 inches of rotten dung over it, and then the soil, in which we either planted at once or plunged the pot or tub. As the place gradually became more shaded these sub-tropical plants were confined to the sunniest spots. The whole effect, even on a limited scale, was very good; the tallest and freest-growing plants being placed far enough apart, either singly or in groups, to show themselves off well; whilst those of less growth were placed in smaller groups or singly between the tallest, and the ground was carpeted with Rock Roses, Sedums, Cerastiums, Cineraria maritima, &c. But for the general flower-beds being so open, the fine-foliaged plants might be mixed with good effect in the combinations of the bedding plants; but to show how windy the place is, Coleus Verschaffelti was torn into ribbons, and Cannas and Ricinus were so nicely fringed that a person would have imagined it was their natural condition.

That others may have the opportunity of doing what at present I cannot do myself, and thus give a sub-tropical appearance to a part of their grounds, I will subjoin the following list of what I have either used myself or seen successfully used, with some short hints as to their treatment, merely premising that much of the success will depend on having plenty of sun heat, protection from winds, and the ground in a warm state, by whatever means accomplished, before turning the plants out; and also, that though many will do well in pots plunged, with outlets for the roots, the greatest vigour will be obtained, and less trouble will be required in watering, when the plants are turned out into the soil, merely breaking the outsides of the ball a little.

1. ACACIA.—Several of the fine-foliaged ones, as mollis, pubescens, decurrens, lophantha, are very useful and effective when so treated. I used to plant them out into rich compost, train them to a single stem 6 or 8 feet in height, and let them branch there; in October raise them, squeeze the roots into a large pot, cut in the head, water well, set the plants in a shady place until the roots began to run, and then house them for the winter in a shed where there was a stokehole. I pruned in the head pretty closely in spring, and exposed the plants in a sheltered place in April. In this and all similar cases the plants should not have much artificial heat before being planted out.

2. ARALIA.—The beautiful Aralia papyrifera I had not the chance of so using. It would make a fine centre to a group. The hardy spinosa, which grows 8 or 10 feet high, has an effective appearance. The pretty Sieboldi is very effective, and in a dry place would need only a little protection in winter.

3. ARUNDO.—A. donax is one of the finest Reed-looking plants, throwing up stems strong enough for stakes. It is very shy of transplanting. This is best done just before it

begins to move in spring, and people must generally be content if it keep alive the first season. It likes rich loamy soil and plenty of moisture. *Arundo donax variegata* is pretty, and nearly as strong-growing. *Arundo versicolor* is a universal favourite, as the striped Grass called Gardeners' Garters; and one of the most wonderful things about them is, that though I have carefully examined some thousands of blades, I never could find two striped alike. The Garters make a good edging to tall plants, and by frequent cutting and plentiful watering they will retain their freshness to the end of the season.

4. *AMANTHUS*.—Of this there are three sorts worthy of attention—melancholicus, the common edging or bedding soft purple-leaved plant; bicolor, with two colours in the leaves; and tricolor, with three bright colours, one of the prettiest plants we have. I never did any good with it out of doors, except in the bank-protected place alluded to. The seed of all should be sown in March in a hotbed, and the seedlings be pricked-off, and hardened off for planting out in June.

5. *BRUGMANSIA* OR *DATURA*.—Perhaps of these the best are *sueveolens*, with large green leaves, and large trumpet-shaped single white flowers, and *Knightii* the same, with double flowers, and both sweet-scented. The next best are *lutea* with yellow flowers, and *atropurpurea* with dark crimson flowers, and the foliage of both less attractive. These may either be grown as bushes or as short standards, with stems from 4 to 7 or 8 feet in height. In this last style the large flowers show to the best advantage. In May turn out into rich compost, and water during the season. In autumn take up, prune-in the shoots to half their length, and in spring, after keeping the plants in any place secure from frost, prune back within a few buds of the base of last season's shoots; expose by the beginning of May where protection can be given them, and when turned out in the end of the month they will produce their flowering shoots from the middle of July and onwards.

6. *CENTAUREA CANDIDISSIMA* AND VARIETIES.—Beautiful for edgings, and for blending with scarlets, crimsons, and purples. Take cuttings in July, or put in small bits in heat in spring. Treat as respects protection like other bedding plants, giving little pot-room, and little water in winter.

7. *CHENOPodium ATRIPLEX* AND *PURPURASCENS* do best when sown under glass, potted-off, and planted-out in May, and make strong plants of a purplish hue.

8. *CINERARIA MARITIMA*.—Fine for edgings and undergrowths for Colons, Cannas, &c. It is most easily propagated in spring from short stubby shoots or suckers, in a little mild heat. In rather dry ground it is usually hardy, but young plants generally answer best, as they do not so readily throw up their flower-stems, and, therefore, they are more compact.

9. *CASSIA CORMOROSA*.—In addition to the splendid yellow masses of bloom and the fine green foliage, this furnishes a good example of leaves folding themselves back and sleeping at the approach of evening. It is treated like the *Acacias* and *Brugmansias*, only it requires a little higher temperature in winter, but it does best when not too far advanced when it is planted out. It succeeds best every year when planted out.

10. *CALADIUM ESCULENTUM*, *CUCULLATUM*, &c.—The safest plan would be to turn them out in July in heated soil, and take up and keep in a dormant state all winter; but I should like to try *esculentum* in the ground with a large hand-light over it, and a hood of straw in severe weather. However, that would be more trouble than taking it up. The bulk of the family will neither stand much cold nor damp in winter, or, if damp, they must not be cold. A temperature of about 60° is safe.

11. *CANNA*.—The varieties and so-called species are innumerable, and all bear bright flowers peeping out through large foliage. The plants grow from 18 inches to 3 and 5 or more feet in height. Perhaps the finest for foliage are *bicolor*, *discolor*, *nigricans*, *zebrina*, *Liervalli*, *Lambertii*, *mutabilis*, *muscfolia*, *hybrida*, &c., but all are beautiful when grown in a warm sheltered place where they can have plenty of sun and little wind. They do best when planted out in June, when they have not grown much to make them tender, and by the end of October they should be taken up and potted, some leaves left to encourage rooting, and then have all the stems cleared away and the roots plunged in dry earth in a shed by Christmas, and there they may remain until April. They merely need to be protected from frost in winter when used for out-door work.

12. *COLEUS BLUMEI*, *VERSCHAFFELTI*, &c.—Beautiful plants for a warm place. In cold open places they rarely do well. They make nice hands for Cannas, &c., and blend well with *Cineraria maritima* and *candidissima*. They do best when raised

from cuttings every spring in a hotbed, and then hardened off gradually until June, and turned out into earth well heated by the sun.

13. *DICKSONIA ANTARCTICA*, &c.—These fine Ferns do best plunged in their pots, or tubs, with drainage below to prevent stagnation, and the surface covered with moss or *Selaginella*. Thus treated many Ferns might ornament our flower gardens, and especially the sub-tropical department, in summer.

14. *DRACENAS*.—These must be lifted in time.

15. *EUCALYPTUS ROBUSTA* and other Gum trees present a singular appearance from their foliage, &c. I am not aware that any will stand our climate without the protection of a wall, but they do pretty well when treated as described for *Acacias*.

16. *ERIANTHUS RAVENNE*.—This ornamental Grass will look after itself when established, and like the *Pampas Grass* shows best by itself.

17. *FICUS ELASTICA*.—The Indian-rubber plant is not half so common as it ought to be. Plunged in pots, or planted out and carefully taken up in October, it may do for many years, if the temperature in winter is rarely below 40°, and never at freezing point. Propagated by cuttings and suckers. The juice should be allowed to dry before inserting the cuttings, and the plant should be dry before they are taken off.

18. *GNAPHALium LANATUM* does well with its hoary leaves and shoots for edgings and carpeting the ground. It is propagated by cuttings, and should be kept in a pit or greenhouse in winter.

19. *CYNERIUM ARGENTUM*.—All the varieties of the *Pampas Grass* will take care of themselves in ordinary winters. Propagation is effected by seeds and division of the plant. It is seen to most advantage when planted by itself on a knoll with its pendent grass sweeping over it, and the flower-stems standing alone in their glory.

20. *HEDERA*.—All the variegated and the smaller-leaved *Ivies* are useful for edgings and carpeting the ground in such places.

21. *HEDYSYCHUM*.—I have never done much with *coronarium* out of doors, but have had fine spikes of bloom and noble foliage of *Gardnerianum* in a sheltered place, when planted in rich soil, with two or three barrowloads of good hot dung beneath it. The roots were taken up and treated only a little better than those of the *Canna*.

22. *IRESENE HERBSUII*.—A good edging plant, or for small groups between larger plants, as recommended for *Amaranthus tricolor*; cuttings strike freely in heat.

23. *LOMATIA FERRUGINEA*.—A Protead plant with fine foliage, of which I have had a good account, but which I have never had the chance of trying.

24. *HELIANTHUS MAJOR*.—The flowers seldom show, but the leaves have a graceful hoariness about them, and smell when touched much like peas-meal. I have seen good plants stand some years against a wall, and a plant did well for a time in our little protected place. We took it up in October and kept it in a cool greenhouse in winter. This grows from 8 to 10 feet in height. Minor is a dwarf variety.

25. *MESEMBRYANTHEMUMS*.—Many of these are very beautiful for setting on decayed stumps, rotten stones, and also, like the pretty Californian *Houseleek*, will make nice edgings for small, low-growing groups.

26. *Nicotiana*.—Most of the *Tobacco*s have fine foliage, and the aroma given off is very grateful to the lovers of the weed. The new *Nicotiana wigandoides* is very attractive. They are raised from seed sown on a hotbed in March, and the seedlings hardened off before planting out.

27. *NERIUM* (*Oleander*).—The white, pink, single and double green, and variegated, do better in such a sheltered place as described than in pots. If plenty of shoots on large plants are encouraged they bloom well every year. The taking-up, and moderate dryness afterwards, seem to secure the free-blooming in the following season. The plants must be kept rather dry and free from frost in winter. In fact, where much of this planting-out of large plants is resorted to, houses like our old orangeries are wanted merely to preserve the plants in life rather than to grow them.

28. *RICINUS* (*Castor-oil plants*).—This is one of the most effective families for the purpose where there is room to display them, and the wind is kept from tearing and ribboning the fine parasol-like leaves; many kinds, such as *hourbonensis*, have fine shaded foliage as well as coloured stems and fruit. Among the best are *communis*, *macrocarpus*, *spectabilis*, *variabilis splendens*, *sanguineus*, *tricolor*, &c. These may all be grown to a good size, say from 5 to 8 feet. There are also dwarf varieties of less than half that height, as *viridis*, *spino-*

sus, niger, &c. I have taken up these splendid plants and tried to keep them over the winter; but unless a warm place can be afforded them, the trouble is next to wasted, as in a cool place they will always be getting less and less. I have found this plan of keeping them over the winter suitable when, instead of a plant with one strong stem, I wished to have a bush with five, seven, or more stems, for by cutting back the kept-over plant, say a foot or 15 inches from the ground, growing it on vigorously in spring, and hardening it off, a fine massive bush might be obtained. For general purposes—that is, to have stout single-stemmed plants with huge healthy leaves, the best plan is to sow the beautiful bean-like seeds early in March in a hotbed, pot off the plants when a few inches high, and keep shifting into larger pots until May, then begin to harden off by giving more air, and plant out in rich soil in June, and let them alone until the frost kills them. Of such kinds as Obermanni, I have obtained splendid purple-shaded leaves, much larger than the fancy parasols, by placing a large barrowload of hot dung below the rich soil. When this hot dung system is resorted to for rather tender plants the dung becomes valuable for the surface compost in the following year.

Fine effects might be produced with these plants:—Cannas, Coleus, Centaurea, or Cineraria, either when regularly planted in belts and the ground carpeted, or in large beds when these are grouped in masses, with smaller groups of dwarfier plants, as *Amaranthus tricolor*, *Coleus*, &c., and all the open spaces covered at back with *Cineraria maritima*, and in front with yellow Ivy or yellow-leaved *Geraniums*. Splendid beds of foliage and flowers may also be made with *Ricinus* at the back, and *Cannas* and *Gladiolus* mixed all over until near the side, where a belt of *Iresine*, or *Coleus*, and *Centaurea* would make a fine termination. In fact, grant warmth, shelter, and labour power, and these fine-foliated plants would soon do away with the stiffness of our flower gardens.

29. *Solanum*.—A few of the annuals, as *Wrightii* and others, sent out by our seedsmen, are very pretty when raised in a little heat and then planted out after being hardened off to suit the open air. A group of *Solanum lycopersicum* (Tomato) would be attractive when in fruit, and so would smaller groups of the white and purple *S. melongena* (Egg-plant); but for ornamental foliage and rich-coloured spines, as well as large flowers, we must resort to such kinds as *Solanum marginatum*, white-edged, from Africa; *citrullifolium*, large pinnated leaves and large spines; *aculeatissimum*, good leaves and very prickly stems; *pyracantha*, with very large orange prickles and singular foliage, from Madagascar; *Balbisii*, with large leaves and whitish midribs, and white flowers, from South America, &c. All the spined kinds should have room enough and to spare, and, judging from my experience, should be plunged in their pots in moss or earth, so as to get at them with the least trouble. Except in very warm places they should be returned to a cool stove in the end of September, unless, which would be best in most cases, as they grow with great rapidity, a young stock is kept up and the older plants are allowed to perish.

30. *SPIRÆA*.—A few of these, as *Douglasii*, *Linleyana*, *fissa*, *thalictroides*, &c., may be used, and will take care of themselves.

31. *SPERMANNIA AFRICANA*.—This yields fine foliage and huge corymbs of its singular flowers when planted out. It lifts well, and may be kept almost dormant during the winter in a shady cool place free from frost. It should be little excited before it is exposed in May, and planted out in June.

32. *SPACHYS LANATA*.—This woolly-leaved hardy plant would be chiefly useful for carpeting the ground in such a garden—a mode of ornamenting flower gardens that is yet in its infancy. The noble pyramidal circle I saw some time ago at Woodstock, in Ireland, would have lost a portion of their attractiveness if deprived of their carpeting of moss, as close and compact and green as we could make it here with such *Lycopods* as *Selaginella apoda*, *denticulata*, &c., under glass and shade. If ever I be privileged to see Woodstock again I hope that, under such an enthusiast as Mr. McDonald, and such encouragers of the beautiful and progressive in art as the worthy proprietors, I shall see much more of this carpeting system carried out. What I did in this way used to please me much, even when using such plants as *Verbena pulchella*, *Lobelias* of the *speciosa* section, variegated *Alyssum*, *Gnaphalium laetum*, and the *Cerastiums*, *Sedums*, *Crassulas*, &c., with harmonising or contrasting colours, standing in little groups above the ground carpeting, and far enough apart for the beauty of all to be seen. I used to call the plan "spotted ribboning" and "raised carpeting." For instance, how beautiful a close

carpet of *Cerastium* looks, with little groups of dwarf scarlet *Geraniums* spotted over it; and then strong plants of even the beautiful *Mrs. Pollock Geranium* are not lessened in their attractions when set on a carpeting of a dense blue *Lobelia*, and a few flowers of the *Lobelias* just peering through the foliage, as well as beneath and around the leaves.

33. *STIPA PENNATA*.—The Feather Grass is a general favourite. To make it thrive to perfection it requires frequent mowing. It is, of course, perfectly hardy. Some variegated Grasses might be introduced with propriety.

34. *STRELITZIA REGINÆ*.—Several times I have had this old resident of our stoves in good order out of doors. It does best plunged and well mulched with rotten dung.

35. *TITOTOMA UVARIA* would be beautiful with its masses of flowers and Sedge-like foliage. The roots might be protected with moss in winter, in addition to the withering leaves of the plant, which should not be touched.

36. *VINCAS*.—*V. major variegata* and elegantissima should have a place; and the green, yellow, and white variegated varieties of minor would be useful for edgings and carpeting the ground, especially in shady places.

37. *WIGANDIA CARACASSANA*.—I never had the privilege of trying this fine plant from the Caraccas, but some scores of enthusiasts have told me how well it does under Mr. Gibson's management. I presume it is kept in a rather warm house in winter. In fact, the winter and spring treatment of such plants is most important, if we cannot rest them in a shed, or place them under a stage, like *Cannas*, or raise them annually from seed like *Castor-oil* plants.

38. *YUCCA*.—Who does not admire the Adam's Needles, with their rough picturesque attractions, in bloom and out of bloom? From *filamentosa* to *gloriosa*, through *recurvifolia*, *angustifolia*, *alifolia*, and others, they would lend their grotesque attractions to such a scenery, and in ordinary winters would require no more attention than tying their leaves together by a band, that snow, or even much frozen wet, should not lodge in the heart of the plants. The tying also protects the leaves from the wind at a time when it is presumed it would try them the most.

39. *ZEA CUCURBITA*.—There is a striped Japanese variety of this Indian Corn advertised. The commoner kinds make a fine appearance in a sheltered place. Most seedsmen, out of the varieties grown, can select some of robust growth for purchasers. In such a place as described we have had strong plants from 8 to 12 feet in height, with long broad leaves and with feathery crowns, besides the fruitstalks, beating out of the field all the *Arundo donax* that were ever grown. A few of the varieties of *Holcus* should also be grown, though they are pygmies beside some of these large Indian Maizes. To have them fine sow single seeds in a hotbed in separate pots in April, repot as necessary, harden off, and plant in rich soil in the beginning of June or towards the end of May.

I thought of confining this article to mentioning some two score kinds of plants suitable for sub-tropical out-door decoration; and amongst those occurring as worthy of being named with the others at present, I will select

40. *AGAVE AMERICANA*, the green and variegated varieties of which, if large specimens and plunged, would add much to the grotesque interest of the scene. In such a garden I would show neither pot nor tub, so that in this respect the natural should have full sway. And

41. *RHUS COTINUS* (The Venetian Sumach), for its masses of feathery bloom, *Rhus typhina*, the Stag's-horn Sumach, and a few plants of *Ailanthus glandulosa*; the first, the Stag's-horn, for the grotesque appearance of the leafless shoots, and both it and the *Ailanthus* for the fine tropical-looking foliage. These, with common treatment, will look after themselves.

At another time I may add to what is here hinted at, as to the combinations of such plants. Meantime, as the subject seems to interest many of the readers of this Journal, I would respectfully solicit help and information to correct what is crude and to supply what is deficient in this merely pioneer article, confident that where house-room, time, and labour, and a suitable protected position can be commanded, sources of enjoyment will thus be opened up, to which even the greatest admirers of vegetable loveliness have hitherto been strangers.—R. FISH.

PROTECTION AGAINST RABBITS.—After having tried, in vain, many things strongly recommended as preventives against the gnawing of the bark of young fruit trees by rabbits, I find the

mixture of slacked lime with a strong decoction of tobacco, applied with a brush to the lower part of the stems, a most sure and reliable means of keeping the rabbits away from the trees.
—A. FENDLER in *American Gardener's Monthly*.

MONOCILETUM ENSIFERUM CULTURE.

THIS very fine winter-flowering plant is deserving of a place in every collection, however select. It cannot be ranked as a stove plant, for it grows too lanky in a stove heat, neither will it thrive in an ordinary greenhouse, but it requires the temperature of an intermediate-house, or from 45° to 50° in winter from fire heat.

Cuttings are to be taken from the free-growing shoots, their upper part with three or four joints and the growing point. The shoots should be about half ripe, or with their base a little hard and brown; they will, therefore, be from 3 to 4 inches in length. Cut them transversely below the lowest pair of leaves, remove these as well as those on the next joint, and insert the cuttings round the sides of a 4½-inch pot. Drain the pot to one-third of its depth with potsherds, on these place a thin layer of moss, and then fill up with a compost of sandy peat and loam, so that when the cuttings are inserted their bases may be within the least possible distance of the soil; the pot is then to be filled up with silver sand. Place this pot inside one of larger size, and so that the rims of both may be on a level. Fill the interval between the pots up to within an inch of the rim with small crocks, and the remainder of the space with silver sand. Insert the cuttings up to the lowest leaves, and not so closely as to crowd them. Give a gentle watering, and, when dry, cover them with a bell-glass resting on the sand between the pots. Place the cuttings in a mild hotbed of from 70° to 75°, shade from bright sun, and tilt the bell-glass an inch or so on one side at night, but keep it close by day. Be careful not to make the sand very wet, otherwise the cuttings will damp off, and yet it must be kept moist. The present is a good time to put in the cuttings. They will be well rooted in six weeks, and, having been hardened off by removing the bell-glass gradually, they should be potted off singly into small pots, using the same compost as for cuttings. After potting, the plants will require to be slightly shaded, and to be kept in a rather close atmosphere until established; they should then have a light and airy situation in a house, such as a greenhouse during the summer, having a temperature of from 55° to 60° at night.

When the plants fill the pots with roots, shift into 4½-inch pots, and by September, if they have grown well, they may be shifted into pots a size larger, but this will scarcely be necessary, and should not be practised later than the beginning of the month, so that the roots may take firm hold of the soil and reach the sides of the pots before dull weather set in. The soil for these pottings may consist of one-third turfy sandy peat and two-thirds turfy loam, broken and made rather fine, with the addition of one-sixth of silver sand. It is imperatively necessary to drain the pots well, for though the plant is as free in growth during the summer months as a *Fuchsia* it is by no means so easy to winter. Provision should therefore be made to keep the drainage free by placing over the crocks a thin layer of moss, or the turfy parts of the compost with the soil knocked out. In all pottings, the neck or collar of the plant should be kept slightly elevated in the centre of the pot. In winter the plants should have a position near the glass in a light airy structure having a night temperature of from 45° to 50°, and be very carefully watered.

By the following March cuttings treated as above will be sturdy compact plants in 4½ or 6-inch pots, though equally good could be obtained at most nurseries for less than half the cost of raising them. However, in whatever way obtained, if in 4½-inch pots they should be shifted into 6-inch ones, and if in the latter size into 8-inch pots, using a compost of sandy turfy peat one-fourth, leaf mould well reduced one-fourth, and one-half turfy loam of medium texture. The pots should be of a porous nature, and well washed inside and outside. Place a rather large crock over the hole; some of less size above it; then others broken smaller still, so as to fill altogether one-fourth of the depth of the pot; and over all a thin layer of moss or the rougher parts of the compost. This, previous to use, should be chopped rather fine, but not sifted, and mixed with a good proportion of silver sand. Having placed a little of the compost over the drainage, the pot is prepared for the plant, then turn the latter out of its pot, remove the drain-

age, and pick away the old soil from among the roots; or, if this cannot be done without injuring them, loosen the sides of the ball with a pointed piece of wood, and remove the soil from the surface down to the roots. Pot rather firmly but not very tightly, and keep the collar of the plant rather high, yet not more than half an inch or so above the surface. Give a gentle watering, and place in a temperature slightly warmer than before for a few days, or keep rather close and slightly shaded for a week or ten days until the roots are working in the new soil. The plant will be much benefited by a gentle syringing, and any shoots that grow irregularly should be stopped up to the end of June, when no further stopping should take place. The growth should be regulated by stopping and tying out the shoots so as to form an evenly balanced cone. The watering should not be at any time excessive; no water should be given until really wanted, then sufficient to show itself at the drainage; but although the plant is not to be deluged with water, it must not be allowed to suffer through the soil becoming dry. A free and sturdy growth can only be secured by the plentiful admission of air, and an abundance of light.

In June, if the pots are full of roots, shift the plants into 12-inch pots, and when the roots take hold of the fresh soil stop the shoots for the last time, for it must be remembered that the flowers are produced from their points. In August expose fully to light, and afford abundant ventilation, so as to harden the wood well, and the harder it is the better will the plants winter; their tendency to go off after blooming is a great drawback.

In September, if the plants have been grown in a warm greenhouse during the summer, or in one not very highly ventilated, nor shaded by climbers, they will be nice cones a yard or so high, and stiff and compact in growth. A cold pit would be a much better place for the plants from May to September, than any house, for then the requirements of individual plants can be better provided for, and I find that small plants do much better in small than in large, lofty houses.

Place the plants in their winter quarters by the middle or end of September, and avoid a place overhung with climbers, and the ventilation distant. Give a light and airy situation near the glass. Do not wet the foliage after this, nor preserve a close atmosphere, otherwise the leaves will become brown at the ends, and avoid watering more than can be helped—that is, give no water so long as the soil appears moist, end the plant does not show the want of it. I find the most suitable temperature to be 50°, and not less than 45°. In a higher temperature it grows, and the leaves have a sickly hue. The surface of the soil should be kept free of moss by frequent stirring, and be careful not to overwater, and then there is no danger if only the drainage be good. When in flower the plant requires more water, and also when expanding and swelling the flower-buds, but any excess at these times ends in the plant going off at the collar after flowering. It is, therefore, well to have young plants in store.

After flowering keep the plants rather dry, and do not encourage growth in winter, but cut them in early in spring, and when the growths are a few inches long repot, picking away the old soil, then shade and keep close for a few days. The shoots may be stopped up to July, but only those which are strong; the weaker ones will not require any stopping.—G. ABBEY.

QUEEN VERSUS SMOOTH-LEAVED CAYENNE PINES.

In order to prevent a wrong impression, will you allow me to offer a remark on what your able correspondent Mr. Robson has said about these two varieties of Pines in his criticism on the little work on the Pine Apple which I have recently published? He says that Smooth-leaved Cayennes are more extensively grown in Scotland than Queens; and that here and at Dalkeith, as two instances, the Queen is not so extensively grown as the Cayenne. Doubtless this conclusion has been arrived at on the part of Mr. Robson from the fact that at the time of his visit the whole of the early Queens had been fruited and used. At Dalkeith Queens are far more largely grown than any variety; and here the two varieties in question are fruited in about equal proportions, from the fact that there is most demand for ripe Pines during the London season, and from October to March. It is for winter supply that the Cayenne is so much appreciated, and of sixty Pines that will be cut here for the next three months only three will be Cayennes. I am sure Mr. Robson's well-known regard for truth and facts

will lead him to look on this correction with pleasure. He, I am sorry to say, saw our Pines under very unfavourable circumstances, for, as all who visit here annually know well, our autumn and winter Pines of 1865 were at least 30 per cent. below their usual mark, which arose from their being started without first making an early summer growth—a circumstance over which unfortunately I had no control.—D. THOMSON.

EVERGREEN SHRUBS.

At page 312 Mr. Robson invited attention to a subject which has not received generally the consideration which it deserves. I fully share in the regret there expressed, and hope that he and others will again advert to the subject; by doing so, they will at least bring under notice objects worthy of attention, and it is to be hoped that such notice may tend to promote an extended distribution and culture of shrubs not at present so well known as they should be. I shall be happy to add my mite of information to the contributions of other correspondents.

There are many beautiful plants attainable that will afford not less pleasure, and, at the same time, cost less trouble than most of those which require the protection of a glass structure; and to those who have not the luxury of a greenhouse, but wish to cultivate a taste for plants, and to seek amusement and instruction from them, there are abundant materials to repay their care. Among them evergreen, deciduous, and flowering shrubs are distinguished for their beauty, duration, and easy culture; for, after all, the greatest pleasure of the garden is to be found out of doors.

Although new plantations are being constantly made everywhere, and grounds laid out, the subjects used to ornament them exhibit a sameness that seems to ignore the existence not only of the many beautiful and interesting shrubs recently introduced, but also of some that have been long known. It is only when plantations have been superintended by persons of experience, and possessing a knowledge of what is available for adding some new and interesting feature to the shrubbery and kept grounds, that objects now too rarely seen are met with, and when met with are not always passed by unobserved. It is an additional instance of the sound judgment that has marked the proceedings of the Committee of the International Horticultural Exhibition, that by introducing classes for hardy trees and shrubs an important item of out-of-door gardening will be there represented.

I subjoin, so far as my experience goes, a short notice of the subjects of Mr. Robson's inquiry, with the addition of a few others not mentioned by him, in accordance with the expressed invitation to correspondents to record their views.

SKIMMIA JAPONICA.—I have had this shrub about five years; it appears to thrive best if peat be mixed with the common soil in which it is planted. My first plant was too much exposed to the sun's rays, which had the effect of discolouring the foliage and rendering it unsightly; upon removing it to a more shady situation it failed to produce berries, although it bloomed freely, but its growth is slow. Other plants grown in pots, and kept in a cold frame during the winter, produce berries.

DESFONTAINIA SPINOSA did well here for two years after it was planted out, it also produced bloom; it then retrograded from a cause which I was long in discovering; being placed in a favourable spot near the corner of one of my borders, I at length found to my great annoyance that a neighbour's dog had made it a special object of attention. Removal to another place is restoring it. I am inclined to think that the *Desfontainia* will do well as an out-of-door shrub, if planted in rich light soil sheltered from the north and east.

EUGENIA UONI has stood out during the last four winters; the flowers are pretty but not conspicuous; the fruit is edible, but too small and of insufficient flavour to be of service. *E. apiculata* I have not tried.

COTONEASTER SIMMONSII has retained its bright orange scarlet berries all the winter nearly up to the present time. The great drawback to this shrub is, that as soon as the berries begin to be well coloured, the leaves become shabby and fall off. The erect habit of *Cotoneaster rigida* renders it distinct from *C. microphylla*.

PERNETTYA MUCRONATA grows rapidly out of doors here, planted in a mixture of peat and common soil. Like *Skimmia japonica* it blooms freely but does not produce berries, a circumstance I am unable to account for. It is, however, a

beautiful shrub, its glossy deep-green foliage contrasting well with the reddish purple wood of the young shoots. *P. speciosa*, more compact and with smaller leaves, is also well worthy of a place.

GRISELINA LITTORALIS proves hardy here thus far; I have had it about two years and a half. When Mr. Robson first pointed it out to me at Linton some time ago (it was a stranger to me then), I was at once convinced that it ought to be more generally known. Its habit and cheerful appearance fully justify the occasional favourable mention which Mr. Robson has made of it. It might be taken for Majorca Box but for the slight turn of its leaves. It is, however, quite distinct.

COLLETIA BICTONENSIS is an interesting curiosity; its prominent triangular spines give it an appearance quite unlike any other hardy shrub. It grows well in rich light soil.

CEANOTHUS RIGIDUS will withstand any of our ordinary winters. The severe winter of 1860-61 was fatal to it here, but other plants of it have done well since. Its delicate blue flowers are very pleasing; and as it blooms freely when young, and is easily propagated by cuttings in the autumn, there appears to be no obstacle to its being more frequently met with. It is best planted in a sheltered situation, and allowed to grow freely, not trained against a wall or otherwise.

EGONYMUS JAPONICUS is a neat compact shrub, with elongate oval foliage; it looks well in winter, and thrives in almost any soil. There are two or three variegated forms of it, but neither of them so good, in my opinion, as the green kind. They are useful for variety.

BUXUS SEFFRUTICOSA ELEGANS should have a place where small and compact shrubs are desirable. It should not be planted in the shade, or the markings of its foliage will be rendered less distinct. This is an evident instance of the influence of direct solar rays upon the variegation of plants. *B. balearica* is probably better known than any of the preceding; it is worthy of a passing notice.

ILEX DIFFRENA is one of the most distinct of green Hollies—but I am getting into an extensive field—this and *Ilex opaca* ought to be in every shrubbery.

It would not be difficult to extend the list. Before concluding I wish to ask for information respecting *Chamaerops Fortunei* and *C. humilis*. I have not yet ventured to give them full exposure during the winter. Has any one done so?—and how do they comport themselves? Should they prove capable of bearing our climate they will indeed be valuable acquisitions, giving quite a new feature to the garden. I should also be glad of any information respecting *Escallonia montevicensis* and *E. pterocladon*, do they approach in excellence the well-known *E. macrantha*?

Our old favourite the *Laurustinus* is found in different species. Does *Viburnum macrocephalum* form a good shrub, or rather tree? The subject of this article constitutes a wide field of inquiry, and this, if directed in a proper spirit, cannot fail to be useful and interesting.

The common *Aucubas* here are covered with bloom; as this is probably the case generally we may expect in time to hear of some fine berried specimens.—ADOLPHUS H. KENT.

ORIGIN OF THE HAGUE AND LAPSTONE KIDNEY POTATOES.

IN PERUSING THE JOURNAL OF HORTICULTURE for March 20th, my attention was drawn to an answer by your correspondent, "UPWARDS AND ONWARDS," to "D., Deal," respecting the origin of the Hague and Lapstone Kidneys. Your correspondent has been misinformed, and I beg through your Journal to inform him and the public accurately.

These Kidney Potatoes were propagated by Major Hague, but they were raised by his son Joseph, the particulars of which are as follows.

I (Joseph Hague) in the year 1827, then residing at Thorne, near Leeds, planted two pecks of Potatoes, which I had sent me from Clap Gate, near Harewood. Those Potatoes produced an extraordinary quantity of fine berries, which induced me to try to raise seedlings from them. In that I succeeded, and selecting the two best from among the quantity, I again planted the seedling tubers, but subsequently removed to Bramham, where I now reside. Having no garden connected with the house I then occupied, I took my seedlings over to Bardsey, and they were planted in my father's garden, and as he was the first to propagate them, the general impression was, and is with many people to this day, that he raised them himself; but he never

at any period of his life attempted to raise seedling Potatoes. I have five brothers, who can all testify to the accuracy of the above statement. Mr. Fuller, Florist, &c., Headingley, near Leeds, but at the time gardener to G. Lane Fox, Esq., of Bramham Park, gave the Lapstone Kidney its name.—JOSEPH HAGUE, *Bramham, near Tadcaster.*

INTERNATIONAL HORTICULTURAL EXHIBITION.

TO-DAY opens the grandest horticultural Exhibition ever held in this or any country; for extensive as were the kindred gatherings of Brussels and Amsterdam, and rich and varied the treasures there displayed, they each must pale in grandeur before that which has just commenced. Never before have such glorious examples of the beautiful in vegetable life been gathered together in such number, and it may be—nay, most likely will be—that those living will never have an opportunity of seeing such a display again. Let all, then, who can by any possibility visit the Exhibition, do so; for whether they be practical horticulturists or simply lovers of the beautiful in Nature, be it in form or colour, in foliage, in flower, or in fruit, they will have their tastes gratified to the full, and, we repeat, such a chance of their doing so, and on such terms, may never occur again.

In our Number for April 24th we gave a plan of the way in which the ground is laid out; but no one can realise in imagination the effect produced upon the eye on looking upon a garden of nearly four acres of the rarest and most splendid of cultivated plants, all in the subdued light secured by the canvas roofing. The breadths of relieving shade caused by the groupings on elevated terraced beds; the avoidance of monotony by such variation of surface, by the not-excessive fragments of rockwork, and by the cascades; and the relief to the eye given by the turf facings of the terraces, must all be seen to be appreciated. The impression on entering from the Cromwell Road, when the groups of mingled flowers and foliage are first seen, and the broad walks only just sufficiently seen to awaken imagination, is most striking. Nor when the details—the groups—are examined is the first impression weakened. All is artistic, and not an interruption mars the beautiful. To the right is the Orchid-compartment, 500 feet long by 40 feet wide, heated by 3200 feet of four-inch piping, connected with one of Ormson's multitubular boilers of great power. At each end are groups, consisting of multitudes of Conifers, Taxads, and hardy shrubs; and at that near the Cromwell Road entrance Rhododendrons, Agaves, Yuccas, and other natives of the New World prevail. Then the eye encounters in the distance lofty tree Ferns, such as the *Cyathea medullaris*, one of which stands 25 feet high, Palms, Dragon Trees, lofty specimens of *Heritiera macrophylla*, *Strelitzia augusta*, and many more; whilst grouped at the sides are plants remarkable for the beauty of their foliage, relieved by others in flower, placed at conspicuous points. Those grand Azaleas, the splendid flowering specimens from the stove and greenhouse, such as are seen in no other country, the Heaths, the Pelargoniums, and a host of other floral gems, we cannot now do more than mention; but the whole constitutes a scene of beauty that the imagination may picture, but which words cannot adequately describe. Next week we shall publish a full report of the Exhibition, Banquet, and Botanical Congress.

We have much pleasure in being enabled to state that the Council of the Royal Horticultural Society, at their last meeting, passed a resolution, opening the Chiswick Gardens free to strangers during the week of the International Exhibition.

THE CÉLINE ROSE AS A STOCK.

MAY I ask your readers what is their experience of the Céline Rose as a stock for Perpetuals, &c.? I have been trying some experiments in a small way with it, and am inclined to think that in some respects it has advantages even over the *Manetti*. It roots quite as freely, and is inclined to throw its roots more up to the surface, and, therefore, for some soils it would have great advantages. Its roots, however, seem to spread much farther, and not to be so bushy as the *Manetti*; but it is far more vigorous, and quite as hardy. I should, however, like to know the experience of other cultivators. I

fancy it will be especially suited for the less vigorous class of Hybrid Bourbons, such as *Louise Margottin*, *Modèle de Perfection*, *Mlle. Emain*, *Emotion*, &c.—C. P. CLEAVELAND.

ROYAL HORTICULTURAL SOCIETY.

MAY 15TH.

FLORAL COMMITTEE.—Messrs. Osborn, Folham, exhibited six very fine specimens of Heaths in full flower, also a beautiful plant of *Acrophyllum venosum*. These were awarded a special certificate. Messrs. Veitch sent some fine specimens of the double *Deutzia crenata*, *Anthriscum Scherzerianum* with its brilliant scarlet spathes, and three seedling *Gloxinias*—one, *Lady Cremorne*, an erect white flower with deep violet markings; the great peculiarity of this plant was its tendency to produce double flowers, a second series of petals being formed towards the base of the calyx. For this variety a first-class certificate was awarded. The other two varieties were *Madame Smith*, a deep purple, and *Lady Lyons*, a deep rose.

Mr. George Scott, gardener to J. S. Gower, Esq., sent a seedling *Calceolaria*, *Mrs. Scott*, of the herbaceous section, bright yellow with numerous dark spots. The blooms were ill-shaped, not having the circular outline so essential in this gay and attractive flower. From Mr. Keeler, gardener to J. Todd, Esq., came a seedling *Zonale Pelargonium*, *Rose of Dulwich*, very far behind this class of flowers; and from Mr. Beer, Hammersmith, seedling *Zonale Pelargonium* *Lady Smart*, of the marbled section, but of no merit. Mr. Bull, Chelsea, sent *Castanea vesca marginata*, an old and well-known plant, and *Picea-ria tabula-formis* in flower. The Rev. George Cheere, Papworth Hall, exhibited six well-grown specimens of the large-flowering variety of *Mignonette*. These plants were grown in No. 48-pots, and were considered a great success in good cultivation. A special certificate was awarded them. From the same gentleman came also a seedling *Tropaeolum* called *Papworth Scarlet*, with very brilliant deep scarlet flowers. Messrs. Cutbush sent four pots of *Myosotis intermedia*, both the blue and white varieties; James Bateman, Esq., cut specimens of *Dendrobium Devonianum*, *Uropedium Lindenii*, and an *Acerides*, producing its flower-spike from the extreme point of the shoot of the plant; and the Rev. M. J. Berkeley, a cut specimen of a seedling *Rhododendron*, with white flowers, deeply spotted, probably a sport from *guttatum pictum*.

From the Society's gardens came a very fine specimen of *Rhododendron Nuttallii*, covered with a profusion of blooms, to which a special certificate was awarded. *Epidendrum aromaticum*, *Cyrtocidium filipes*, six plants of the new variegated *Zea carayana*, or variegated Indian Corn, which, if it retain its variegation, will prove a very useful and ornamental decorative plant for the borders; a *Lilac*, called *Dr. Lindley*, very similar to the cut specimens of Charles X., which were brought from Chiswick; the clusters of flowers are very large, and conspicuous from the dark colour of the unexpanded buds. A large collection of small well-grown plants of variegated *Zonale Pelargoniums* from the Society's garden at Chiswick, consisting of Mrs. Pollock, *Sunset*, *Gaiety*, *Beauty of Oulton*, *General Longfellow*, and many others, were much commended for their extremely healthy condition and good cultivation. Mr. Procter, Clifton, exhibited a curious specimen of a Holly branch, which had assumed the stag's horn or branching form of flattened shoots, and which the common *Ash* tree and others are subject to.

Owing to the very cold weather many plants intended to be sent for exhibition were kept back, and the necessary preparation for the great International Exhibition next week most probably deprived the meeting of very many interesting subjects. It is most gratifying to observe how well these Tuesday meetings are kept up, and how much interest is displayed by the attendance of so many Fellows, whose thanks are due to those exhibitors who so liberally furnish plants for these meetings.

FRUIT COMMITTEE.—The only subjects exhibited were a brace of Champion of the World Cucumber by Messrs. A. Henderson & Co., and several Citrons by Mr. Scott, of Knaith Hall.

FORTNIGHTLY MEETING.—His Grace the Duke of Buefleach, K.G., the President, in the chair. The awards having been announced, and eighteen new members elected, the Rev. M. J. Berkeley remarked that the plant shown as *Psychotria macrocephala* at the meeting of April 17th, though figured by M. Lemaire under that name, proved to be *Rudgea macrophylla* of Beatbam. A *Rhododendron* shown by Mr. Johnson was then stated to be nearly allied to *Keysii*, of which the flowers bear considerable resemblance to those of a *Thibaudia*, and one sent by Mr. Innescombe to the last meeting, to be merely a form of *R. niveum*. It was also mentioned that several of the blooms of the fine example of *Rhododendron Nuttallii*, which came from the Society's garden, had been fertilised with the pollen of other kinds. The *Morrel* exhibited at the meeting of May 1st bud on further examination proved to be *Morchella crassipes*, a species larger than the common *Morrel* but of inferior merit, for though it may be used when young, it soon decomposes. Attention was then directed to a cut specimen of *Acerides Warneri*, flowering in an abnormal manner; and Mr. Bateman stated in a letter that *Jonesia asoca* is now coming finely into flower at Chatsworth, and he hoped to be able to produce it at the next

fornightly meeting. Mr. Berkeley having remarked that *Brownea grandiceps*, which he had once seen in flower in Wiltshire, is quite as handsome as the *Jonesia*, passed on to *Gloxinia Lady Cremorne* exhibited by Messrs. Veitch, which might be compared to the *Hose-in-Hose Primula* in appearance, but differed from it in not having a coloured calyx like the corolla, but a corolla in two separate divisions occupying the same relative positions as the two divisions in *hose-in-hose* flowers. *Lilacs Charles X.* and *Dr. Lindley* then came under notice, and the former was described as being by many degrees the finer; also the *Long-podded Radish*, the *Raphanus candelatus* of Linnæus. There are, it was stated, two perfectly distinct varieties—one the *Kat-tailed Radish* of Madras, the other that sent out by Mr. Bull, of which the pods attain a much greater length. A branch of *Holly* sent by Mr. Procter, of Clifton, was the next object of attention. It was in that peculiar state known as fasciated, which is very common in *Asparagus*, and arises from several stems becoming united or grafted together during their growth. The efficacy of sulphur as a remedy for the *Hop-mildew* was then touched upon, and although a prejudice had existed among cultivators against its use, and the *Hop-factors* had by their refusal to purchase *Hops* from grounds where sulphur was employed prevented those willing to use it from doing so, the factors were now convinced that it exercised no prejudicial effect on the quality of the beer, and Mr. Berkeley added he was happy to hear that they had withdrawn their opposition.

PEACHES AND PEARS IN NEW ZEALAND.

We have received from Mr. Swale, of the Avonside Botanical Gardens, a dozen of *Royal George* Peaches grown by him. They are of very large size and weight, and fully equal to any grown in England. These specimens show what can be done here for the cultivation of the Peach. The soil and climate of New Zealand are admirably adapted for this purpose, and it is a subject of regret that gardeners do not pay more attention to the culture of this fruit. The bright sunshine we enjoy here is eminently favourable to their growth. The gardeners and amateurs, in too many instances, are satisfied with Peaches, the ordinary production of the ground. Now, the climate is almost similar to their natural habitat, Persia, and with a little care and attention it is possible to raise Peaches equal to those grown on walls in England. The chief requisites are to thin out the crop, and by judicious pruning to admit a free circulation of light among the trees.—*Lyttelton Times*, Feb. 23rd.

[NOTE FROM THE GROWER.—One dozen of these *Royal George* Peaches weighed 4½ lbs. good weight, and in circumference the average size of the Peaches was 8½ inches. In this instance I may mention a *Windsor Pear* tree, about six years old, which produced me in this unfavourable season with us for Pears a crop weighing nearly 2 cwt. (within 4 lbs.), of good-sized fruit, a register being kept of the weight each time any were picked for sale. The crop of *Windsor Pears* does not ripen here all at one time. They are in great demand at 1s. per pound.—W. S.]

ENTOMOLOGICAL SOCIETY'S MEETINGS.

THE APRIL MEETING was presided over by the new President, Sir John Lubbock, Bart. Amongst the donations to the library were the publications of the Royal Society, a monograph of the *Platypedes*, by M. Chapuis, &c.

Mr. W. W. Saunders exhibited a remarkable group of eggs of some unknown insect (most probably a species of *Hemerobiidae*), from Australia, affixed in a row on the bark of a tree by slender peduncles, which were alternately directed in opposite angles; the eggs also, which are oblong, being alternately placed longitudinally and transversely. Also, the larvæ of a Beetle, probably belonging to the *Lamellicorn* tribe, which exhibited an elongated fungus of the genus *Sphæria*, growing out of each side of the neck like a ram's horn. Also, four larvæ of a species of *Locust*, from Australia, about half an inch long, attached to a twig; one of them was tightly held head downwards by the other three, which were themselves so locked in a close embrace, and had their legs so intricately entangled, that it seemed as if they had been unable to extricate themselves and thus had died.

Mr. Rogers sent for exhibition specimens of *Pimpla oculatoria*, one of the *Ichneumonidae*, which he had reared from the egg-bag of a Spider found under the loose bark of an Oak fence. The species had previously been reared on several occasions from Bramble sticks, which had been bored into by other insects in order to build their nests therein.

Mr. F. Smith exhibited a specimen of *Bembex olivacea*, which was stated to have been taken many years ago by Dr. Hicks, near Gloucester. It had been figured by Donovan as British, under the name of *B. octo-punctata*, but as no locality had been recorded, it had been subsequently doubted whether it is a truly British species.

Mr. J. J. Weir exhibited some larvæ supposed to be the common Mealworm, which had been found in a wine-cellar, where they had done considerable damage by eating through the corks of port wine

bottles, so that the wine had escaped, the sealingwax with which the corks had been capped not having proved a preventive against their entrance into them. They had only partially attacked the corks of sherry bottles, which had consequently escaped, probably in consequence of the flavour imparted to the cork by the wine not proving palatable to the larvæ. It was suggested, as a probable cause for their incursion into the cellar, that bran might have been used in packing the wine instead of sawdust.

Mr. W. W. Saunders said that numerous instances of the injury done to wine corks by various insects had been brought before the Society. He remembered a case in which a number of larvæ of *Dermestes lardarius* (which had been brought into the Docke with a cargo of skins), made an incursion into a neighbouring warehouse, in which were stored some manufactured corks, which they perforated and rendered useless. Large damages were claimed against the Dock Company, and a lawsuit seemed imminent, but the matter was finally compromised.

THE MAY MEETING of the Society was held on the 7th inst., the chair being occupied by W. Wilson Saunders, Esq., F.R.S., &c., Vice-President. The donations to the library received since the last meeting were very numerous, including the publications of the Royal, Linnean, and Royal Agricultural Societies, the Entomological Societies of the Netherlands and Stettin, and an extensive series of entomological works presented by the Secretary, J. W. Duanoig, Esq.

Mr. McLachlan exhibited some galls found on *Ground Ivy* at Lewisham, supposed to be those produced by *Aylax Glechome*, which, however, occur singly, whereas those now found formed a cluster of four.

Mr. Bond exhibited a fine variety of *Cabera exanthemaria*, reared by the Rev. M. Horton.

Mr. Newman exhibited some larvæ of *Hepialus lupininus*, destroyed by a fungus (*Sphæria?*), which occupied the whole of the interior of their bodies, sending out its mycelia in all directions through the skin, whilst in some specimens a stout capitate column rises from the neck of the larvæ immediately behind the head, evidently the fructification of the fungus. This curious formation is well figured in the "Entomologist" for the present month.

Mr. Stainton exhibited some Dipterous larvæ, sent from Alloa by Mr. Borthwick, which had entirely destroyed the main stems of young *Wheat* plants in that neighbourhood.

Mr. Saunders, however, stated that the habits of this insect had been previously well observed, and that its result was the throwing out of an abundant supply of lateral stems, no more injury being done to the crop than by pasturing sheep upon *Wheat* when growing too luxuriantly at the beginning of the season.

Mr. Stainton also exhibited a number of drawings of the larvæ of various species of *Microlepidoptera*, made by Miss Wing, from specimens which he had collected at *Mentone* and *Canues*, amongst which was *Prays oleellus*, which is as injurious to the young shoots of the *Olive* as *P. curtsiellus* is to those of the *Ash*; also, a drawing of a true gall formed on the shoots of *Gypsophila saxifraga* by a small *Lepidopterous* larvæ (*Gelechia* sp.?). The only other instance hitherto observed of a true gall formed by a *Lepidopterous* larvæ is that produced upon *Polygonum aviculare* by *Asychina aratilla*. He also exhibited a drawing of another larvæ (*Gelechia* sp.?), which he had found feeding on the bark of the *Spindle Tree*, beneath masses of excrement of *Yponomeuta Evonymella*.

Mr. Janson exhibited specimens of *Throscus olateroides*, a species of small Beetle, new to Britain, taken by Messrs. Brewer and E. Smith, near *Rochester*.

The Chairman exhibited some interesting nests of Spiders and *Oiketicæ*, from Australia; and

Mr. E. L. Layard gave an account of the manner in which the caterpillars of the last-named genus (also found at the Cape of Good Hope, Ceylon, &c.), construct and enlarge the curious sack-like cases in which they reside.

Mr. Howard sent a small collection of insects of various orders, from *Port Natal*.

Mr. Layard called the attention of the Society to the fearful ravages of a small species of *White Ant* at *St. Helena*, which had been introduced into the island about twenty years ago from the west coast of Africa, and which threatened to destroy every portion of timber-work in the island. Already *James Town* may be said to be devastated by it. The Cathedral was entirely destroyed, as was also the Library and its contents. Teak is the only kind of wood they will not eat, although they freely bore through it. He also gave an account of the habits of *Honey Bees* at the Cape of Good Hope, where, although they sometimes took up their abodes in caverns, &c., where they had abundance of space, they swarmed as often as our domestic Bees confined in hives, and that, too, notwithstanding various means had been tried, including the use of *Nutt's* hives, without any satisfactory result in preventing the swarming.

The following papers were read:—"Notes on Collecting *Lepidopterous* Insects during the Spring of 1866 at *Hyères*," by the Rev. Douglas Timins, M.A. "Descriptions of New British *Ichneumonidae*," by Mr. Thomas Desvignes, in which nearly thirty new species belonging to *Gravenhorst's* genus *Tryphon* were described.

The Chairman announced that the part of the Society's "Transactions" containing Dr. Wallace's prize essay on the culture of the *Ailanthus Silk Moth*, was ready for distribution among the members.

HEATING BY GAS.

DURING a conversation relative to the modes of heating applicable to garden structures, one of the Editors of this Journal stated as his opinion that "there is no mode either more effective or attended by so small an amount of trouble as heating by gas." He qualified his opinion afterwards by reminding his auditors that he was talking to amateurs who managed their own small greenhouses and conservatories. He was asked to furnish a plan, and he endeavoured to escape by referring to the back volumes of this Journal. That, however, was not considered satisfactory, and eventually he promised that, if he thought it would be useful, he would gather together the statements and illustrations scattered through the volumes to which he had referred.

For the use of new subscribers he had arrived at an affirmative conclusion, when a letter from a correspondent, "J. P., Northampton," inquiring how he could best exclude frost from a small conservatory, now erecting, prompted to the speedy publication of what follows.

The simplest mode is using a gas stove. We have employed such a stove, merely to exclude frost from a greenhouse, and it answered very well. It was a small circular stove, with one Argand burner, and an iron tube instead of glass round the burner. An iron chimney carried off all the noxious gases.

A modification of this is the following:—

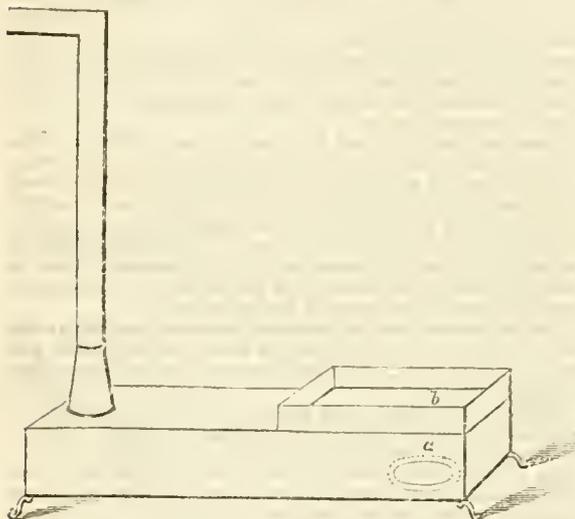


Fig. 1.

This apparatus (*fig. 1*), consists of a burner, *a*—a ring of brass tube—5½ inches in diameter, pierced with fifteen small holes, placed 4 inches above the level of the floor. Over the burner is what may be described as an inverted galvanised iron trough, 9 inches wide, 7 inches deep, and 5 feet long, resting on four legs 4 inches high. The burner is placed under one extremity of this trough; from the other end runs the chimney, which is of three-inch galvanised iron piping, the joints of which are not cemented. This rises 5 feet, and is then carried across the house 12 feet, and finally makes its exit in the kitchen chimney. It must either be carried into a chimney, or, if this is not possible, it should, after being carried across the house, rise 5 or 6 feet perpendicularly. Placed on the top of the trough over the burner is an evaporating-pan, *b*, containing about three gallons.

This arrangement, if not ornamental, is cheap and useful, and, with a little expense, may be made more elegant; at any rate, it is entirely removed during the season when the more attractive flowers of summer invite visitors.

The house is a lean-to, 14 feet square, and 13 feet high at the back.

If hot water is employed to diffuse the heat, then the amateur has the following modes to select from. The laudations of each are the inventors', not ours.

The greatest advantages the following mode (*figs. 2 and 3*), offers are the facts that it requires no expensive brick fixing, that it can easily be moved and adapted to another greenhouse in case of removal; it is clean, can be set in action in a moment, and is easily regulated even by a lady, and, where

there is gas, may be kept for any time at a comparatively small cost, when the great expense and trouble of the old mode is considered. There is no risk with gas of losing your plants in consequence of the fire going out, and no time lost in attending to them.

Fig. 2 is a sectional view of an apparatus in a cellar, from which the pipes are led to the greenhouse. *A* is the boiler, composed of two galvanised iron bowls, which may be bought

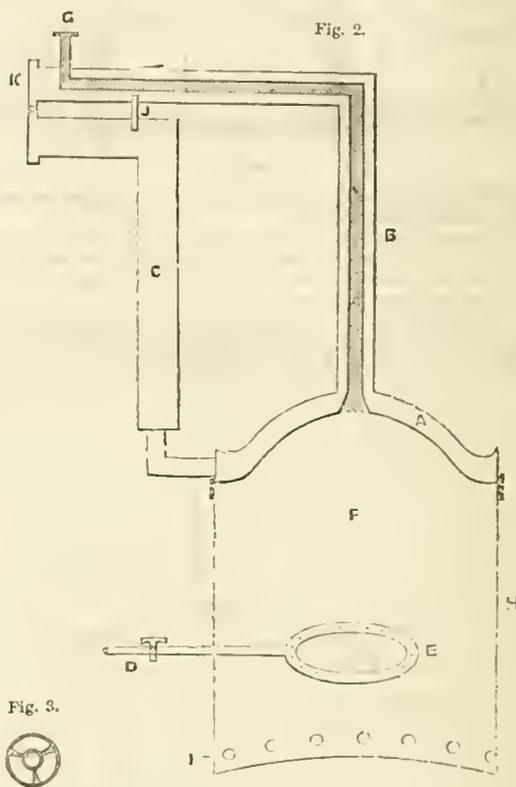


Fig. 2.

Fig. 3.

Fig. 2. Sectional view.
Fig. 3. Inner tube, kept in centre by stays.

for 1s. 6d. each, and which are soldered together an inch apart by means of a circular ring of No. 11 zinc. *n* is a flow-pipe, with *c*, a small tube (an inch clear), running through a good part of its length, and communicating as a chimney with the hot-air chamber *F*. *c*, Return pipe, galvanised iron, 3 inches in diameter, and connected to boiler. *e*, Ring-burner to be bought for 1s. 3d. *n*, Circular tube of sheet iron, same size as outer edge of boiler, and made to take away. There must be a small swing-door for lighting gas. *i* Are holes at bottom for the admission of air. *j*, Stay from one pipe to another. *k*, Union joints. These union joints can be in any part of the return-pipe, but can only be beyond the chimney on the flow-pipe. As a matter of course, the farther this inner tube goes through the flow-pipe, the greater afterwards is the facility for heating rapidly. For some time after heating there can be no heat felt issuing from the tube *c*, proving that the cold water is abstracting all the heat. When the water becomes heated then the warm air escapes; but, by lowering the burner, and a little attention at first to test its capacity, the loss of heat can be brought very low.

Fig. 3 is a section of the flow-pipe, showing how the inch tube is retained by stays in its place within it.

One advantage, and it is especially an advantage in a small structure, arises from the whole of a gas-heating apparatus being removable when no longer required. If there is a tap close to the wall on the gas supply-pipe, and the pipe attached to the gas-burner is connected with that tap by a galvanised indian-rubber joint, then the tap may turn off the supply of gas, and the stove, boiler, &c., be disconnected from it and removed at any time.

A correspondent states that for the last three years he has

used indian-rubber tubing alone, for jointing both hot-water and gas-pipes. After a severe test, it answers the purpose admirably.

A piece of galvanised indian-rubber tube, of a somewhat larger diameter than the pipes to be joined, is passed over the end of each. The vulcanised tubing is then encircled with stout string (S), at a distance of half an inch from the termination of either pipe, and tied up strongly and neatly. The junction presents the appearance represented in *fig. 4*. Though



Fig. 4.

so simple, this is a most effectual joint. Taps can be inserted in a similar manner.

The next (*fig. 5*), is in a greenhouse, span-roofed, with glass on all sides, and which is small, being only 12 feet square.

From the outside is laid a wooden box, 10 inches by 5, opening under the gas-burner.

To prevent any smell at lighting there should be a continuation of pipe beyond the burners, opening externally. Letting the gas escape from this for a minute ensures the pipes being

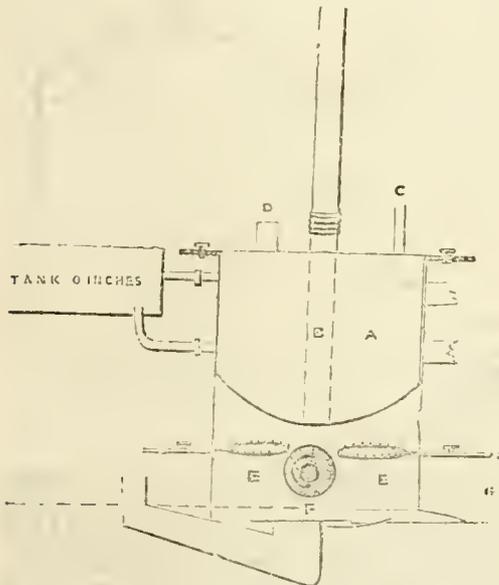


Fig. 5.

Wooden trunk for admission of air.

- A. The boiler.
- B. Chimney of two-inch screwed gas-pipe leading through the water.
- C. Steam safety-pipe opening externally, being of one-quarter-inch pewter-pipe.
- D. To supply water, kept close.
- E. Two gas-burners in rings. One has been sufficient at present.
- F. The door to pass in a light. This is a brass screw plug. Such can be bought at any brassfounder's. The centre has been cut out, and a small piece of talc inserted, as it is satisfactory to see the light. The door has a cross handle.
- G. Is a circular addition to the boiler, and ought to have at least 6 inches of ground round the bottom.

full of gas, and, consequently, it is quickly lighted. This addition is important, as mixed air and gas might puff out in the face, besides vitiating the atmosphere of the house. The boiler, &c., is all of copper, except the chimney, which is gas-pipe, and cost altogether about 70s. Three-quarter-inch pipe is recommended, as after midnight the pressure is only small, although quite sufficient. The apparatus is placed under a stage, and when not in use hidden by a pot of Ivy flat-trained on purpose.

Lastly, there is the following (*fig. 6*), patented by Mr. Clarke, Eagle Foundry, Liverpool. In this the boiler is formed of seven tubes, with a ring of jets of gas beneath. There are seven small burners, one fixed exactly under the centre of each tube. The boiler is made of copper, and is 12 inches high by 9 inches in diameter; and the water-space is between the tubes upon the same principle as in the locomotive engines. The whole is enclosed in a sheet-iron case just the shape of the boiler, made to fix on the top, and extending down the side nearly to the bottom. This case confines the heat to the outside of the boiler, and to prevent the cold air getting between this casing and the boiler a flange is fixed.

In the above drawing, A A are two cast-iron boxes about 9 inches long, and of just sufficient width and depth to admit of an inch-bore pipe being screwed into them. The top one, of course, forms the flow, and the bottom one the return. B is another box which answers for the return; C is a small air-tube; D the supply-cistern, which may be placed wherever most convenient so long as it is above the highest point of the pipes, which should be the box B; and E is where the supply-pipe, which need not be more than three-eighths of an inch thick, is generally put in.

There are four flows and four returns, the surface of which is a little more than two rows of four-inch-bore pipes; for the circumference of a four-inch-bore pipe is about 14½ inches, while that of four one-inch-bore pipes is better than 16 inches. Sometimes only three rows are used, and sometimes only two, according to the size of the house. F is a slide for lighting the gas, which can be opened and shut at pleasure. There is a tap for drawing the water off at any time. H is a two-inch sheet-iron tube for carrying off the burnt gas.

This boiler may stand in the greenhouse and the flue-pipe be taken through the roof, or, what is better, if practicable, put into a chimney-shaft. This boiler contains about three quarts of water.

Neither two nor three-inch pipes ought to be used for gas, if economy is to be considered. Supposing, for example, the circumference of a three-inch pipe is 9 inches, 1 foot in length would contain 84.82 cubic inches of water. Now, if we use three one-inch pipes instead of one three-inch pipe, we obtain the same heating surface, and have only 28.27 cubic inches of water to heat; consequently a great saving in gas is effected. With this gas boiler one-inch-bore wrought-iron pipes are used, and the frost is kept out of a greenhouse 20 feet long by 15 feet wide for something like 3s. 6d. or 4s. per week.

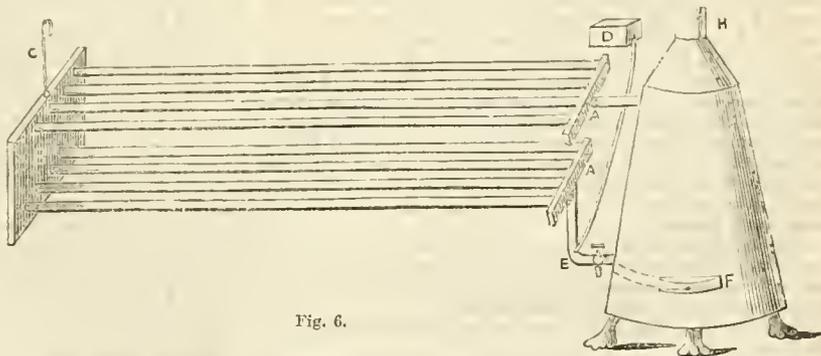


Fig. 6.

THE MANGOSTEEN.

"AGAIN [at Singapore] I tasted the Mangosteen; and I now boldly record my opinion that this much-vaunted fruit is inferior even to a Banana, and not to be compared with the Mango."—*Muter's Travels*, vol. ii., p. 181.

I have often closely questioned a naval friend, who has eaten

this fruit at Penang, a place in which alone it is said to be quite perfect. He always talks about it in a sort of rapturous way; but when I have given him a very fine well-ripened Nectarine, and have said, "Well, what do you now say about the Mangosteen?" he has paused and said, "This is quite as fine;

and if the weather were as hot as at Penang I should, as the Chinese say, kick up a bobby about it, equal to what we do at Penang about the Mangosteens."—T. R.

PROFIT FROM FORCING PEACHES.

THE erection of orchard-houses has now become so general, that a word in favour of their adoption would be unnecessary; but any facts which tend to illustrate their value must prove acceptable to all interested in the cultivation of fruit trees.

The rapid mode of transport which has originated within the last quarter of a century, has brought easily within our reach the productions of the gardens of our foreign neighbours, and in many cases within a few hours of such being gathered and packed; yet with all these advantages I am inclined to assert that the produce furnished by the forcing-houses and gardens of Great Britain has not decreased in value by reason of such competition.

The following facts will, I think, prove this; and similar evidence I believe is often obtained under similar circumstances, but passes unrecorded. If a debtor and creditor account of the marketable value of the produce were kept, it would afford evidence that the cultivation of fruit trees under glass is anything but unprofitable; though it is in many instances difficult to convince the grower to the contrary.

But to proceed. In a lean-to house, 38 feet by 16, we have here planted near the centre—that is, within the fourth of the distance of each end of the house, one Royal George Peach tree and one Nectarine. The two occupy the whole area of the house. The growth of the former exceeds the latter by one-fourth. The Peach tree has been planted twelve years. It was removed from the garden wall, against which it had been for some years previous to its removal. Every precaution has been taken to confine the roots to the border prepared for them inside the house, so that they may be entirely subjected to the heated air. The house is heated by means of three rows of four-inch pipes, one flow in front, and two return midway. The trees have been under my care since the autumn of 1861; and as we annually dispose of the fruit, of course a faithful account is kept of the sums obtained. That your readers may form a somewhat accurate idea of the value realised I here subjoin the details.

Year.	Ripe	Date	Peaches	dozen	Sum received.		
					£	s.	d.
1862	Ripe	June 15th	42½	dozen	42	10	0
1863	Ripe	May 24th	48	dozen	48	10	0
1864	Ripe	May 1st	48	dozen	67	0	0
1865	Ripe	April 21st	27	dozen	65	0	0
1866	Ripe	May 10th	38	dozen	50	0	0

The Nectarines yield annually about twenty dozen, and the sums obtained average about 15s. per dozen.

In deducting the expenses of labour and fuel, it should be considered that the house is but one of a range in which Grapes are forced, and that the whole of the compartments are heated by one of Weeks's No. 4 tubular boilers.—MICHAEL DAVIS, Gardener, Rockampton Park.

WORK FOR THE WEEK.

KITCHEN GARDEN.

DURING showery weather, such as we have lately experienced, it is difficult to keep down effectually the seedling weeds; no sooner does the bright sunshine tempt one to cut them up than down comes a shower, and starts many of them into renewed activity. To remedy this it is advisable, after hoeing through such crops as Onions, Carrots, Parsnips, &c., to choose a fine day soon afterwards, and go over the whole with a long-toothed iron rake. The disturbance is generally effectual in killing the weeds, and is, moreover, of great benefit to the crops by searifying the surface, and throwing it open to receive the full benefit of atmospheric influences. In deep, retentive, and cold soils it is advisable, in order to attain anything like success, to forward early crops by artificial means, and transplant. This practice is very essential, whatever the nature of the soil may be. One general effect of transplanting is to give the plants a check, which throws them sooner into bearing; at the same time, if the ground is in good condition, and well trenched, they are as productive as if sown in the open ground. Beans, make another sowing of Longpod if they are much in request, and take off the tops of those in blossom. Broccoli, make another sowing of Miller's Dwarf White Russian, these will come into bearing in the end of April and beginning of May.

Prick-out the Capo Broccoli and Cauliflowers, and keep all seedling crops of this kind well dusted with quicklime, otherwise you will have to repine over the loss of most of them from snails and slugs. Dwarf Kidney Beans, sow the dwarf sorts for success on, also Scarlet Runners, and transplant those which have been forwarded, if not already done. Sow also Jerusalem Kale, and the old English Colewort, both are very useful for planting after Potatoes. Peas, sow in smaller quantities for a succession; the north side of sloping banks is well adapted for these sowings, being generally cooler and more retentive of moisture. Keep the surface well loosened amongst Peas just coming up, and earth-up and stake others as they become ready. Spinach, keep up successions. Turnips, sow another good breadth, and thin-out those advancing; endeavour to keep them in a healthy growing state, which is one of the best preventives against the early-sown ones running to seed.

FRUIT GARDEN.

Peach and Nectarine trees infested with green fly, and having curled or blistered leaves, should be well syringed with strong lime water from a garden engine. Continue to nail-in the young shoots of all kinds of fruit trees as they become sufficiently advanced, and keep the finger and thumb at work amongst superfluous shoots. Give the Strawberry-beds a final stirring, and have some available material at hand for laying about the plants, to prevent the fruit from becoming dirty. Keep a number of figure-4 traps constantly set about the beds, as there are no greater destroyers of Strawberries than mice.

FLOWER GARDEN.

Recently-transplanted trees and shrubs must be carefully attended to with water until fairly established. It is frequently the case, however, that too much water is given at the root, thereby souring the soil, and rendering it uncongenial to the young rootlets and the after-growth of the plants. The soil should be kept moist, but not to the extent of saturation, and the plants should be watered overhead with the engine on the evenings of bright days, which will be of more service in repairing the loss sustained by evaporation than if given in excess to the soil while there is a deficiency of active rootlets to absorb it. When Roses are infested with the grub, it will be necessary to go over the plants frequently to destroy this pest. Green fly is also sometimes very troublesome at this season; a good washing with the garden engine on two or three successive evenings will greatly assist in exterminating it. With the wind east, and a fair prospect of a sharp frost any night, there is no great inducement to commence bedding-out in earnest. It is to be hoped, however, that we shall have experienced a favourable change before the appearance of this notice, and that the planting of all properly-prepared stock may be proceeding under favourable auspices. Begin with Calceolarias, Verbenas, and Scarlet Geraniums, leaving Heliotropes, Lantanas, Anagallis, and such things as are easily injured by frost, until planting the more hardy shall have been completed. Branches of evergreens are easily enough obtained in most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effects of bright sunshine, and will also ward off a degree of frost which to unprotected plants would be destructive. All shoots which are long enough to be injured through being blown about by the wind, should be pegged down immediately on planting out, and a good watering should be given to settle the soil about the roots. This, however, will be better done early in the morning, if there is any reason to fear frost. Auriculas should now be placed on a north border, the seed will ripen there very well; if the pots are well drained, and placed on a layer of ashes to prevent the ingress of worms, the plants will sustain no injury from exposure. Polyanthes require more shading than the Auricula, otherwise they are liable to the attacks of red spider. Carnations and Picoetes are growing fast, so are weeds, which must be taken from the pots as they appear. Cut over those which are spindling without showing increase. Do not delay putting down the sticks to which they are to be attached. Pansies may be shaded, and not too many pods of seed allowed to ripen. Tie up Pinks as they spindle.

GREENHOUSE AND CONSERVATORY.

Some of the earlier-flowering New Holland and other greenhouse plants will soon be past their best, and a judicious amount of foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. Many subjects in the stove, as Achimenes, Gloxinias, &c., should now be in a forward state, but these must be carefully prepared for removal to the cooler and drier atmosphere of the

conservatory, otherwise there will be great risk of injuring the foliage, &c. When circumstances will admit, plants that have grown in a moist, warm atmosphere should be removed to an intermediate-house about a fortnight previous to their being taken to the conservatory. *Clerodendrons*, *Allamandas*, &c., will continue growing slowly and blooming for three months at a time, whereas if this is neglected, their beauty may be very short-lived. Aim at maintaining an even temperature in the conservatory after removing plants thence that have grown in the stove, and furnish a little shade on bright sunny days; also, see that every plant is perfectly clean before placing it in this house, and that the creepers, &c., are not infested with insects. To the last-named class of plants should be added the charming *Bougainvillea*, and the beautiful *Lapageria rosea*. For the former the warmest part of the house should be selected, and if possible its roots should have a little artificial heat. Young stock in pits will now be making rapid growth, and must be carefully attended to as to watering, stopping, training, &c. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the softwooded varieties being very liable to be attacked by that pest at this season.

STOVE.

The plants here will be growing very freely, and will require frequent attention as to training, stopping, &c. Keep them properly supplied with pot-room, and afford them all the sunshine that they will bear without scorching, with a moist atmosphere, admitting air on mild days. Go over creepers frequently, so as to direct their growth, and prevent their becoming entangled, which without attention will soon be the case. Syringe and shut up early in the afternoons of bright days, and be as sparing as possible of artificial heat. Afford Orchids in growth a thoroughly moist atmosphere, giving them a good steaming every bright afternoon, by syringing and shutting up early. Admit air in moderate quantities on mild soft days, but carefully avoid currents of drying winds. Examine the plants individually every other day, and water such as require it, but be careful not to give too much to those starting into growth, and a cool atmosphere will greatly assist in prolonging the beauty of those in bloom.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Took the opportunity of the dry days to run the Dutch hoe among all growing crops, as Cabbages, Cauliflower, Onions, and Potatoes. Pricked-out Lettuces, Cauliflowers, &c., and planted beds of Mint and other herbs, as these little matters are often of more consequence than greater things. A celebrated gardener told us that the greatest annoyance he ever endured was to be almost without Parsley, and that season, do what he would, it would not grow, and he only succeeded at last by raising it in boxes, and transplanting it into fresh soil obtained from the sides of the highway. We have heard often enough of land being Clover-sick, but never before of ground being Parsley-sick. Ever afterwards our friend turned his soil intended for Parsley deeply, in order that there might be fresh soil for it to root in. Previously the Parsley flourished well enough at first, but then the roots would all rot and damp away without any apparent cause.

Fresh soil may remedy the evil complained of by our correspondent "VEXED." What seems to vex him chiefly is the supposed fact that Parsley is so much more in demand now that he is short of it. We say supposed, as it may only be a supposition, because, though there is a natural tendency in us to value most that which is scarcest, there is also a tendency to think that people are taking advantage of our deficiency, when really they are only taking the usual supply. However, in all such matters it is generally sound policy to say as little as possible of being short of anything, as that may give it a value to the consumer which it never had before. On the other hand, the best things will pall on the appetite if presented too often. Only give a lady Kidney Beans every day in December, and they will come to be no more valued than they would be in August.

Dwarf Kidney Beans.—Sowed out of doors in rows 2 feet apart; turned a lot out of four-inch into ten-inch pots, and set them in the front of an orchard-house. Thinned those standing behind the standard trees in the orchard-house, as they were rather too cool and shaded to open their bloom so fast as we wanted. By moving one half to a pit we set the rest in the

open spaces, and they will thus form successions. Those early fruiting ones that, after bearing heavily, had been cut back and planted out in an earth-pit with a little protection, are breaking and showing well, so that at farthest there will only be a few days when we cannot gather. We might have continued with a bed of Newington Wonder, but this small kind is not so good for late as for early forcing, as the Beans are apt to form so quickly even in young pods. We wanted the room very much for Strawberries, and as the leaves were becoming a little shabby from frequent pruning, we pulled them out, and prepared the place for Strawberries, which see.

Potatoes.—We still have a few to plant. Gave plenty of light and air to those under protection. Dug up some beds that have been exposed for some time, and brought back frames again to be placed over Strawberries, lifted and planted out in the soil in which the Potatoes grew. We allude to the matter chiefly to chronicle how well the Potatoes in seven-inch and twelve-inch pots did this season. We have found, after several years' experience, that much more produce in the same room may be obtained from pots than from planting in a pit and frame in the usual way. In the smaller pots we generally put one set, and mostly obtained from six to eight good-sized Potatoes, and from the larger pots nearly as much in proportion. Besides, the pots could be moved from place to place, a matter of importance where there is little room under glass. We used also to be fortunate when placing a set in a four or five-inch pot, and when the stem was 6 inches high, plunging the pot and 2 or 3 inches of the stem in leaf mould. The Potatoes then lay generally on a level with the surface of the pot, and without the plunging the new Potatoes would have been greened. Counting glass light for light, and under pretty similar conditions as respects artificial heat, we obtained fully one-third more produce from those in pots, and when the pots are not large the Potatoes may be fingered to obtain a few of the best, with less injury to those remaining than when planted out in beds.

Cucumbers.—Pruned severely the earliest three lights that bore heavily, to give them a chance of fresh growth, and if they do not come strong will replace with plants now rooting from cuttings. Volunteer we consider one of the best Cucumbers to bear of the rather smooth-skinned kinds. Telegraph is also very good, and grows longer. Conqueror of the West has a nice bloom for those who wish the Cucumber to appear whole on the table. Ayres's Perfection, a small variety of the Kenyon or Sion House race, is a fine bearer, and useful for those who want a small fresh Cucumber every day. It is generally very crisp and sweet, when 1 inch, or rather three quarters of an inch in diameter, and 6 or 7 inches long. In front of those in frames, we have applied a lining chiefly of mown grass after it had lain to heat, taking care that no fumes from it should find their way inside the frames. This would not have been wanted but for two circumstances: The beds originally, from shortness of material, were made shallow, and the heavy rains running down the glass had soaked into the front and cooled the beds there. We used to prevent this by one of two simple modes, and we have been going to do it every day; but though a small job, every day brought so much work, that it is not done yet. The simplest mode is to have boards 1 inch thick, and from 9 to 12 inches wide, to place in a slanting position in front of the frame, so as to catch all the rain that comes from the glass, and throw it all that farther away from the bed. This is a very quick and simple mode, where you can be fortunate enough to lay your hands on the boards, and this we could not manage. The boards will be sure to warp in such a position if let alone; but they will be serviceable for this purpose for a long time, if the person who uncovers or looks after the frames would just turn the boards upside down every second day or so, which, notwithstanding sun and weather, would keep them straight and level. Such boards placed close to the frame would also be so far a safeguard against steam rising and penetrating into the frame from the linings. Wherever linings are used, and these are not wrought sweet previously, which we never could think of, care must be taken that no effluvia from them pass into the frame. Some leaves were sent to us the other day that were thoroughly destroyed by rank steam from dung linings. We did not need to be told, that in giving air the sash had been slid down, and thus the steam rising had free access to the interior. If such sashes had been tilted up at the back, the steam from the front linings, however rank, might have risen, but it would not have passed into the frame. It is just such simple matters as these, when the roughest materials must be used without much preparation, that make all the difference

between success and failure. The sliding down a sash for air, and the tilting it up behind, may thus be attended with very different results. In all cases where particular care is required, tilting is the safest, not to speak of deleterious steams entering from the front; no fresh air can then reach the plants at the back without first passing through the warm, moist air issuing out.

Under such circumstances, even the covering-up at night is a matter of importance. One man will throw on a mat and tuck it in nicely back and front, so that not a bit of it shall extend beyond the glass sash. Another will throw it on and let it hang over back and front—a matter of little moment if there is no lining, or if that is perfectly sweet, but likely to cause very injurious consequences indeed if rank steams are rising from the lining, and these by means of the overhanging mat are encouraged to find their way into the atmosphere of the frame, through every chink, opening, and lap in the glass.

Our readers will excuse with their usual kindness this digression that has taken us so far from the second mode of keeping the rain falling on the glass from passing into the front of hotbeds, and thus soaking and cooling them, and that is the fastening a small spout in front for the purpose. Tin, zinc, or anything would do, the simplest of all, perhaps, being two slips of wood three-quarters of an inch thick, and 3 inches wide, bevelled and fastened together by the edges so as to resemble the letter V, and one side fastened in a sloping direction to the frame, some simple means being provided to take the water away from the lowest end. A little tar, or pitch, run along the angle of the V makes all water-tight. Such a simple plan saves the front of a hotbed from becoming cooled and drenched.

FRUIT GARDEN.

Strawberries.—These, if gathered in bright weather and before watering the pots, we always consider at this season to be preferable to those obtained out of doors. It always goes so far against the grain to gather Strawberries for table, and even more so to pack them for sending away, immediately after the plants have been watered. They travel worse, and the flavour is not so good. There is almost as much difference as between gathering a dish out of doors in bright sunny weather, and gathering a dish after several days' rain, and little or no sun. The end of May has always proved with us the most troublesome period as respects Strawberries, and chiefly because then we are generally obliged, much against our will, to give a portion of them a place to themselves, instead of continuing, as at other times, to make them merely a subsidiary crop. As yet in a lean-to Peach-house about 11 feet wide, with trees on a front trellis, and trees against the back wall, we have still four rows of Strawberries which receive justice—that is, a row suspended about a yard from the back wall, another row suspended about the middle of the house, a third ripening its fruit between the two—at the top of the trellis—and a fourth row near the front. These receive all justice from free exposure to every ray of sunlight; and as we can bring a circulation of air all over them and near the glass, we can set the fruit in this house at an angle of 45°, as we can do nowhere else with so little trouble. As soon as the Peach-house is started, we therefore set the fruit of Strawberries here, and take them into other places, warmer or cooler, according to circumstances, to swell and ripen. As the Peaches, however, are swelling to ripening, we must take all these pots gradually away, so that the fruit, and the wood, too, of the Peaches may have the advantage of the full sun unobstructed by these suspended shelves.—R. F.

COVENT GARDEN MARKET.—MAY 19.

Among our imports this week we have received, in addition to those named in former reports, Apricots and Strawberries, neither of which, however, came to hand in good condition. Cherries also have been very damp. Peaches and Nectarines are improving. The supply and demand are about balanced, with the exception of Strawberries, which have maintained a high price during the week

FRUIT.

	s. d.	s. d.		s. d.	s. d.			
Apples 1/2 sieve	4	0	8	Melons each	8	0	12	0
Apricots doz.	0	0	0	Nectarines doz.	15	0	30	0
Cherries lb.	2	0	3	Oranges 100	6	0	12	0
Chestnuts bush.	0	0	0	Peaches doz.	30	0	43	0
Currants, Red 1/2 sieve	0	0	0	Pears (dessert) doz.	0	0	0	0
Black do.	0	0	0	" kitchen doz.	0	0	0	0
Figs doz.	8	0	15	Pine Apples lb.	8	0	12	0
Filberts lb.	0	0	0	Plums 1/2 sieve	0	0	0	0
Cobs 100 lbs.	0	0	0	Quinces 1/2 sieve	0	0	0	0
Gooseberries quart	2	0	0	Raspberries lb.	0	0	0	0
Grapes, Hothouse lb.	8	0	15	Strawberries oz.	1	0	1	6
Lemons 100	6	0	10	Walnuts bush.	14	0	20	0

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.				
Artichokes each	0	3	0	6	Leeks bunch	0	3	0	0
Asparagus bundle	3	0	8	0	Lettuce per doz.	1	0	1	6
Beans, Broad bushel	0	0	0	0	Mushrooms pottle	1	0	2	0
" Kidney 100	2	0	2	6	Must.& Cress, pannel	0	2	0	0
Beet, Red doz.	2	0	5	0	Onions bushel	6	0	8	0
Broccoli bundle	1	0	1	6	Parsley sleeve	2	0	0	0
Bruss. Sprouts 1/2 sieve	0	0	0	0	Parsnips doz.	0	9	1	0
Cabbage doz.	1	0	2	0	Peas per quart	4	0	6	0
Capsolems 100	0	0	0	0	Potatoes bushel	0	6	4	0
Carrots bush	0	4	0	0	" Kidney do.	3	0	4	0
Cauliflower doz.	2	0	6	0	Radishes doz. hands	0	6	1	0
Celery bundle	2	0	3	0	Rhubarb hands	0	4	0	8
Cucumber each	0	4	1	0	Savoy doz.	0	0	0	0
" pickling doz.	0	0	0	0	Sau-kalo basket	0	0	0	0
Endive doz.	3	0	0	0	Shallots lb.	0	8	0	0
Fennel bunch	0	3	0	0	Spinach bushel	4	0	5	0
Garlic lb.	1	0	0	0	Tomatoes 1/2 sieve	0	0	0	0
Herbs bunch	0	3	0	0	Turnips bunch	0	4	0	6
Horseradish bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0

TO CORRESPONDENTS.

INSECT ON VINE (T. Hackley).—It is the Vine scale (*Coccus vitis*). You may destroy it by brushing it over with a crummy mixture of soft soap and flowers of sulphur in water.

Mrs. POLLOCK GERANIUM BECOMING GREEN (Y. Y.).—All variegated Geraniums have a tendency to return to the green state. If the plant is kept in a shady place there is a greater tendency. It is just possible that there might be a mistake as to the plant in your case. The *Trifolium repens* is the hardy creeping white Clover found in meadows, not the brown Clover.

NEW HOE (J. Crick).—The hoe of which we gave a drawing on p. 629 is an American invention, and not patented in this country. It needs no trial, for any gardener can at once estimate its merit.

PLANTS FOR STANDING IN POTS IN WATER (R. C. B.).—If you wish for something with large foliage, then *Richardia ethnopia* and its variegated variety *R. albo-maculata* would do from May to October; and if for something very neat, then *Isolepis gracilis* placed on inverted saucers so that the pots would be an inch or two in the water, and so close together that the leaves may meet. *Cyperus alternifolius* would look well. These would only do from May to October. If you wish for something permanent, then we would plant *Hydrocharis morsus-ranae*, *Utricularia vulgaris*, and *Hottentia palustris*, or say of the smaller-growing aquatics, planting in an inch of mud and the same depth of sand.

PLANTING TOPHOBOLM CANARIENSE AND LOPHOSPERMUM SCANDENS (A Subscriber).—Your plants, if well hardened off, may be planted out by the side of a house, but they will not do well on a north aspect.

RUST ON GLADIOLI (Tullyhallan).—We know of no cure; but we find a top-dressing of rich compost, and plentiful supplies of water in dry weather, and syringing or sprinkling overhead in the evening of hot days with aired water, do much to lessen the evil. The soil has much to do with it. We think of soil partaking more or less of a peaty nature they are rarely attacked.

VERUSSEUXIA (IRIS) PAVONINA AND CAMASSIA ESCULENTA (G. S.).—These bulbs are quite hardy, but grow indifferently in cold situations and in wet heavy soils. They require warm situations, and well-drained loam inclined to be sandy, and if these be secured to them they do well. Both are fine for pot culture; and if your situation is at all cold or exposed, you will succeed better by growing them as you did *Camassia esculenta*, in a cool house. They are very ornamental for the greenhouse and conservatory.

Books (A. Thibhead).—Louden's "Self Instruction for Young Gardeners," directs how to measure timber. We cannot give the details, for it is a common arithmetical proceeding. Stephens' "Book of the Farm" is one of the best books on agriculture. (T. O. R.).—Louden's "Self Instruction for Young Gardeners," gives the information as to seed-drawing, which you require. It is published by Messrs. Longman & Co.

TWINGING TREMS (Scots).—Some, as those of the *Honeysuckle* and *Black Bryony*, follow the apparent motion of the sun, twisting round their support from left to right. Others, as the *Great Bindweed* (*Calystegia sepium*), twist the contrary way—namely, from right to left. They never change the direction of their twisting—that is, the *Honeysuckle* and others never twist from right to left, and the *Great Bindweed* never twists from left to right. If grown in the dark, twining plants lose the power of twining; but directly they are restored to the light, and renew a healthy growth, they resume their natural direction in twining.

PRICES IN HENRY VIII'S REIGN (J. P. S.).—We cannot undertake to calculate whether other fruits and eatables bore a price proportionate to the Lemon, which then cost "six silver pennies;" but we can add the prices paid for some articles for the King's use when residing at his Greenwich Palace in the October of 1518. 2 Doz. fat capons, 4s. Pigeons, 92 doz., 28s. Rabbits, "soucars," 2 doz., 5s. 8d. Conies, 31 doz., 6s. Geese, 5 dozen and 8, 23s. 8d. 4 Peacocks, 8s. 18 Partridges, 8s. Eggs, 2500, 3s. Apples, 1300, 6s. 8d. Onions, 13 bunches, 15d. Quinces, 250, 6s. 8d. Herbs, 4d.—(Letters and Papers Temp. Henry VIII. by J. Brewer. Published by Direction of the Master of the Rolls, ii. pt. 2, p. 151.)

LUBRON-BORDER (M. H.).—All the three plans would do well, but there might be a difficulty as to height. Using your materials, we think the following would be an improvement, beginning at the back:—*Perilla*; *Calceolaria strocy* yellow, as *amplexicaulis* or *Aureantia multiflora*; *Geranium*, as *Stella* or *Boule de Floz*; *Variegated Mint*; *Purple King Verbena*; *Calceolaria*, dwarf yellow; *scarlet Verbena*; *blue Lobelia*; *Cerastium*.

INSECTS (A Subscriber).—Your insect is the common aquatic *Notonecta glauca*. (*C. C. E.*).—The red eggs are those of the *Bark Mite*. The caterpillars had escaped, the box having been crushed in the post.—W.

SECKLE PEAN (Rev. C. C. E.).—We have received the twig, but can see nothing peculiar about it, except that the post-office officials had squeezed and punched it quite flat.

VINE LEAVES DISFIGURED (*H. P.*).—The leaves were too withered to enable us to decide absolutely the cause of the disfigurement. There seemed to be a few marks, as if there were traces of mildew, but we could not be certain. However, the bulk of the spotting left no doubt on our mind that scalding with hot vapour was the chief cause, most likely produced by giving air too late in the morning. We would advise discontinuing syringing at night, putting a little fire on in cold nights, and leaving a little air on all night at the highest point of the roof, giving more as the sun acquires power. This will prevent the accumulation of close heated vapour.

NAMES OF PLANTS (*M. A. S.*).—Berberis Darwinii. It is a native of the

coast of South Chili, where it was discovered by Mr. Darwin, but was first introduced to this country by Messrs. Veitch. (*A Subscriber*).—The flower is evidently a *Viola*, but was quite smashed when received. It may be valuable for spring bedding, but to determine that the plant must be seen. (*Prospera*).—We are sorry again to say that it is impossible to name the scraps sent. (*B. H.*).—*Sedum carnosum variegatum*. (*J. G. Renshaw*).—From the fronds sent we see no reason why it should not be *Lomaria gibba*. (*Messrs.*).—1, *Polystichum aculeatum* var.; 2, *Cyrtomium falcatum*; 3, *Scelopendrium vulgare*; 4, *Asplenium*, insufficient for determination; 5, *Onychium japonicum*; 6, *Platyloma rotundifolia*. (*A Constant Reader*).—1, *Colathea zebrina*; 2, mislaid; 3, *Cytisus purpureus*; 4, *Cytisus biflorus*; 5, *Prunus padus*; 6, *Coronilla emerus*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 19th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. .. 13	30.105	29.944	53	32	54	51	S.W.	.00	Cold with dusky and white clouds, fine; nearly freezing at night.
Mon. .. 14	30.192	30.118	57	26	53	51	W.	.00	Fine; uniformly overcast with dusky haze; frosty.
Tues. . 15	30.359	30.161	55	30	51	51	W.	.00	Clear and cold; cloudy; fine; frosty at night.
Wed. . 16	30.896	30.299	53	28	53	50½	S.E.	.00	Hazy and cold; cloudy; below freezing at night.
Thurs. 17	30.270	30.192	61	28	54	51	S.	.00	Slight haze; very fine; frosty at night.
Fri. . 18	30.172	30.126	71	32	54½	51	S.E.	.09	Noon frost early; very fine; at freezing in the night.
Sat. . 19	30.149	30.132	71	32	55	51	E.	.00	Very fine; hot sun, with dry air; fine; cold at night.
Mean	30.230	30.139	60.85	29.71	53.93	50.93	..	0.00	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

PREVENTING FOWLS SCRATCHING.

We have received the following inquiry:—
“Can you tell me of any plan to prevent Bantams scratching in flower-beds? I have tried sewing up their feet in canvas, but do not find it effectual.”

We think that the handwriting is that of a lady, and she adopts the motto, “Firm.” If she be “firm of purpose,” then she may carry out the suggestion offered in this letter from another correspondent, “W. Parker.”—

“I lately received a letter from a son of mine who is at Port Natal, in which he says—‘Up the country where I have been, they have the most clever way of preventing the fowls from scratching the ground that ever I heard of. They cut the fowls’ toes off when they are first hatched, and I can assure you that it is a perfect remedy, for it is impossible for them to scratch afterwards.’”

So we should have concluded without any such assurance!

The frost often does in this country that which the natives do at Port Natal—it takes off the nails of the fowls, and in places where they have the run of the kitchen in cold weather, they get into the wood ashes and burn their nails off. This, we expect, is the African operation. The *nail* only is removed. This would matter little in a light soil, as the toes will turn over leaves, or loose earth; but if the *toes* were removed they would be poultry “Widdringtons,” and “hobble on their stumps,” even if they were not altogether incapable of locomotion.

To “Firm” we can state no plan for preventing Bantams scratching; but our plea for them is, they are searching for our garden enemies when they scratch. They are hunting for creatures that do far more mischief than they do. On their behalf we plead guilty to untidiness.

A gentleman was complaining to us once of the damage done by Pheasants to the farm crops. We had a hen Pheasant at hand, and opened the crop to examine its contents. It contained seventy-one grubs. These would have destroyed twice as much food as the Pheasant would have eaten, and would have given birth to other insects which would have multiplied geometrically.

CIRENCESTER POULTRY SHOW.

The schedule of this proposed Show is now in print, and for the amount of entry payment the prizes are very liberal. Spanish, Dorking, Cochins, two classes; Brahmas, dark and light, each a class; Game, two classes; Hamburgs pencilled, Hamburgs spangled, Bantams, two classes; Ducks, three classes; any other variety, first prize 30s., second 10s.; the any other variety Dorking, Buff Cochin, and Black-breasted and other Red Game have a third prize of 7s. 6d.; the selling class has also the same amount of prizes. The entry is the very

moderate amount of 3s., the Show a one-day show, and the occupants of the pens to be one male and one female.

Besides these there are sweepstakes for single cocks 5s. each; these are never very popular, but there is the extra inducement of a silver cup for the best bird in the eight classes, in addition to the winnings. There seems to be an omission as to the restricted price for the selling class. There also appears to be an omission of a Poland class; there is plenty of time to alter this, indeed it would be easy to add a slip to each schedule as sent out. For a first attempt, it is very good. Let the southrons show that they can fill the pens and support it.—Y. B. A. Z.

SHEFFIELD POULTRY SHOW.

THIS was opened on the 19th inst, and closes this day. Subjoined are the awards, but we must defer our remarks till next week.

SPANISH.—First, and ease of fifty-three pieces of cutlery, H. Beldon. Second, Messrs. Burch & Boulter. Third, W. Harvey. Highly Commended, J. Thresh; J. Kidpath. Commended, A. O. Worthington; J. Thresh.

DORKINGS.—First, Mrs. F. S. Arkwright. Second, Sir St. G. Gore. Third, T. Burgess. Highly Commended, H. Saville; Sir St. G. Gore. W. Harvey; Admiral Hornby.

COCHIN-CHINA (Cinnamon and Buff).—First, C. W. Brierley. Second, T. Stretch. Third, J. Cattell. Highly Commended, R. W. Boyle; A. F. Watkin. Commended, J. Poole.

COCHIN-CHINA (Partridge and Grouse-feathered).—First, J. Stephens. Second, E. Tudman. Third, T. Stretch. Commended, T. Bott; E. Tudman.

BRABMA POOTRA.—First, J. H. Pickles. Second, R. W. Boyle. Third, F. Powell. Commended, R. W. Boyle; W. Harvey.

GAME (Black and Brown-breasted Red).—First and Third, Sir St. G. Gore. Second, Hon. H. W. Fitzwilliam. Highly Commended, C. Chaloner; T. Burgess. Commended, S. Matthews; Hon. H. W. Fitzwilliam; G. Hellewell.

GAME (Any other colour).—First, G. Hellewell. Second, W. J. Copo. Third, C. Chaloner. Commended, Sir St. G. Gore; F. Sales.

HAMBURGH (Golden-pencilled).—First, H. Beldon. Second, T. Wigley, jun. Third, C. Tattersall. Commended, R. Burrow.

HAMBURGH (Silver-pencilled).—First, Sir St. G. Gore. Second, E. D. Yeardeley. Third, A. K. Wood.

HAMBURGH (Golden-spangled).—First, A. K. Wood. Second, H. Beldon. Third, J. Newton. Highly Commended, S. Mills, jun. Commended, J. Bneley; Sir St. G. Gore; J. Roe.

HAMBURGH (Silver-spangled).—First, and Lignor Stand, J. Fielding. Second, A. K. Wood. Third, Sir St. G. Gore. Highly Commended, Sir St. G. Gore; H. Beldon; A. K. Wood.

POLISH (Black with Crests).—First, S. Farrington. Second, E. J. Proctor.

POLISH (Any other colour).—First, Second, and Egg-stand and Spoons, H. Beldon (Golden). Highly Commended, Sir St. G. Gore. Commended, E. Smith (Silver-spangled); W. Silvester (Golden).

BANTAMS (Game).—First, Sir St. G. Gore. Second, E. Foder (Black-breasted Red). Third, H. Shumach.

BANTAMS (Black or White, Clean-legged).—First, J. W. Morris (Black). Second, Sir St. G. Gore. Highly Commended, Sir St. G. Gore. Commended, E. Cambridge (White).

BANTAMS (Any other colour).—First, Messrs. S. & R. Ashton (Silver-laced). Second, H. Beldon (Japanese Bantams).

ANY OTHER DISTINCT BREED.—First, Hon. H. W. Fitzwilliam (Crève Coeurs). Second, F. W. Zurhorst (La Fleche). Third, J. O’Leary (Minorea). Highly Commended, Rev. G. Hustler (Houdan); E. W. Zurhorst (Sultaa); H. Beldon (Black Hamburg); R. Loft (Sultaa). Commended, W. Dawson (White Cochin).

SINGLE COCKS.

SPANISH.—First, H. Beldon. Second, T. B. Hartley. Commended, J. Thresh.

DORRINGS.—First, Sir St. G. Gore. Second, Rev. T. O'Grady. Commended, W. Harvey.

COCHIN-CHINA.—First, W. Harvey. Second, J. Bradock. Highly Commended, B. W. Boyle.

GAME.—First and Second, C. W. Brierley. Third, Sir St. G. Gore. Highly Commended, H. Crossley; Sir St. G. Gore. Commended, A. B. Dyas.

HAMBURGH (Pencilled).—First, H. Beldon. Second, Sir St. G. Gore. **HAMBURGH (Spangled).**—First, Sir St. G. Gore. Second, J. Fielding. Highly Commended, J. H. Turner.

BANTAM (Game).—First, Sir St. G. Gore. Second, J. Crossland, jun. Third, J. A. Collinson. Highly Commended, Hon. H. W. Fitzwilliam. Commended, K. Tate; J. W. Morris; H. Buckley; J. Fryer.

GAME HENS.—First, Sir St. G. Gore. Second, C. Challoner. Highly Commended, J. G. Pearson; W. Bradley. Commended, W. Hargreaves; C. Challoner.

PAIR OF HENS (Any variety).—First, Messrs. Burch & Boulter (Spanish). Second, Hon. H. W. Fitzwilliam (Dorkings). Highly Commended, W. Roberts (Duckwing Game); Sir St. G. Gore, Bart. (Polands); G. H. Roberts (Brahma Pootra); R. F. Goodwin (Black Hamburg); W. Silvester (Golden Polish). Commended, J. G. Pearson Coloured Dorkings.

DUCKS (White Aylesbury).—First and Second, J. K. Fowler. **DUCKS (Rouen).**—First, Sir St. G. Gore, Bart. Second, G. Wostenholm. **DUCKS (Any other variety).**—First, T. C. Harrison (Mandarins). Second, J. R. Jessop (Carolina Ducks). Highly Commended, Sir St. G. Gore, Bart. (Grey Calls).

SELLING CLASS.—First, H. Saville (Sebastopol Goose and Gander). Second, G. H. Roberts (Brahma Pootra). Third, Messrs. Hindle and Furniss (Silver-pencilled Hamburg). Highly Commended, Rev. P. W. Story (White Feathered-legged Bantams); J. Stephens (Laced Bantam); J. Booth (Silver-spangled Hamburg). Commended, H. Beldon; F. Powell; T. Dyson (Silver-pencilled Hamburg); E. Loft (Sultan); J. Marchant (Spanish).

PIGEONS.

CARRIERS.—*Cock.*—First, Miss E. Brown. Second, J. Smith. Third, R. Fulton. Commended, F. Bower. *Hen.*—First, R. Fulton. Second, G. F. Statter. Third, — Firth, jun.

POWERS.—*Cock.*—First, W. Harvey. Second, R. Fulton. Third, G. Wostenholm. Commended, Miss E. Brown; G. Crookes; H. Brown. *Hen.*—First, F. Key. Second, W. Harvey. Third, R. Fulton. Highly Commended, W. Harvey.

TUMBLERS (Almond).—First, R. Fulton. Second, F. Key. Third, E. D. Yearley. Commended, F. C. Bradley; Miss E. Brown.

TUMBLERS (Any other variety).—First, R. Fulton (Short-faced). Second, H. Yardley. Third, G. Wostenholm (Mottled). Highly Commended, F. C. Bradley (Black Kite); H. Yardley.

OWLS.—First, J. Fielding, jun. (Blue Owls). Second, H. Yardley. Third, W. Pepper.

TURBINS.—First, W. T. Wilkinson, jun. Second, Miss E. Brown. Third, H. Yardley.

FANTAILS.—First and Third, H. Yardley. Second, W. Pepper.

JACOBINS.—First, Miss E. Brown. Second, Messrs. C. & E. Roysds. Third, H. Yardley.

BARBS.—First, H. Beldon. Second and Third, H. Yardley. Highly Commended, G. H. Roberts.

DRAGONS.—First and Third, H. Yardley. Second, W. Harvey.

ANY OTHER DISTINCT BREED.—First and Third, H. Yardley. Second, W. Harvey (Yellow Swallows). Highly Commended, H. Beldon. Commended, Miss E. Brown (Swiss); H. Yardley.

SELLING CLASS.—First, Messrs. C. & E. Roysds (Turbit). Second, J. J. Wilson (Mottled Trumpeters). Third, H. Beldon (Yellow Turbits).

The Judges were Richard Techar, Esq., of Fulwood, near Preston. and Edward Hewitt, Esq., of Sparkbrook, near Birmingham.

LIGURIAN BEES.

In your impression of the 18th of July last you were kind enough to insert some rather crude notes from my journal in reference to a stock of Ligurian bees from Mr. Woodbury's apiary. Since that time I have been entirely successful in raising four queens artificially by following Mr. Woodbury's directions in your Journal, and it is only fair to add that I have found every direction coming from that gentleman quite to the point, and very practical.

I am sorry to have to say that in consequence of a little delay in early spring feeding I lost one of my young queens with her subjects, to the number of three thousand. Notwithstanding considerable care, a second hive was blown over during winter, and to prevent a chill I never ventured to lift off the top and inspect them until sunny weather came. On lifting the cover I found the combs and frames in a state of confusion, which I could not have believed possible from a tumble. However, thanks to the form of hive, I succeeded in putting in fresh comb and making matters more comfortable. The hive is now all right, only a little weak. Of my four queens then, I have three left. Of these three I am sorry to say that two, at any rate, are hybrids; but I am not sure about the third, as many of the bees are very yellow.

But now let me say a word about my pure Italian queen. For some time I watched the conduct of the bees in her hive, and was by no means pleased at their want of activity and the absence of bees carrying pollen. After two inspections my worst fears were realised. I found neither brood nor eggs.

Alas! she is dead, and with her my sanguine hopes of several pure Italian queens this season. Will Mr. Woodbury kindly tell me how to proceed, since I cannot feel myself a successful apiarian, if I find it needful to obtain a fresh stock of Italians each spring? I fear such a plan would add largely to the debit side of the bee account. I see no plan, however, but procuring another queen, and in this matter I should like advice. I may just add, that when I found the queen missing I added a brood comb, and have to-day had the pleasure of seeing a sealed queen cell.—E. B., CLERICUS, Cumberland.

[I much regret the misfortune of my clerical friend, for which, however, he has suggested the best remedy—viz., the obtaining another queen. I hope ere long to have the pleasure of forwarding to him a pure queen at the head of a small swarm, which he will introduce into the well-furnished hive of a stock of common bees (the rightful inhabitants having been previously expelled by driving), and thus form a good stock without the risk of uniting.—A DEVONSHIRE BEE-KEEPER.]

TOMTITS EATERS OF BEES.

NEGATIVE evidence must always give way to positive testimony, and I am glad to find from the reply of Mr. Goodsall, that he has been an eyewitness of the ravages committed by the tomtit. The species to which I alluded as innocuous corresponds to the description given by Maunder of the "Cole Titmouse" (*Parus ater*). If the same, it is very common in the south of Scotland, and the only species that frequents the district in which I reside. I paid particular attention to its habits in the apiary during last winter, and I am bound to say that it seldom visited my hives, except when snow was on the ground, or the day so chilly as to benumb such bees as lingered a short time while out of doors. When suffered to approach the hives and act as instinct dictated, I failed on every occasion to detect it seize either emerging or returning bees. The inactive alone fell a prey.

Being curious to know what the stomachs of tomtits contained, I had two of them shot and dissected. The contents showed a small portion of the bee mixed with a large amount of other insects. I will not affirm that this species to which I refer never destroys bees in an active state, but certainly it is a foe as little to be dreaded in the apiary as either the hedge sparrow or the chaffinch, and should create no uneasiness in the mind of a bee-master.—R. S.

EARLY LIGURIAN SWARM.—The first swarm that I have heard of in this county issued from a hive of Italians in my own immediate neighbourhood during the forenoon of Sunday last, the 13th inst. The parent stock left my apiary last year, and has thriven remarkably well in its present locality.—A DEVONSHIRE BEE-KEEPER.

OUR LETTER BOX.

DORRING CHICKENS DYING (J. G. C.).—Seven found dead one morning in the coop, together with one Sparrow; four more dying during the day and another Sparrow, are strong circumstantial evidence that poison was mixed with the food. This could not be determined without having it analysed, for there is no inflammation of the crops indicating acid poison, and the grains of wheat in the crops of all are undigested.

FOWLS LOSING THEIR FEATHERS (Mr. Brighton).—You do not mention the breed of your fowls, but from experience we believe they are Spanish. We had a yard of that breed last year, and many were almost naked, having little more than the tail and wing feathers. They began to lose their feathers at this time. They never suffered in health. The only treatment we adopted was to remove any of the hens that had an inclination for picking their companions' feathers, to avoid all stimulating food, and to give them a large grass run. We then tried a good supply of lettuce, which seemed very effectual in staying the plague. It did not restore the plumage, but it prevented further inroads on it.

SWOLLEN CROPS—BANTAMS FALLING BACKWARDS (Inquirer).—It is not wind in the Dorking hen's crop; it is water. You must take her by the legs, and hold her head downwards till the crop is empty; then confine her in some place where she can have only such food as is given to her. Let her have water four times a day, a small quantity each time, and let the water-vessel be taken from her as soon as she has drunk. By adopting this plan the crop will contract. Food should be given very sparingly. The Bantam hen has what old women call the "gids," and you may kill her. The place you mention is quite large enough for the hens to sit, but the space is not enough for them to come off. We should consider it detrimental to health, and it might cause the attack you mention.

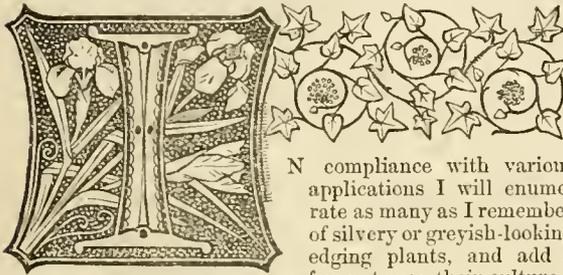
PIGEONS—CHICKENS (A New Subscriber).—If you send twenty postage stamps with your direction, and order "The Pigeon Book," you will have it sent from our office free by post. Let the coop be in the open air during fine days, and in the greenhouse at night and during wet weather. Let it stand on the gravel walk close to the grass.

WEEKLY CALENDAR.

Day of Month	Day of Week	MAY 29—JUNE 4, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
29	Tu	Jacksonia grandiflora.	66.9	44.3	55.6	13	53 af 3	1 af 8	49 af 7	11 af 4	O	m. s.	149
30	W	Kennedy prostrata.	67.9	44.8	56.3	16	52 8	2 8	43 8	50 4	16	2 48	150
31	Th	Abelia floribunda.	69.1	45.0	57.1	15	51 3	3 8	31 9	35 5	17	2 39	151
1	F	Acacia grandis.	67.9	49.9	55.9	13	50 3	4 8	12 10	27 6	18	2 31	152
2	S	Adenandra fragrans.	68.2	45.1	56.7	17	50 3	5 8	49 10	26 7	19	2 22	153
3	SUN	1 SUNDAY AFTER TRINITY.	68.9	44.2	56.6	18	49 3	6 8	23 11	29 8	20	2 12	154
4	M	Boronia serrulata.	69.2	44.6	56.9	14	48 3	7 8	52 11	35 9	21	2 2	155

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 63.3°; and its night temperature 44° 5. The greatest heat was 85°, on the 3rd, 1816; and the lowest cold 25°, on the 23th, 1831. The greatest fall of rain was 0.97 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

SILVERY EDGING PLANTS.



N compliance with various applications I will enumerate as many as I remember of silvery or greyish-looking edging plants, and add a few notes on their culture.

1. *ACHILLEA CLAVENNE*.—This is a neat finely-cut-leaved plant, growing to the height of 6 inches, yielding white flowers; but if these are pinched off the plants make a dense silvery edging. The plant is easily propagated by cuttings and divisions of the root, and is quite hardy, except in wet places and very stiff soil. It likes sandy loam best, and is there quite at home.

2. *ANTENNARIA MARGARITACEA*.—The flower-stems and flowers, which are white Everlastings, grow about 18 inches in height, but when these are nipped off a dense white greyish carpet is produced by the hoary shoots. The plant is quite hardy, and is easily propagated by cuttings and divisions. It does best in a dryish soil, and the finest edgings are made when the plant is fresh planted every year early in the spring.

3. *ANTENNARIA TOMENTOSA*.—A still lower-growing smaller-leaved plant, producing beautiful yellow everlasting flowers, which are sold dyed of many colours in Covent Garden. When the flowers are removed, or not allowed to grow, the plant makes a neat greyish edging. Propagated as above, but the plant delights in a dry sandy loam.

4. *ARCTOTIS REPTANS*, a creeping plant with whitish leaves, does better for carpeting than for edgings, and does also well for suspended baskets. Propagated by cuttings, and requires to be kept dryish and secure from frost in a cool greenhouse in winter. As it carpets the ground it grows about 6 inches in height.

5. *ARCTOTIS ARGENTEA*.—This also has silvery leaves, but it is stronger and more upright in growth.

6. *ARTEMISIA ARGENTEA*, an elegant plant with silvery grey tripinnate leaves that grows rather strong, but by cutting once or twice will form an elegant edging of from 7 to 12 inches in height. Propagated by cuttings and divisions. I believe it is pretty hardy in some places, but in general it requires protection in winter.

7. *CENTAUREA GYMNOCARPA*, *CANDIDISSIMA*, AND *RAGUSINA COMPACTA* are all very beautiful, and produce fine white foliage in dryish ground and when fully exposed to the sun. Last season I might say I had hundreds if not thousands of them, and this season I have not so many scores, and it is entirely my own fault in not liking to disturb the beds and lines to take cuttings in time. If plants are taken up, and divided in July and August, or even cuttings are taken off at that time, every bit will strike, if ordinary care be taken to prevent damping, and one of these little

bits struck will have a better chance to pass through the winter than old plants taken out of the ground, however carefully managed. Small bits will also strike freely in spring in a little dryish heat. It is a good plan where there are some old plants to top them in February, and then in March they will throw out a lot of shoots 2 or 3 inches long, which strike freely round the sides of a pot. My past success, however, leads me to place the most dependance on July and August cuttings, and to keep the plants in but little room as to pots and soil, and rather dryish all the winter, and so that the frost cannot reach them. I went on from day to day last autumn, something or other keeping me from putting the cuttings in, and then I thought I could not be much amiss with so many old plants in the ground; but I was so late in taking them up that I did little good with them. The great secret of success is to divide or strike early, so as to have the plants well rooted and established before winter. Young plants do best for edgings. If kept dryish they will stand plenty of air and cold in winter, if frost be excluded.

8. *CERASTIUM TOMENTOSUM*.—This is the best dwarf, grey, silvery-edging plant we have, and, except in damp places, is perfectly hardy. I have frequently cut-in and dressed for the present year the edging that was formed last year, and chiefly to save time; but in general, and in lightish soil in particular, the best effects are produced by planting the edgings afresh every year. This may be done by dibbling in thickly the little bits of uniform size without roots; better still by dividing the plant and planting with a bit of root; and, perhaps, best of all by selecting an out-of-the-way border in autumn or winter, forking it over, beating it level, and dibbling little bits in rather closely together. These by April and May will be nice compact-rooted plants, and if planted regularly, and once watered will require little more trouble during the season, except cutting off the beautiful white flowers, and trimming the plants to keep them in shape.

9. *CERASTIUM BIEBERSTEINI*.—This is a stronger-growing plant, and the little shoots are stronger, and not quite so upright and pearly as *tomentosum*, but it is a very desirable edging plant. In dull damp weather on strong land it is not quite so pearly as *Cerastium tomentosum*; it may be managed in the same way, but it is even less tolerant of damp in winter. In damp places I find it has gone during the last winter, whilst in drier places it shows how soon it would carpet the whole ground.

10. *CINERARIA MARITIMA*.—This, on account of its beautiful, cut, hoary, and, in fine seasons, frosted silver foliage, I like as well as the *Centaurea*, and it is much hardier, standing in dryish positions through our common winters. Such plants if let alone will grow from 2 to 3 feet in height, and produce their coarsish yellow composite flowers, and yield abundance of seeds; and from these, if sown in a hot-bed in March, seedlings in plenty may be obtained for planting-out in May. It is rare, however, that these seedlings give in the first year the bright silvery foliage of older plants, or those raised from cuttings taken from older plants. When old plants left in the ground are to be retained as edgings, they should be cut down almost close to

the ground in April, or the beginning of May. Cuttings may be taken off and struck at any time, but they strike the most readily when from such cut-down plants the young shoots or suckers are selected when firm at the base, and about 3 inches in length. These will strike quickly without any danger of damping if placed in a little hot water. If it is not desirable to wait for the cuttings from plants out of doors, some rather large established plants may be kept in pots, and cut down and placed in a mild heat in spring, when they will soon yield a lot of young shoots for cuttings. These spring-struck plants are the best of all for edgings, as they remain compact, and seldom throw up any flower-stalks during the first summer.

11. *DIOTIS MARITIMA*.—A stiff shrub with silvery leaves covered with greyish down, which when pegged down is said to make a fine edging; but I have not seen it so used. I presume that it is equally hardy with others of the family, and, with the exception of the cutting and the pegging, requires only the commonest treatment.

12. *GNAPHALIUM LANATUM*.—A very useful edging plant with hoary leaves, capable of being managed so as to be 6 or 18 inches in height, in the latter case producing its bunches of buffish sweet everlasting flowers. It should be propagated by cuttings in August, and kept rather dry in winter in any airy place, where frost will not reach it. The least frost destroys it when damp. We have sometimes allowed it to run wild round a bed, and to interlace itself among the plants behind, when it looked very graceful. By pegging and cutting it may be kept compact, and to any desirable height. The more sun it has the whiter it will be.

13. *SALVIA ARGENTEA*.—This, though hardy, does better for a bed or border than for edging, as it is generally from 2 to 3 feet in height, and looks best when growing upright instead of under edging treatment.

14. *STACHYS LANATA*.—A very hardy Siberian Hedge Nettle plant, with large, woolly, thick leaves, which in any case, and especially if the flower-stems are removed, makes a dense carpet on the ground. For this carpeting and for broad margins it is more suitable than the narrow edgings; but it is useful for many places, and has the recommendation of looking after itself pretty well wherever it has standing room. It makes roots so freely, that every little bit will grow. It looks whitest and most sparkling where it receives the most sun.

Of these plants specified, I prefer *Cerastium* for low edgings, and *Centaurea* and *Cineraria* when the edgings are to range from 6 to 12 or more inches in height.—R. FISHER.

THE INTERNATIONAL HORTICULTURAL EXHIBITION AND BOTANICAL CONGRESS.

"They manage these things better in France." How often that has been dinned into our ears by writers of all kinds in gardening papers. Ladies, who are supposed to be the best arbiters in taste; dilettanti horticulturists, who know nothing of the practical working out of this fascinating pursuit; learned doctors, who out of their own consciences in their study evolve what might, ought, should, or could be done; travelled gentlemen, who have escorted some fair dame through the beauties of a foreign show;—have all told us that we do not know anything about flower shows—that our stiff and formal training, our huge pyramids of bloom, our boxes of cut blooms, are abominations; and that we had better either abandon them altogether, or else take a leaf out of the books of our continental friends. It was vain to assure them that all this was a mistake, that the shows abroad were got up as special things, that they bore no analogy whatever to our six or eight exhibitions held every season, for that they only took place every three or four years; that if the occasion came we could far outstrip them; and that in point of cultivation there was no comparison between the productions of our English gardeners and those of the best continental ones. And yet all has been most fully confirmed by the marvellous success of the great International Exhibition which has just taken place; and, yet, must all bear in mind that this is exceptional—it is no more to be expected every year than the Great Exhibition, on this site of which it was erected, is to be annual. In the opinion of all who know anything of flower shows, and in the judgment of our foreign visitors, never before has such an exhibition been held; and we hope that it may inaugurate as great an improvement in all branches of horticulture as did the Exhibition of 1851 in our manufactures. There is this to cheer us, we think, in our horticultural shows—that whereas we, in 1851, had to learn

how far behind foreigners we were in our ideas of taste and elegance, we may perhaps reverse it now by saying that the foreigners will ascertain from us that in perfecting the productions of nature they have from us many lessons to learn.

And now what shall we say, or how attempt to describe, this marvellous display? There are thousands of the readers of *THE JOURNAL OF HORTICULTURE* who will not have been able to see it, and who would gladly know what it was like. One would want an essence made of all the Rose leaves in the Exhibition to dip one's pen in to give that roseate hue to one's description that it ought to have. Of what use is it to tell them that there were three acres and a half covered with canvas, making a tent 563 feet long by 293 broad—that the skill of one of the ablest landscape gardeners we have, Mr. Gibson, of Battersea Park, and his accomplished son, had been called into requisition to lay it out—that not only the most celebrated growers of our own land, both amateur and professional, had made the most wonderful efforts to outrival one another, but that the celebrated names of Linden, Verschaffelt, Thibaut and Keteleer, and other foreigners were to be found amongst the exhibitors—that Madame Legrelle d'Hanis sent some of her productions—that the Director of the Royal Gardens at Kew forwarded some magnificent specimens—and that the Crystal Palace Company were also competitors with some of their noble tree Ferns? All this to those who were there will afford some notion of what it was; but we fear that to make it at all intelligible to those who have not seen it is a difficult task indeed. If any of them have ever seen the Botanic Society's shows, then we may say, Multiply that twentyfold, and you may form some notion of what this great tent was. On entering you were at once met very wisely, not by a grand outburst of colour and beauty, but by a screen of Pines, Yews, pyramidal Box, &c.; and on going round this, on either side, itself being a good deal raised, you then obtained a view of the magnificent display. Everything had been done to give effect to the *tout ensemble*. Rockwork had been raised, over which water trickled, and ought to have had an outlet to keep it clear, while on the rockwork were placed some of those fine specimens of British Ferns which Mr. Ivory knows so well how to produce; then there were little valleys of Rhododendrons, which were planted in the soil; while all around, on grass mounds and terraces, were placed such gorgeous masses of bloom in Azaleas, Geraniums, and Roses; such wonderful variety of form and colour in the different classes; that it was impossible to take in all at once, or indeed at all. You were continually stumbling upon something you had overlooked, or been drawn off from by some "mania" to admire a special hobby of his own. And then when one passed from this great central tent into the Orchid tent, where were placed not only these valued and valuable flowers, but all the new introductions of Linden and Verschaffelt, of Veitch, and Bull, and Williams, how difficult not to feel that satiety which comes after such a visual feast as this, as does the same sense to the aldermen of St. Thomas Backchurch after my Lord Mayor's feast, when eel-pie and callipee, and salmon, and venison, fat capons, &c., have been laid under contribution! And then what a delightful *réunion* it was to meet men from all parts; some who had known a smooth-faced boy, and could hardly believe he was "grandpapa;" others whose hospitality he had shared abroad, and with whom he had had many a pleasant chat in their homes—Linden, and Verdier, and Verschaffelt, &c.; to be seized by one friend, who would say, "I must let you and—know one another;" to be accosted by lovers of flowers that he had never seen, but who knew us; to meet those with whom one had fired a long-range shot, and to find that a hearty shake of the hand dispelled all the fogs and mists that too often arise about one's writing, because we will attach meanings to one another's words they were never intended to bear. There are some days which we mark as "special," for one reason or another. We think few lovers of flowers but will say that the 22nd of May, 1866, is one to be marked with the very whitest of white chalk.

And we hope no general plant-lover, who wonders at the benighted ignorance of our florists, will say, "It's like their impudence," when we assert that to them the main beauty of the Exhibition was to be attributed. We do not by this mean for a moment to detract from the merits, the great merits of Mr. Gibson, to whom, above all others, we believe the main success of the Exhibition, as such, is due; but what would Mr. Gibson have done without the "Florists?" Would he not in despair have looked on the task before him, if he were told no Azaleas, Geraniums, or pot-Roses were to be

admitted? Not all the curious forms and fantastic leaf-colouring, not all the beautiful greenhouse plants, or waving Ferns, would have redeemed the Exhibition from the lack of colour, which even with them some maintained to exist. And let us add, that these three classes were those which most especially struck our foreign friends. We asked several of the most distinguished amongst them what was the feature in the Exhibition that most struck them, and the general reply was the Roses, Pelargoniums, and Azaleas. We expected that the formal training of the latter would have been offensive to their ideas and taste; but they said, No; the style was different, it was true, to theirs, but it was much more difficult. We may demur to this, for, we confess, a less formal style, as we have often said, would please us better; but it is hopeless to do this until some exhibitor has the "pluck" to do what was once done in Fuchsias—go out of the beaten track and exhibit a set naturally grown; and if the Judges would then award it, if *cateris paribus* it were worthy of it—the first prize, harlequin's wand would not more quickly effect a transformation than it would, and we believe all persons of taste would hail the change with pleasure.

Now as to Roses. The class for ten Roses in pots, not more than 13 inches across, was most warmly contested. We candidly say we did not envy the Judges their task here, so evenly balanced were the two collections of Mr. Turner and Mr. W. Paul; but we believe the greater evenness and freshness of those of the former group carried the day. They consisted of Victor Verdier (H.P.), Souvenir d'un Ami (Tea), Vicomte Vigier (H.P.), Général Jacqueminot (H.P.), Madame Damaizin (Tea), Souvenir de la Malmaison (B), Baronne Prevost (H.P.), Charles Lawson (H.C.), a magnificent plant, and Madame Boll (H.P.). Mr. Wm. Paul's collection contained Madame de St. Joseph (Tea), Général Jacqueminot (H.P.), Souvenir d'un Ami (Tea), Caroline de Sansal (H.P.), Paul Perras (H.C.), Juno (H.C.), Louise Odier, Madame Villermoz (Tea), Comtesse de Chabillant (H.P.), and Baronne Prevost. The third prize was gained by Messrs. Paul & Son with good plants of Madame de St. Joseph, Céline Forestier, John Hopper, Souvenir d'un Ami, Niphotos, Paul Ricaut, Madame Julie Darau, and Charles Lawson. These last three were beautiful plants. One wondered why Messrs. Lane's collection was not *decoré*, for it contained some beautiful plants, his Charles Lefebvre was a picture. Was it that he had but one Tea Rose? if so, we think this would be a point in his favour. They are the most easy to grow as pot plants, and, with rare exceptions, so hang down their heads as to require twice the number of props that those in the other classes take. Mr. Francis had also some nice plants, of which his Chénédolé and Paul Perras were the best.

In the Class for Six New Roses (Class 112), not sent out previous to 1863-64, Mr. Wm. Paul was first with nice plants of Madame Victor Verdier, Alpaide de Rotalier, Elizabeth Vigneron, Pierre Notting (very fine), Madame de Stella, and Kate Hausburg. Messrs. Paul & Son were second with Paul de la Meilleray, Lord Clyde, Princess Mary of Cambridge (in spite of some adverse criticism, this is a fine Rose), Achille Gonod, Madame de Stella, and Alpaide de Rotalier.

For a single Rose in flower (Class 113), Mr. Charles Turner was first with a beautiful plant of Comtesse Cecile de Chabillant, and Mr. Wm. Paul second with President (Tea).

Perhaps, however, the most interesting class in Roses was that for twenty in pots not more than 8 inches across (Class 114); for, after all, we believe this is the most attractive size, and is a class that ought to be much more encouraged than it is; they are so much more natural, and the larger number gives greater variety. Mr. Charles Turner was again first here with Souvenir d'un Ami, John Hopper, Charles Lefebvre, Vicomte Vigier, Alba Rosea, Charles Lawson, Prince Camille de Rohan, Vicomtesse de Cazes, Victor Verdier, Céline Forestier, Professor Koch, President, Auguste Mié, Général Jacqueminot, Madame Caillat, Madame Falcot, Alphonse Belin, Paul de la Meilleray, and Madame Damaizin. Mr. Wm. Paul was second with a nearly equal collection, comprising Bernard Palissy, Caroline de Sansal, Pierre Notting, Madame Alfred de Rougemont, Elizabeth Vigneron, Beauty of Waltham, Alba Rosea, President, Madame Clemence Joigneaux, John Hopper, Madame C. Wood, Comtesse de Brossard (Tea), Le Rhono, Victor Verdier, Madame Victor Verdier, Souvenir d'un Ami, and Rev. H. Dombrain. Messrs. Paul & Son were third with good plants of Charles Lawson, Catherine Guillot, Princess Mary of Cambridge, Alfred de Rougemont, Olivier Delhomme, Lælia, Madame Villermoz, Beauty of Waltham, Victor Verdier, Xavier Olibo (fine dark flower), Amiral Gravina, Alba Rosea, Belle Normande (pretty),

Adolphe de Rothschild, John Hopper, Madame Bonnet, Lord Clyde, Duchesse de Caylus, President, and Anna Alexief.

In the class of six standard Roses in pots (Class 115), Mr. W. Paul carried off the first prize with excellent examples of Vicomte Vigier, Paul Perras, Charles Lawson, Juno, Narcisse, and Elizabeth Vigneron. Mr. Charles Turner was second with François Lacharme, Vicomtesse de Cazes, Olivier Delhomme, Madame Bravy, Sénateur Vaisse, and Victor Verdier. Messrs. Paul & Son were third with Devoniensis, Madame Derreux Douvillé, Souvenir d'Elise Vardon, Alba Rosea, Adolphe de Rothschild, and King's Acre.

In boxes of cut blooms, twenty-five in three trusses of each, Mr. Mitchell, of Pittdown Nurseries, Mr. Wm. Paul, of Waltham Cross, and Messrs. Paul & Son, of Cheshunt, were exhibitors. Most notable amongst Mr. Mitchell's were some glorious blooms of Maréchal Niel, quite enough to bear out its character as the very finest yellow Rose in growth, not even excepting that coy maiden Chromatella (or Cloth of Gold); it did not, however, carry sufficient weight to bring its exhibitor the first prize, which was rightly given to Messrs. Paul and Son, the second to Mr. Wm. Paul, and the third to Mr. Mitchell.

The amateurs made a very creditable display, and showed that they have largely profited by the fine examples of *it*so culture that the growers for sale have submitted to them of late years. Mr. Terry, Youngsbury House, Ware, took first prize in Class 111 with Madame Villermoz, Vicomtesse de Cazes (very fine plant), Paul Perras, Chénédolé, Charles Lawson, and Comte de Paris, but it will be seen not one Hybrid Perpetual is shown here. Mr. Coleman, of Stoke Park, Slough, was second with Gloire de Santenay, Charles Lawson, La Reine, Paul Perras, François Lacharme, Madame de Cambacères; while in cut blooms Mr. Coleman was first, and Mr. Hollingworth, of Maidstone, second.

The show of Pelargoniums was indeed magnificent, the most celebrated amateurs and professional growers having evidently done their very best, and sent in plants which were the astonishment of the foreign visitors especially. They were beautifully arranged in the centre circle, placed on the green bank, which threw up their flowers to the best advantage.

In Class 131, twelve show Pelargoniums in pots, not larger than 8 inches across, Mr. Charles Turner was first with Royal Albert, Lilacium, Fairest of the Fair, Beacon, very bright; Celeste, Lady Canning, a splendid plant; Pericles; Rosa Bonheur, a lovely bright flower with white throat; Desdemona, Puck, Mademoiselle Patti (beautiful), and Fair Rosamond. Mr. Fraser was second with Rose Celestial, Sir Colin Campbell, Empress Eugénie, Desdemona, Leander, Lilacium, Candidata, Peacock, Pericles, Norma (very fine), Ariel, and Pizarro.

In the Class for Fancies the order was reversed, Mr. Fraser being first and Mr. Turner second. Mr. Fraser's flowers were Lady Craven, Delicatum, Celestial, Cloth of Silver, Roi des Fantaisies, and Clara Novello. Mr. Turner's were Evening Star, Ellen Beck, Clemanthe, Lady Craven, Delicatum, and Roi des Fantaisies. Mr. Turner also exhibited some plants of new varieties, among which were Mrs. Workman, Mary Hoyle (lovely), John Hoyle, Sunny Memories, Nabob, Exhibitor, Conqueror, British Sailor, and Charles Turner, a splendid scarlet flower; but perhaps the finest plants were those of Mr. Bailey's in Class 133, six plants, for amateurs. They were—The Belle, Mulberry, Ariel, Spotted Gem, Desdemona, Lady Canning, Etna, Sanspareil, Sir Colin Campbell, and Pericles. For six plants of show Pelargoniums (Class 133), the first prize was awarded to Mr. Donald, gardener to F. G. Wilkins, Esq., Leyton, for Osiris, Viola, Fairest of the Fair, Etna, Fair Rosamond, and Peacock; and the second to Mr. James Weir, gardener to Mrs. Hodgson, The Elms, Hampstead.

In Class 135, for six Fancies, the first prize was awarded to Mr. Bailey for magnificent plants of Godfrey Turner, Evening Star, Ellen Beck, Delicatum, Lady Craven, and Lucy; the second to Mrs. Hodgson. For one Pelargonium the first prize was awarded to Mr. Bailey for a magnificent plant of Rose Celestial; the second to Mr. Turner for Desdemona; and the third to Mr. Fraser for Sylph. Mr. Turner exhibited, as usual, some fine seedlings of Mr. Hoyle's, amongst which were Alfred, a beautiful dark flower; Lord Lyon, a splendid rich rose-coloured flower with white throat; and Favourite, dark. Alfred and Favourite received first-class certificates, why Lord Lyon did not we do not know. Mr. Hoyle exhibited a box of blooms of some of his best seedlings, and also some dried petals of Pelargoniums of sixty years ago, showing what progress had been made. This was very interesting.

STOVE AND GREENHOUSE PLANTS constituted a very important part of the display, and, from being in most cases placed in juxtaposition with masses of foliage, the effect was greatly enhanced. A collection of sixteen shown by Mr. T. Baines, gardener to H. Micholls, Esq., Bowden, was a remarkably fine example of successful cultivation. It consisted of two *Ixoras*—viz., *coccinea* and *aurantiaca*, the former with unusually large heads of bloom; *Boronia pinnata*, flowering profusely; *Acrophyllum venosum*, very fine; *Dipladenia crassifolia*, *Genethyllis talipifera*, the flowers very large, as well as numerous; *Erica ventricosa coccinea* minor, fine; *E. Cavendishii*, a good specimen, but the flowers rather small; *E. tricolor* *Eppsi*; *Azaleas Criterion*, *Extranei*, and *Ivryana*; *Franciscea confertifolia*, *Aphelexis macrantha purpurea*, *Eparis Eclipse*, and *Eriostemon baxifolium*. In the same class Mr. Peed also contributed a fine collection, consisting of *Allamanda grandiflora*, the large yellow flowers of which were very effective; *Ixora alba*, fine; *Pimelea Hendersoni*, *Eriostemon*, a fine specimen of *Erica Cavendishii*, a large *Eparis*, *Azaleas*, the pretty *Tetratea ericaefolia*, good specimens of *Dracophyllum gracile*, and *Acrophyllum venosum*, the latter, however, not so large as Mr. Baines's; *Genethyllis hookeriana*, *Chorozeema cordatum splendens*, *Aphelexis*, &c.

In other collections in the same class, besides plants already named, we noticed good examples of *Rhynchospermum jasminoides*, the showy scarlet *Erica westphalanga*, *Boronia tetrandra*, *Pimelea spectabilis*, the deep blue *Leschenaultia biloba major*, *Clerodendron Thomsonae*, and *Coleonema rubra*.

Awards—First, Mr. Baines, gardener to H. Micholls, Esq., Summerfield, Bowden; second, Mr. B. Peed, gardener to Mrs. Tredwell, Lower Norwood; third, Mr. J. Wheeler, gardener to J. Philpott, Esq., Stamford Hill; fourth, Mr. Kemp, gardener to Earl Percy, Albury Park.

In the class for twelve plants, admirable collections were furnished by Messrs. Lee, of Hammersmith; E. Cole & Sons, of Withington, near Manchester; and Mr. Rhodes, Sydenham. Among Messrs. Lee's plants were excellent examples of *Erica ventricosa coccinea* minor, *Azaleas*, *Eriostemon*, *Medinilla magnifica*, and *Acrophyllum venosum*, *Aphelexis macrantha superba*, splendid in colour; *Adenandra fragrans*, well studded with bloom. Mrs. Cole & Sons contributed excellent specimens of *Heaths*, *Azaleas*, *Aphelexis*, *Pimelea Hendersoni*, and *Ixora coccinea*. There was also a large plant of *Phenocoma prolifera* *Barnesii*, but far from equal in point of bloom to a similar plant exhibited a year or two ago by Mr. Fraser, of Lea Bridge. Mr. Rhodes had the finest plant of *Dracophyllum gracile* in the Show, although by an accident it had lost half a dozen of its white heads of bloom. excellent *Azaleas*, *Eriostemon*, a *Chorozeema*, *Aphelexis*, *Cavendish Heath*, &c.

Awards—First, Messrs. Lee; second, Mrs. E. Cole & Sons; third, Mr. Rhodes.

Collections of ten were exhibited by Mr. Donald, gardener to J. G. Barelay, Esq., Leyton; Mr. Morse, gardener to T. Cauning, Esq., Westbury-on-Trym, Bristol; Mr. A. Ingram, gardener to J. J. Blandy, Esq., Highgrove, Reading; and Mr. Kaile, gardener to Earl Lovelace, East Horsley Tower. Noticeable among the plants from these exhibitors were the lovely *Clerodendron Thomsonae*, *Allamanda cathartica*, *Rhynchospermum jasminoides*, *Aotus gracillimus*, with gay yellow and dark crimson flowers, and not often seen at exhibitions; *Staticas*, *Adenandra fragrans*, in fine bloom; *Leschenaultia intermedia*, with showy scarlet flowers; *Pteroma elegans*, but not in full bloom; *Polygala*, *Heaths*, *Azaleas*, and other plants already named.

Awards—First, Mr. Donald; second, Mr. Morse; third, Mr. A. Ingram; fourth, Mr. Kaile.

Collections of six were shown in separate classes, both by amateurs and nurserymen, and comprised among other plants a very fine *Azalea Apollo*, from Mr. Carson; an excellent example of *Pimelea Hendersoni*, from the same; the white and crimson-eyed *Vinea oculata*, from Mrs. Glendinning & Sons; a well-rown plant of *Erica Victoria*, from Mr. Tanton, the successor to Mr. Dods, of the Epsom Nursery; *Clerodendron Kampferi*, *Imantophyllum miniatum*, *Oxylobium arborescens*, with spikes of yellow pea-like flowers, besides several very good examples of *Pimeleas*, *Rhynchospermum*, *Azaleas*, *Heaths*, *Chorozeemas*, *Genethyllis*, *Eriostemon*, &c.

Awards—For six (Amateurs): first, Mr. Carson, gardener to W. R. G. Farmer, Esq., Nonsuch Park, Chesham; second, Mr. Page, gardener to W. Leaf, Esq., Streatham; third, Mr. A. Wilkie, gardener to — McHenry, Esq., Addison Road, Kensington. (Nurserymen): first, Mr. J. Stevenson, Timperley; second, Mr. Williams, Holloway; third, Mrs. Glendinning & Sons, Tarnham Green; fourth, Messrs. Jackson & Sons.

For the finest stove or greenhouse plant, in or out of flower, and not less than 12 feet in height, the first prize was awarded to Messrs. Veitch & Sons, for *Brownea erecta* (?); the second to Mr. Williams, for a remarkably fine plant of *Rhopala De Jonghii*, probably not less than 20 feet high; and the third to Mr. Boll, who contributed an *Arancarium exelsa*, 20 feet high; *Aralia quinquefolia*, forming a standard 18 feet high; and *Dracana australis*, 15 feet high. From Mr. Williams came *Draecana draco* *Berhavi*, about the same height.

Fine-foliaged stove and greenhouse plants were shown in great number, and in point of cultivation they left little to be desired. Mr. Baines had fine examples of *Alocasia metallica*, *Theophrasta imperialis*, with ample deep green foliage; *Anthurium grande*, another handsome large-leaved plant; *Rhopala corcoradense*, *Dasy-lirion acrotrichum*, *Gleichenia splunca*, *Croton variegatum*, *C. longi-*

folium, *Dicksania antarctica*, with the fronds assuming a somewhat drooping character; *Cordyline indivisa*, and *Aralia leptophylla*. From Mr. Taylor, gardener to J. Yates, Esq., Highgate, came a noble plant of *Sabal Blackburnianum*, Variegated Aloe-leaved *Yucca*, *Dion edule*, two species of *Eucephalartos*, and *Cycas revoluta*. Mr. Fairbairn, Lion House, furnished the Bird's-nest Fern, *Anthurium acule*, with leaves a yard in length, *Alocasia Lowii*, and others of the same genus, and a large *Draecana*; and Mr. Cross, gardener to Lady Ashburton, Romsey, the pretty *Marrubium fasciata*, which has the leaves variegated with pale green; *Spharogyne latifolia*, *Cyperus alternifolius* variegatus, with its white variegation well developed, an *Alocasia*, and other effective plants. Several fine Palms, including *Areca Verschaffeltii*, *Latania borbonica*, *Astrocaryum rostratum*, the last very graceful, came from Madame Legrelle d'Hanis, of Antwerp. Several magnificent groups were exhibited in the nurserymen's class for twelve. That from Messrs. Leo was particularly good, and comprised a very fine variegated *Croton*, *Theophrasta imperialis*, *Alocasia metallica*, and *Lowii*, both with fine large leaves; *Rhopala*, *Pandanus elegantissimus*, *Latania rubra*, *Oreopanax dactylifolium*, remarkable for its deeply-divided foliage, a handsome plant of *Cibotium princeps*, and a *Cyathea*. Messrs. Veitch also exhibited a fine collection, in which were *Pandanus Veitchii*, resembling an immense fan; *P. reflexus*, *Cycas revoluta*, *Rhopala corcoradense*, *Senforthis elegans*, a fine plant of *Dracana indivisa lineata*, a large *Croton pictum*, *Senforthis elegans*, and other Palms. From Mr. Williams came *Alocasia metallica*, *Aloe-leaved Yucca*, a spreading plant of *Cycas circinalis*, *Croton*, *Alocasia metallica*, *Dion edule*, *Cibotium princeps*, and *Pandanus javanicus* variegatus, all of which were very good. The graceful Fern-like-leaved *Jacaranda filicifolia*, a Maple with bronzy foliage, *Rhopala*, and other plants already named, came from Messrs. A. Henderson and Co.

In other classes for subjects of the same character, good exhibitions came from Mr. John Stevenson, Lark Hill, Timperley; Mr. Hatt, gardener to Miss Burdett Coutts; Mr. Young, gardener to W. H. Stone, Esq., M.P.; Messrs. Veitch, and Mr. Williams. Among the plants exhibited were *Alophia australis*, *Cibotium princeps* and *Schiede*; *Cyathea dealbata*, and other Ferns; *Alocasia alio-violacea* with violet-tinged leafstalks edged with white, *A. metallica* with very large leaves, *A. Lowii*, *Draecana*, *Croton*, *angustifolium* being particularly fine; *Pandanus*, *Latania*, *Cyanophyllum*, *Musa vittata*.

Awards—For twelve (Amateurs): first, Mr. Baines; second, Mr. Taylor, gardener to J. Yates, Esq.; third, Mr. Fairbairn, gardener to the Duke of Northumberland, Lion; fourth, Mr. Cross, gardener to Lady Ashburton. For twelve (Nurserymen): first, Messrs. Lee; second, Messrs. Veitch; third, Mr. Williams. For six: first, Mr. Stevenson; second, Mr. Hatt; third, Mr. Young, gardener to W. H. Stone, Esq.; fourth, Mr. A. Ingram, gardener to J. J. Blandy, Esq. For twelve tender variegated plants: first, Messrs. Veitch; second, Mr. Williams; fourth, Madame Legrelle d'Hanis.

ECONOMICAL AND MEDICINAL PLANTS.—Collections of these came from M. Linden, of Brussels, Mr. Bull, and Messrs. Osborn, who received prizes in the order in which they are named.

HARDY DECIDUOUS SHRUBS IN FLOWER.—From Mr. Turner, Slough, came charming *Weigelas*, both rose and white, *Galearia* *Roses*, variegated *Hydrangea*, the sweet-scented *Philadelphus mexicanus*, *Tree Paeonies* in fine bloom, *Persian Lilac*, &c., and from Mr. William Paul, *Weigela rosea*, *Brooms*, the pink-flowered *Robinia hispida*, *Lilacs*, the common *Berberis*, *Coronilla emera*, *Gumper's Thorn*, a new German variety; *Spiraea*, *Viburnum plicatum* and *opulus*, and *Deutzia gracilis*. These two collections were placed near the entrance from the Royal Horticultural Society's garden, and attracted much attention.

Awards—First, Mr. Turner; second, Mr. W. Paul.

FINE-FOLIAGED HARDY DECIDUOUS SHRUBS.—Of these there was only one exhibitor, Mr. W. Paul, to whom a third prize was awarded. Noticeable in his collection were a *Horse Chestnut* with the leaves cut into small segments, a *Chestnut* with well-marked golden variegation, the white variegated *Acer negundo*, and another *Maple* in which the leaves were distinctly variegated with pale yellow, a golden-leaved *Elder*, *Purple Beech*, *Quercus cerris* variegata with creamy variegation, *Paulownia imperialis*, *Silver Poplar*, *Ancuba-leaved Ash*, *Magnolia tripetala* and *acuminata*, *Hippophae rhamnoides*, and *Symphoricarpos variegatus*.

HARDY CLIMBERS were shown by Mr. W. Paul, Mr. Turner, and Messrs. Ivery and Son, who were respectively first, second, and third, and consisted of *Clematises*, *Ivies*, plain-leaved and variegated, *Honeysuckles*, *Aristolochias*, *Bigonia grandiflora*, *Climbing Rosea*, and *Passiflora corula*.

HARDY EVERGREENS.—In the special classes for these were very good examples of new *Anacanas*, *Hollies* in great variety, several kinds of *Box*, *Laurus nobilis*, *Laurustinus*, *Berberis Darwinii*, *Phillyreas*, *Portugal Laurel*, *Arbutus unedo*, and *Rolissinus*, and *Evergreen Oaks*.

Of new evergreen trees and shrubs Messrs. Veitch contributed *Ancuba*; the leathery-leaved *Raphiolepis ovata*, a great acquisition both as regards flowers and foliage; *Skimmia oblata*; a golden variegated *Euonymus japonicus*, one of the many pretty Japanese introductions; *Euonymus radicans* variegatus; *Hex Fortum*; the Holly-leaved *Osmanthus*, and a dwarf variegated form of it; *Ternstroemia* species, and a variegated *Ligustrum glabrum*. Mr. Standish had, in addition to several of the above, *Skimmia fragrans*, the tall

and dwarf forms of the variegated *Osmanthus ilicifolius*, and *Ligustrum coriaceum*. Mr. Bull's collection consisted wholly of new Aucubas, male and female.

Awards—For twenty: first, Messrs. Jackman & Son; second, Mr. Standish; third, Messrs. Lee. For twelve (New): first, Messrs. Veitch; second, Mr. Standish; third, withheld; fourth, Mr. Bull.

ALPINE AND HEIBRAGEOUS PLANTS.—Messrs. Backhouse, of York, exhibited a charming collection of Alpines, many of them very interesting, and Mr. Salter one of variegated plants, consisting of *Funkias*, *Sedums*, *Celtisfoot*, *Arabis*, *Aubrietia*, &c., to the number of fifty. Both of these collections excited much interest, especially that of Messrs. Backhouse, which seemed to be a particular favorite with the ladies. First prizes were awarded to both exhibitors.

ORCHIDS.—The tent in which these were exhibited was continually crowded—so much so, that it was not without difficulty and by the exercise of considerable patience, that they could be approached. This fact is sufficient to prove that they excited no small amount of interest, and they were well worthy of it, for nearly all the most ornamental genera were well represented; and though the number of collections fell rather short of what might have been expected in a country like this, where there are so many cultivators of this beautiful tribe of plants, still they were sufficient to fill an extent of 400 feet in length. The only exhibitor in the class for fifty was Robert Warner, Esq., of Broomfield, Chelmsford, who sent numerous varieties of the beautiful *Cattleya Mossie*, several of them remarkable for the size of the blooms and their richness of colour; also *Vanda tricolor* with three fine spikes; its variety *sperba* deeper and richer in colour, and with a bright purplish crimson lip; and *V. suavis*, remarkably fine. Of *Trichopilia crispata* there was one of the finest examples we remember to have seen, bearing at least a score of finely coloured flowers. *Phalaenopsis* were well represented by *P. amabilis*, *grandiflora*, *Schilleriana*; and *Portei*, white, with a rosy purple lip, was very full of bloom. Of *Chysis Limminghii*, *Cypripedium barbatum superbum*, C. Hoehere, C. villosum, and C. hirsutissimum, there were good examples, as well as of *Laelia cinabarina*, *purpurata*, and *Schilleriana*, the Fox-brush *Aerides*, and *Dendrobium nobile*.

In a collection of twenty from Mr. Bullen, gardener to A. Turner, Esq., Leicester, were a fine set of *Cypripedium barbatum superbum*, with fifty blooms, *Odontoglossum Pescatorei*, *Cattleya Aeklandia*, and *Skinneri*, the latter very fine; *Dendrobium Parishii*, *Brassia verrucosa* 2 yard across; *Laelia purpurata*, and a remarkably fine specimen of *Oncidium ampliatum majas*. From Mr. Page, gardener to W. Leaf, Esq., came *Vanda teres* with five good blooms, *Phalaenopsis amabilis*, *Oncidium flexuosum*, and *ampliatum majas*, with three long spikes, *Saccolabium Blamei*, with a spike about 15 inches in length, and *Dendrobium anosmum*, with six good spikes; and Mr. Peed, gardener to Mrs. Tredwell, sent good *Aerides*, *Cypripedium*, *Oncidium sessile*, with clear yellow flowers, *Vandas*, *Dendrobiums*, and a highly coloured variety of *Laelia purpurata*. Mr. Callen, gardener to W. Wentworth Buller, Esq., Strete Raleigh, exhibited *Cypripedium*, or as it is called by some botanists *Selenipedium*, caudatum with two large blooms, having "tails" nearly 2½ feet long; *Uropedium Lindenii*, another Orchid having similar though shorter appendages; the beautiful new *Phalaenopsis Luddemanniana* with three blooms, a branching specimen plant of *Oncidium bifolium*, with large blooms; the white-flowered *Burlingtonia fragrans*, *Cypripedium Lowii* and *barbatum*, and *Cattleya Aeklandia*, none of them large, but all well grown. Mr. Robson, gardener to G. Cooper, Esq., Old Kent Road, also furnished a collection, in which we noticed *Aerides crispum*, with a good spike upwards of a foot in length, and several *Oncidiums*.

In the Nurserymen's Class for twelve, Messrs. Veitch had a superb example of *Cypripedium barbatum majas* with about fifty blooms; C. villosum with about thirty flowers; *Saccolabium guttatum* with remarkably fine long spikes; a splendid *Laelia purpurata*, *Odontoglossum Pescatorei*, one of the most beautiful of the family, and *O. navium*, each with about a score of flowers; *Cattleya Mossie* elegant, and *Vanda tricolor superba*. In the collection from Mr. Williams were *Phalaenopsis Luddemanniana* with six blooms; and *P. grandiflora*; *Vanda teres*, richly coloured; a noble plant of *V. insignis*; *Cypripedium Stonei* with four fine blooms; *C. barbatum superbum*, very fine; splendid *Cattleyas*; and a very good *Saccolabium retusum*. Among Mr. Bull's twelve were *Cypripedium caudatum*, and the yellow Tulip-like *Angelen Clowesii*.

In the Amateurs' classes excellent exhibitions came from Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park; Mr. Wilson, gardener to W. Marshall, Esq., Enfield; Mr. Howard, gardener to J. Brand, Esq., Ballham; and Mr. Fairbairn, Sion House. Among the plants exhibited were remarkably fine examples of *Trichopilia crispata*, *Phalaenopsis grandiflora*, *Dendrobium anosmum*, *D. Dalhousianum*, *D. densiflorum album*, and *D. nobile*; *Saccolabiums*, *Cattleyas*, *Laelias*, *Oncidium sarceodes*, *Cattleya Aeklandia* with eight richly coloured flowers; and, lastly, *Cypripediums*, particularly *caudatum*, one of which from Mr. Wilson, had nine flowers with petals 28½ inches long, by far the finest specimen shown of that handsome species.

Awards—For fifty: first, R. Warner, Esq. For twenty: first, Mr. Bullen; second, Mr. Page; third, Mr. Peed; fourth, Mr. Callen. For twelve (Nurserymen): first, Messrs. Veitch; second, Mr. Williams; third, withheld; fourth, Mr. Bull. For ten: first, Mr. Penny; second, Mr. Wilson; third, J. Stevenson, Esq.; fourth, Mr. Wheeler, gardener to J. Philpott, Esq., Stamford Hill. For six: first, Mr. Howard;

second, Mr. Fairbairn; third, Mr. Young, gardener to W. H. Stone, Esq., Havant; fourth, Mr. A. Ingram, gardener to J. J. Blandy, Esq. For six (Nurserymen): first, Messrs. Lee; second, Mr. Rhodes; third, withheld; fourth, Messrs. Jackson & Sons.

In new Orchids, the first prize was awarded to M. Linden, of Brussels, for *Aerides japonicum* with greenish white sepals and petals barred with rose, and having rose markings in the lip; the second, to Messrs. Veitch, for *Angreacum citratum* with small white flowers having a slight lemon tinge, closely set on what, for a new Orchid, was a long spike. Messrs. Backhouse sent *Oncidium concolor* with large yellow flowers; Messrs. Veitch, *Cypripedium lavigatum*, a very ornamental species; Mr. Williams, *Vanda cristata superba*; Mr. Warner, *Cattleya Mossie Marina*, a very beautiful variety; also, *Trichopilia crispata marginata*, in which the flowers are bordered with white. A fine variety of *Miltonia spectabilis*, and *Dendrobium taerinum*, were shown by J. Bateman, Esq., of Biddulph Grange.

For the best specimen Orchid, the first prize was awarded to Mr. J. Charles, gardener to R. Barnett, Esq., Blackheath Park, for *Phalaenopsis Luddemanniana* with nine blooms, some of which were exceedingly fine. The second prize went to Mr. Callen, for a good *Phalaenopsis amabilis*; the third, to Mr. Bullen, for an immense plant of *Dendrobium nobile*, measuring some 4 feet across and in fine bloom; and the fourth, to Mr. Webb, gardener to J. W. Miles, Esq., Kingsweston, for *Ansellia africana* with three fine spikes.

Miscellaneous Orchids comprised *Phalaenopsis Luddemanniana* with four fine blooms; *Trichopilia tortile*; *Aspasia lanata* with a white lip, and the sepals and petals green, marked with brown; a very handsome and compact specimen of *Dendrobium densiflorum*, *Saccolabium guttatum splendens*, and some others, from Mr. Wilson, gardener to W. Marshall, Esq.; and *Aerides virens* and a few others were shown by Mr. Parker, of Teotting.

Of variegated Orchids, Mr. Williams contributed a fine collection, in which *Phalaenopsis Schilleriana* was conspicuous, besides which *Goodyera discolor*, *Anaetochilus petala*, *Lowii*, *setaceus*, *xanthophyllus*, and others of the same beautiful genus were in great perfection. A first prize was awarded to Mr. Williams, and a third one to Mrs. Glendinning and Sons.

Before concluding our remarks on the Orchids it is but an act of simple justice to Mr. Ormson to state that the whole of the immense tent in which these are exhibited is heated by him, free of charge, by one of his new wrought-iron multitubular boilers; and to give an idea of the magnitude of this undertaking, we will mention that 3200 feet of pipe and 1760 gallons of water are employed to heat 400,000 cubic feet of air, and this, be it remembered, not in a glass structure, but in a tent, through the walling of which the keen east winds which we have lately experienced have been continually finding their way.

PALMS.—In the classes specially devoted to these there were fine examples of *Phoenix dactylifera*, *Lantana borbonica*, *Verschaffeltii*, and *Jenkinsii*, *Thrinax elegans*, *Corypha australis*, *Chamærope hamilis*, and *excelsa*, *Seaforthia elegans*, the Oil Palm, the noble *Stevensonia grandifolia*, or *Phenacophorum sebellarum* as it is also called, the *Coccolat*, *Arecas*, and *Astrocaryum mexicanum*; and many others were scattered through various classes.

Awards—For six: first, Mr. Fairbairn, gardener to the Duke of Northumberland, Sion; second, Messrs. Veitch; third, M. A. Verschaffelt, Ghent. For three: first, Mr. Williams; second, Messrs. Jackson & Son; third, Mr. Bull. For the largest and finest: first, Mr. Young, gardener to R. Barclay, Esq., Highgate; second, Mr. Bull; third, Mr. Williams.

CYCAS.—M. A. Verschaffelt received the first prize for *Zamia cycadeoifolia*, *Z. caffra* with a trunk 15 inches in diameter, and *Z. Verschaffeltii*. Mr. Taylor, gardener to J. Yates, Esq., Highgate, who was second, had fine plants of *Cycas revoluta*, *Zamia caffra*, and *Z. moricata*; and Mr. Williams, Holloway, was third with *Dion edule*, *Cycas revoluta*, and *Zamia pungenis*. Among these from Mr. Bull was *Cycas Ruziziensis*, a slender-stemmed kind from the Philippines.

PANDANADS.—Among these we noticed remarkably fine specimens of *Pandanus javanicus variegatus*, *P. ornatus*, and *P. elegantissimus* from Messrs. Veitch; *Freyetia imbricata*, and *Pandanus utilis*, and reflexus from Mr. Williams; and Messrs. Jackson sent *Pandanus imbricatus*, *candelabrum*, and *javanicus variegatus*. A fine specimen of *Pandanus atilis* came from Messrs. Veitch; and Mr. Young, gardener to R. Barclay, Esq., and Mr. Donald, gardener to J. G. Barclay, Esq., Leyton, respectively sent *P. elegantissimus* and *P. javanicus variegatus*.

Awards—For three: first, Messrs. Veitch; second, Mr. Williams; third, Messrs. Jackson and Sons. For a single specimen: first, Mr. Young; second, Mr. Donald; third, Messrs. Veitch.

FERNS AND LYCOPODS.—The grand tree Ferns exhibited by Mr. Williams, the in-door Plant Superintendent at the Crystal Palace, formed conspicuous objects from every part of the Exhibition. They consisted of three plants of *Cyathea medullaris*, two of *Dicksonia antarctica*, and two of *Cyathea dealbata*, averaged 24 feet in height, and had spreading heads about 16 feet in diameter. The largest specimen of *Cyathea medullaris* was magnificent, being no less than 30 feet high. Of stove and greenhouse Ferns several admirable collections were exhibited by Mr. Williams, Mr. Baines, Messrs. Veitch, Mr. Bull, and others, containing fine examples of *Cibotium princeps*, *Schiedei*; *Dicksonia antarctica*; *Gleichenia semivestita*, *flabellata*; *Alsophila australis*; *Cyathea medullaris*, *dealbata*, and *Cooperi*; *Platy- cerium grande*, *Marattia elegans*, *Lomaria gibba*, *Blechnum corco-*

vadense, *Todea africana*, *Pteris scaberula*, the beautiful *Leptopteris superba*, *Trichomanes radicans*, *Pteris cretica albo-lineata*, *Drynaria morbillosa*, and many others which it would be tedious to enumerate. Hardy Ferns were also numerously shown. Those from Messrs. Ivory and Son, and Mr. Marshall, of Enfield, were well worthy of notice. The latter gentleman had a fine plant of *Trichomanes radicans*, *Athyrium Filix-femina crispum*, a very pretty variety of the Lady Fern, *Scopolopodium vulgare multifidum*, A. F. Fieldingii, a nice plant of *Polypodium nigropteris*, and the pretty *Polypodium alpestre flexile*, and *Hymenophyllum tambridgeense*. Messrs. Ivory exhibited two collections, the plants composing one of which were dotted over the rockwork at the Cromwell Road end, where they had a charming effect; and in another were many interesting varieties of *Athyrium Filix-femina*, such as *Frizelliae*, *plumosum*, *Fieldiae*, *multiceps*, and *Applebyanum*, several *Polystichums*, *Struthiopteris germanica*, and a nice case of *Trichomanes radicans*. Mr. Salter and Mr. Bull also furnished good collections.

Of few Exotic Ferns, Messrs. Backhouse and Messrs. Veitch exhibited a new, among which were an *Asplenium* from New Caledonia, *A. anisophyllum*, *A. recetum*, *Davallia alpina*, and *Trichomanes foniculeacum* from Java.

New hardy Ferns, shown by Messrs. Ivory, consisted of *Trichomanes Monlei*, small but pretty; *Polystichum angulare attenuato-eristatum*, slender and but slightly crested; *Lastrea Filix-mas Ingramii*, a handsome vigorous variety; and *A. F. laccolatum*, with pretty tapering bright green fronds, all of which received first-class certificates, and one of the second class was awarded to *A. F. pterophorum*.

Of Lycopods, beautiful pans were shown by Messrs. Veitch, Mr. Barnard, gardener to J. W. Taylor, Esq., Stoke Newington, and Mr. Fairbairn, Sion; and the following kinds were particularly worthy of notice—viz., *Selaginella Martensii variegata*, beautifully variegated with white; *pendulous* species from the Solomon Islands, bearing a striking resemblance to a *Draacrydium*; *japonica*, of a fine deep green; *japonica variegata*, *ensia*, *umbrosa*, *erythropus*, *epoda*, *Galceotti*, *Wildenowii*, *denticulata*, *stolonifera*, and *rubicinosa*.

Awards—For twelve stove or greenhouse Ferns (Amateurs): first, Mr. Baines; second, Mr. J. Hill, gardener to R. Hanbury, Esq., The Poles, Ware; third, Mr. Barnard. For twelve (Nurserymen): first, Mr. Williams; second, Mr. Bull. For six (Amateurs): first, Mr. Young, gardener to W. H. Stone, Esq.; second, Mr. Cross; third, Mr. Wilson, gardener to W. Marshall, Esq.; fourth, Mr. A. Ingram. For six (Nurserymen): first, Messrs. Veitch; second, Messrs. Jackson & Sons. For six new Tender Ferns: first, Messrs. Backhouse; second, Messrs. Veitch; third, Mr. Williams. For six new Hardy Ferns: first, Messrs. Ivory; second, Mr. Bull; third, Mr. Williams, Holloway. For twenty-four Hardy Ferns: first, Messrs. Ivory; second, Mr. Salter; third, Mr. Bull. For twelve: first, Mr. Wilson; second, Mr. Kille; third, Mr. Kemp, gardener to Earl Percy. For six Tree Ferns: first, Mr. Williams, Crystal Palace; second, Messrs. Veitch; third, Mr. Williams, Holloway. For three: first withheld; second, Mr. Bull; third, Mr. Hutt, gardener to Miss Burdett Coutts. For the finest Tree Fern: first, Mr. Williams, Crystal Palace; second, Messrs. Veitch; third, Mr. Bull. For twelve Lycopods: first, Mr. Barnard; second, Mr. Fairbairn; third, Mr. Higgs, gardener to Mrs. Barchard, Putney Heath. For six: first, Messrs. Veitch; second, Mr. Young, gardener to R. Barclay, Esq., Highgate.

ARADS, ARAIADS, AND MARANTADS.—For Arads, Messrs. Veitch were first with *Dicentra varia*, *Baranquiniana*, *Alocasia longiloba*, the handsome *Lovii*, *Veitchii*, *macrorhiza variegata*, and *zebrina*, and *Aglaonema commutatum variegatum*. Madame Legrelle d'Annis and Mr. Williams also contributed good specimens. Messrs. Veitch also exhibited several very handsome Araiads, and a fine collection of Marantads, consisting of the beautiful *Maranta Veitchii*, *zebrina*, *striata*, *splendida*, *regalis*, *Van den Heckii*, *tubispata*, very handsome, and some others. Among those from Madame Legrelle d'Annis, who was second, were *M. ornata*, *inseol-lineata*, and *Phytium Van den Heckii*.

DWARF CACTI.—Nice collections of these came from M. Charles Piersdorf, of Kausal Green and Avocado do St. Ouen, Paris, in which were *Echinocactus Cunninghamii* with orange flowers; *Echinopsis Eyresii* with large pink flowers; *Echinocereus multicostatus* with scarlet blooms. Several very curious kinds of *Cereus*, *Mamillaria*, *Echinocactus*, and similar subjects were shown by W. B. Kellock, Esq., Stamford Hill; Mrs. Pattison, Dorechester; and Mr. Waters, gardener to A. Mougredien, Esq., Forest Hill.

HARDY TAXADS.—For these Messrs. Veitch were first with a fine collection, in which were *Taxus japonica*, like a broad-leaved Irish Yew; *T. fastigiata*, of fine pyramidal growth; a handsome bushy plant of *Cephalotaxus drapacens*, *Arthrotaxus selaginoides*, *Cephalotaxus Fortunei*, and *Taxus depressa* with deep green foliage. Messrs. Waterer & Godfrey, who were second, had *Podocarpus andina* with dark foliage, *Taxus baccata erecta*, *aurca*, *elegantissima*, and *fastigiata*, along with some others; and a third prize was awarded to Mr. Wm. Paul.

CONIFERS. The hardy species and varieties were numerously shown, and among them were many handsome specimens though necessarily not large. The best collection of twenty-five came from Messrs. Veitch, and comprised *Larix Kampeferi*, a pretty light green species; handsome *Retinosporas*; *Thuja japonica*, forming a close pyramidal plant; *Thujopsis borealis* and *delabrata*. Messrs. Waterer & Godfrey, who were second, had *Thuja filiformis* of weeping habit, *Lobbi*, and *aurca*; *Pinus lasiocarpa*, and others. We also noticed in collections from the above and other exhibitors, *Cupressus Lawsoniana*, and a handsome variegated variety of it called *argentea*; *Fitzroya patagonica*; some fine plants of *Thuja aurca*; several interesting dwarf varieties of *Abies excelsa*, such as *Clauseriana*, *pumila*, *Gregorii*, and *pygmaea*; *Juniperus libanica compressa*, which would form a useful plant for flower-garden beds, &c. Messrs. Jackson contributed fine examples of *Picea Nordmanniana*, *P. pinsapo*, *lasiocarpa*, *nobilis*; *Thuja gigantea*, and *Wellingtonia*, both handsome plants about 8 feet high; *Cupressus Lawsoniana*, and others, which were studied over the rockwork near the southern entrance; whilst at various parts of the tent Messrs. Lee, Paul & Son, Standish, and others, exhibited the same class of subjects, the collection from Messrs. Paul & Son, not shown for competition, being very extensive. The only exhibition of

Greenhouse Conifers was that of Mr. Bull, consisting of *Arancaria excelsa*, *Bidwillii*, *Cookii*, *Cuneiformis* and its variety *glauca*, and *Libocedrus Doniana*.

Awards—For twenty-five Hardy Conifers: first, Messrs. Veitch & Sons; second, Messrs. Waterer & Godfrey; third, Mr. J. Standish. For twelve: first, Messrs. J. & C. Lee; second, Messrs. Jackson & Son; third, Mr. C. Turner. For twelve Greenhouse Conifers: first, Mr. W. Bull.

CALAIUMS, BEGONIAS, AND ANTIURIUMS.—The first were well represented in collections from Mr. Goodwin, gardener to A. Wattenbach, Esq., Camberwell; Messrs. A. Henderson & Co, and Mr. Fairbairn, who stood in this order in the prize list. *Chantini*, *Wrightii*, *Bellemei*, *bicolor splendens*, and the pretty *argyrea* were a few of the best. In *Begonias*, well-grown plants from Mr. Stone, Mr. Wheeler, and Mr. Venner were awarded prizes; and for *Begonias* in flower Mr. Earley, gardener to F. Fryer, Esq., Digswell, received a first prize. The most noticeable was *Digswelliana*, a very useful free-flowering deep rose-colored sort. For *Anthuriums*, Messrs. Veitch were first, Mr. Williams second, and Messrs. A. Henderson & Co. third. *Anthurium Scherzerianum* from the Messrs. Veitch had nine of its brilliant scarlet spathe of the largest size; and the same beautiful species was shown in fine condition by Mr. Williams, who also had acule producing its singular inflorescence. *A. cordifolium* was likewise shown in great perfection.

SEPIENTIES AND SARACENIAS.—Of the former admirable examples were exhibited by Messrs. Veitch, consisting of *Dominiana*, *Hookeri*, *levis*, *phyllophora*, an unnamed species, and *Rafflesiana*, with fine pitchers. For these a first prize was awarded, also for a remarkably fine single plant of *Rafflesiana*. Excellent *Saracenas* came from Mr. Baines and Mr. Williams, who were placed first and second.

YUCAS, BEAUCARNEAS, AND DASYLIRIUMS were exhibited by Mr. Williams, M. Jean Verschaffelt, W. B. Kellock, Esq., Stamford Hill, and Mr. Bull. *Yucas* consisted of quadricolor, the variegated *Aloc-leaved* kind, *Stokesii*, and *albo-spicata*; among *Beaucarneas* were *stricta*, *recurvata*, and *glauca*; and among *Dasyliuriums*, *acrotichium*, *latifolium*, *longifolium*, and *Hartwegii*.

Awards—First, Mr. B. S. Williams; second, M. Jean Verschaffelt; third, W. B. Kellock, Esq., Stamford Hill; fourth, Mr. Bull.

DRACENAS AND CORDYLINES.—Among these were some noble specimens of *C. heliconifolia* and *indivisa*, *australis latifolia*, *Draecena draco*, *indivisa*, and such kinds as *Cooperi*, *ferrea variegata*, and *nigricans*, with finely coloured foliage.

Awards—First, Messrs. Veitch & Sons; second, Mr. Williams; third, Messrs. Jackson & Son; fourth, Mr. Bull.

AGAVES were numerously shown, and assorted well with the rockwork near which they were placed. Noticeable among them were *Schldigera*, with the margins of the leaves set as it were with wood shavings; *filifera*, and its variety *longifolia*; the common and variegated American Aloe, the latter variously striped, in one of its varieties having a broad golden band up the centre of the leaf; *picta longifolia*, broadly margined with cream colour; *caeruleascens*, with very very dark foliage, and *denhata*, with long pale green leaves, having a glaucous tinge. *Verschaffeltii*, with handsome foliage; *Ousselghemiana*, pale green; *Jacobiana*, with broad leaves set with purplish spines, and many other singular kinds came from M. J. Verschaffelt, of Ghent.

Awards—For twenty-four: first, M. J. Verschaffelt; second, Mr. Williams; third, Mr. Charles Piersdorf. For ten: first, Mr. Williams; second, M. J. Verschaffelt; third, W. B. Kellock, Esq., Stamford Hill.

STANDARD ORANGE TREES, BAYS, PORTUGAL LAURELS, &c.—The first were not remarkable for size, but several finely fruited plants were shown by Messrs. Osborn and Bull. There were also fine standard *Myrtles*, *Bays*, and *Laurustinus* from the last-named exhibitor; but the best pair of standard *Bays* came from M. Jean Verschaffelt; of *Portugal Laurels*, from Messrs. Lee; and of *Box*, from Messrs. Veitch. These stood about 7 feet high, and had handsome round heads. The same firm had also a pair of *Waterer's* variegated *Holly* 9 or 10 feet high; and Messrs. Waterer had the same variety, though not so tall. The finest, however, came from Messrs. Jackson, of Woking, and had *stems* 5 or 6 feet high, and heads measuring at least as much across. Several good standard *Yews* were also shown, as well as large-headed *Portugal Laurels*, the latter by Messrs. Lee.

Awards—One *Orange tree*: second, Mr. Bull; third, Messrs. Osborn and Sons. Twelve *Orange trees*: third, Mr. Bull. One pair of standard *Laurustinus*: first, Mr. Bull. One pair of pyramidal *Bay trees*: first, Messrs. Veitch; second, Mr. Bull; third, Messrs. J. & C. Lee. One pair of standard *Bay trees*: first, M. J. Verschaffelt; second, Messrs. Veitch; third, Messrs. J. & C. Lee. One pair of standard *Portugal Laurels*: first, Messrs. J. & C. Lee. One pair of standard *Hollies*: first, Messrs. Jackson and Son; second, Messrs. Veitch & Sons; third, Messrs. Waterer & Godfrey. One pair of standard *Box trees*: first, Messrs. Veitch & Sons; second, Messrs. J. & C. Lee. One pair of any standard evergreen: first, Mr. Bull; second, Messrs. Veitch & Sons; third, Messrs. J. & C. Lee.

HOLLIES were shown in great variety, and some of them were very pretty. *White and Golden Milkmaid*, *Chapman's* *Gold-striped*, *Gold and Silver Hedgehog*, *Gold-edged*, having dark red young shoots, were some of the best of the variegated kinds. Of the plain-leaved *Ilex cornuta*, *Hodgkinsii*, with large dark foliage; *reticulata*, very dark, and *agrifolia*, with small dark green leaves, were amongst the most noticeable.

Awards—For thirty: first, Messrs. Veitch & Sons; second, Messrs. Waterer & Godfrey; third, Messrs. J. & C. Lee.

NEW PLANTS chiefly remarkable for their foliage were numerously shown. *M. Linden*, of Brussels, was first and third for six introduced into Enrore by the exhibitor; and Messrs. Veitch & Sons second and fourth. These from the former, to which the first prize was awarded, were *Anthurium regale* with leathery green leaves, with distinct midribs and venation; *Cycasophyllum spectandam*, with the leaves more oblong than those of *C. magnificum*; *Maranta Lindenii*, with beautifully shaded foliage, the under part very prominently lined; *Bignonia ornata*, with handsome glossy green leaves irregularly marked with white; *Philodendron Lindenii*, with handsome cordate foliage; and *Dichorandra musica*, beautifully marked with numerous white lines. Messrs. Veitch were second with a handsome *Ardisia* from New Caledonia; *Maranta Veitchii*; *Rhododendron Brookmanii*; *Acalypha tricolor*, with ovate brownish-green leaves and some reddish markings; a pretty *Aphelandra*, from Peru, distinctly banded with yellow; and *Braemna albo-marginata*, pale green, edged with golden yellow.

Among other plants from the same firm were a handsome golden variegated *Croton*, quite distinct from the older kinds in the form of its leaves; a pretty *Aralia* with footstalks exhibiting some yellow and crim-

son markings; and *Phyllanthus variegatus* with green leaves variegated with white. *Psychotria nivosa* with singular white flowers came from M. Linden.

For three new plants in flower, Messrs. Veitch were first with *Begonia Pearcei*, with velvety dark green leaves and bright yellow flowers; *Palava flexuosa*, and an *Aphelandra*. Mr. Bull was second with *Siphocampylus fulgens*, with bright scarlet flowers; *Bertolonia margaritacea*; and an *Australian Mallow*.

The next class was for one new plant in flower. Here M. Linden was first with the *Psychotria* above-mentioned; to Mr. Standish second with a double *Clematis Fortiana*; Messrs. Veitch, third, with *Darwinia imbricata*.

For a new plant not in flower, M. Linden was first and equal second with *Dichorisandra muscica*, and *Maranta Lindeni*; Messrs. Veitch being equal second and third for the Peruvian *Aphelandra* and *Maranta Veitchii*; and Mr. Standish equal third, for a pretty *Athyrium*, from Japan. Mr. Bull exhibited a variety of *Phajus grandifolius* with variegated leaves; and M. Amroise *Verschaffeltia Zanzibilla*.

In the class for twelve new plants, Messrs. Veitch were first with the beautiful rose-spotted *Bertolonia guttata*, *Primula cortusoides amara*, *Colus Gibsoni*, from New Caledonia; an *Aralia*, the new *Aphelandra*, and some other plants already noticed. M. Linden, who was second, had *Dichorisandra vittata*, *Maranta virginalis*, *M. roseo-picta*, *Scindapsus pictus*, *Philodendron Lindeni*. Mr. Bull had, among others, *Eranthemum argyranthemum*, and two pretty variegated *Crotophyta*; whilst Mr. Williams, who received a third prize in the class for six new plants, had an ornamental *Calamus*, called *Impratrico Mariei*; *Telicianthera hecidea versicolor*, of which the ovate leaves are variegated with rose and red; and a beautifully variegated *New Zealand Flax*.

MISCELLANEOUS.—Conspicuous among such subjects were several plants of *Eucharis amazonica* shown by Mr. Howard, gardener to E. Brand, Esq., Balham. These were in tubs, and measured not less than 5 feet across, though it was stated that but two and a half years ago they had been purchased in three-inch pots. The flowers were of remarkable size, and it was stated that the plants had bloomed three times since Christmas. The course of treatment pursued was to keep them growing in bottom heat in the stove, to repot when necessary, and afford liberal supplies of manure water. A small collection of Canadian plants from Mr. Stark, Trinity, near Edinburgh, and variegated *Maize* from Messrs. Carter & Co. were shown near these, and at the base of the rockwork Lilies of the Valley by Mr. Salter and Messrs. Veitch, those from the former having beautifully striped leaves. A variegated *Wellingtonia* came from Mr. H. Hartland, Cork; and a gold-edged Irish Yew, the pretty *Berberis stenophylla*, and a new *Thuja* from Messrs. Fisher, Holmes, and Co. Mr. Watson, St. Albans, sent a dozen Filmy Ferns, several of which were very fine; Mr. Barnard, gardener to J. Taylor, Esq., a number of aquatics, such as *Vallisneria spiralis*, *Aponogon distachyon*, and *Limnocarum Humboldti*; and Mr. Knight, Chateau de Potechartrain, a hybrid *Ananarthus* with very ornamental foliage, totally distinct in character from *A. melancholicus ruber*, and which promises to be useful.

Miscellaneous groups of plants were exhibited by Messrs. Veitch, Linden, Lee, and E. G. Henderson, that from the last-named including the pretty new variegated *Cynosurus*. Mr. Bull had the Long-podded Radish, *Pitcairnia tubuliflora*, variegated *Maize*, *Maranta splendida*, the singularly marked *Dioscorea anacrotichus*, *Goodyera discolor*, of which the white midribs formed a marked contrast to the rest of the dark velvety leaves, *Eranthemum argyranthemum*, and numerous other interesting plants. From Messrs. Lee came finely-fruited *Ananas*; from Mr. Wilson, gardener to W. Marshall, Esq., the Madagascar Lace Plant; and from Messrs. E. G. Henderson & Son a number of handsome-folaged soft-wooded plants. A very interesting exhibition being the *Ailanthus glandulosa* with the silkworm peculiar to that tree feeding on its leaves, together with specimens of the silk, came from Lady Dorothy Nevill.

BOUQUETS, AND OBJECTS OF ORNAMENT IN NATURAL FLOWERS.

THIS week we can do no more than enumerate the prizetakers in each class, but we propose next week to give more details.

DINNER-TABLE DECORATIONS.—First, Mrs. Lermittie, Knighton's, Finchley. Second, Messrs. Lucking, Westbourne Park, W. Third, Mr. T. Charles March, Ambassador's Court, St. James's Palace.

TABLE FLORAL.—Second, Miss F. A. Wint, 15, Bedford Place, Brighton.

DRAWING-ROOM FLOWER STANDS.—First, Mr. T. Charles March, Ambassador's Court, St. James's Palace.

DRAWING-ROOM PLANT CASE.—First, Mr. George MacIntosh, Nurseryman, Hamme Smith. Second, Messrs. Clandel, Houghton, & Son, 89, High Holborn. Third, Messrs. Barr & Sazden, King Street, Covent Garden.

WINDOW BOX.—First, Messrs. Wm. Cutbush & Son, Nurserymen, Highgate.

HANGING BASKETS.—Second, Messrs. Wm. Cutbush & Son, Nurserymen, Highgate.

ONE WEDDING BOUQUET.—First, Messrs. Lucking, Westbourne Park, W. Second, Mr. John Delamere, Nurseryman, Holm Lane, Orton, Cheshire.

THREE BOUQUETS FOR BALLS.—First, Mr. Richard S. Yates, Sale, Cheshire. Second, Messrs. Lucking, Westbourne Park, W.

THREE HEAD-DRESSES OR WREATHS.—Second, Mr. Richard S. Yates, Sale, Cheshire.

FRUIT.

The show of Fruit was not so extensive as might have been expected on such an occasion—a result doubtless attributable to the early period of the season. The quality, however, was generally good. The only collection of ten dishes was that from Mr. Turner, of Slough, which consisted of two good Pines, Melons, very good bunches of Black Hamburg and Muscat Grapes, Choice Mignonne Peaches, Hunt's Tawny Nectarine, Strawberries, and Figs.

PINES were few in number, but to make up for this deficiency, several were very good. In Queens, Mr. Cameron, gardener to the Duke of Richmond, was first with a very good fruit; Mr. Carr, gardener to the Rev. J. Micklethwait, Norwich, second; and Mr. Higgs, gardener to Mrs. Birchard, Putney Heath, third. In Smooth-leaved Cayennes a fine fruit from that veteran Pine-crower Mr. Barnes, gardener to Lady Rolle, Bleton, was first, and a very good one from Mr. Cameron second. In the class for Providence, the only exhibitor was Mr. Meredith, Garston, who received a first prize. In the class for any kind, a Smooth-leaved Cayenne of 7 lbs.

from Mr. Page, gardener to W. Leaf, Esq., was first, but it was over-ripe at the base, and not sufficiently ripe towards the crown; Mr. Wallis, gardener to J. Dixon, Esq., Astle Park, second with Black Prince, weight 4½ lbs.; and Mr. Drewitt, gardener to Mrs. Cubitt, Denbies, third with Black Jamaica.

GRAPES.—In the class for five varieties, Mr. Bannerman, gardener to Lord Bagot, Blithfield, was first with Golden Hamburg, Black Hamburg, and Chasselas Musque very well coloured, Black Prince, and Black Tenerife. Mr. Allport, gardener to H. Ackroyd, Esq., Dodington Park, was second with Muscat Hamburg, Black Frontignan, West's St. Peter's, Ingram's Prolific Muscat, and Black Hamburg. This was also a nicely coloured collection, and the berries even in size. Mr. Osborne, Kay's Nursery, Finchley, who was third, had, amongst others, very good bunches of Black Hamburg and Buckland Sweetwater.

In the class for six bunches Mr. Hill, gardener to R. Sneyd, Esq., Keele Hall, was first with six fine bunches of Black Prince, well coloured, and measuring about 11 inches from the shoulders to the point; still they were not equal to the splendid bunches of this variety which he usually exhibits. Mr. Osborne was second with large bunches of Black Hamburg not quite perfect in colouring; and Mr. Bannerman third with good bunches nicely coloured, but smaller in berry. In the same class Mr. Turner exhibited good Muscats, but not ripe enough; Mr. Clement and Mr. Wallis excellent Black Hamburgs; Mr. M. Henderson, gardener to Sir G. Beaumont, Bart., Cole Orton, very good bunches of the same kind and of Golden Hamburgs.

In Black Hamburgs, three bunches, the exhibitions were numerous, and generally very good. Mr. Allport was first and Mr. Turner second with large bunches well coloured; Mr. M. Henderson third with well-grown and nicely coloured bunches. Good exhibitions in the same class came from Mr. Wallis, Mr. Allen, gardener to Capt. Glegg, Mr. Clement, Mr. Bannerman, and J. Lermittie, Esq., Finchley.

For three bunches of any Black Muscat-flavoured Grape, Mr. Allport was first with Black Frontignan, two of the bunches handsomely shouldered; Mr. Miller, gardener to Lord Foley, second with the same kind, and Mr. Fowler, gardener to the Earl of Stair, Castle Kennedy, third with Muscat Hamburg.

In the class for three bunches of any other Black kind, Mr. Hill was first with Black Prince; Mr. Allport second with West's St. Peter's, and Mr. Cruickshank, gardener to W. Jones Loyd, Esq., third with fine bunches of Black Prince, but severely sufficiently coloured.

Muscats, as usual at this season, were not in that state of ripeness that they are seen at a later period, but better in this respect than we have usually seen them at the same time of year. Mr. Turner, who was first, exhibited the ripest, and these were fine bunches with large berries. Those from Mr. Chambers, gardener to H. Fowler, Esq., Woodford, were also very good. Mr. Beasley, gardener to Mrs. Wood, Twyford Abbey; Acton, was third.

Of White Grapes, with a Muscat flavour, Muscat Trovoren from Mr. Standish, was awarded the first prize, and Chasselas Musque, from Mr. Fowler, the second. Mr. Ruffett, gardener to Viscountess Palmerston, was third.

For three bunches of any other White kind the first prize was awarded to Mr. Osborne, Finchley, for Buckland Sweetwater, very fine, and even in size of berry; the second to Mr. Fowler, gardener to the Earl of Stair, for fair bunches of Golden Hamburg with good-sized berries, but apparently not sufficiently ripe, and the third to Mr. Bannerman for small bunches of the same kind, but well ripened.

The best single bunch of Black Grapes was Black Hamburg, well shouldered and finely coloured, from Mr. Allport, and the second best the same kind, from Mr. Osborne, large in bunch and berry, but not quite perfect in colour. In the corresponding class for White Grapes, Mr. Turner was first, with splendid Muscats just acquiring a yellow tinge, Buckland Sweetwater, from Mr. Osborne, very fine but scarcely quite ripe, was awarded the second prize.

Of Vines in pots, Messrs. Lane exhibited four splendid specimens in 20-inch pots, and loaded with large bunches. The kinds were Buckland Sweetwater, Alcaute, Black Hamburg, and Foster's White Seedling. Those were awarded a first prize, and a like award was made to Mr. Record, gardener to Lieut.-Col. Lloyd, Hawkhurst.

MELONS were not numerous. The best of the Green-fleshed was Meredith's Hybrid Cashmere, from Mr. Smith, gardener to H. Littledale, Esq., Liscard Hall. Mr. Bennett, gardener to G. S. Foljamie, Esq., Osberton Hall, was second; and Mr. Whiting, gardener to Mrs. Hope, The Deepdene, third. In the Scarlet-flesh class, Mr. Lane, gardener to J. Miles, Esq., was first, with Scarlet Gem; Mr. Batger, gardener to J. Gott, Esq., Arley, second; and Messrs. Gadd, third.

PEACHES AND NECTARINES.—But few of either were exhibited, but what there was was good in quality. Mr. Gardner, gardener to Sir George Phillips, Shipston-on-Stour, was first, with what appeared to be Royal George; Mr. Turner second, with Grasse Mignonne, well coloured, and first in Nectarines with Hunt's Tawny, Mr. Tegg, gardener to the Duke of Newcastle, being second. In the class for three dishes of the same fruit, Mr. Evans, gardener to C. N. Newdegate, Esq., M.P., was first, with Red Roman, Elrage, and Violote Hative.

FIGS.—Only a few dishes were shown. Very good Brown Turkey, from Mr. Fairbairn, Stou, was first; the same kind from Mr. Tegg, and Mr. Snow, West Park, second and third. Some fine fruit of the Castle Kennedy, together with branches of it bearing freely, were shown among miscellaneous subjects.

STRAWBERRIES.—Several fair dishes were exhibited. There was only one exhibitor in the class for six kinds—Mr. Widdowson, gardener to J. Barnes, Esq., Rickman-worth, who had a first prize for Oscar, Sir Harry, Sir C. Napier, President, Empress Eugenie, and Liver's Seedling. For three kinds, Mr. O'Brien, gardener to R. P. King, Esq., Bristol, was first with very good fruit of Oscar, Duc de Malakoff, and Trollope's Victoria. In single dishes, Mr. Drowett, gardener to Mrs. Cubitt, Denbies, was first, with Alice Maude; Mr. O'Brien, second, with Trollope's Victoria, and Mr. Irving, gardener to the Duke of Hamilton, Wickham, third with Marguerite. Very good Strawberries in pots, from Mr. Fairbairn, with the fruit equally ripened, received a first prize.

CHEERRIES.—But few were shown. The first prize went to Empress Eugenie, from Mr. Ruffett; the second to Black Tartarian, from Mr. Allen, gardener to Capt. Glegg; and the third to Mr. Chrd for Knight's Early Black, and the same exhibitor had a similar award for Elton. A pot plant of Frogmore Forcing Cherry, a new kind allied to Werner's Early Heart, and in excellent bearing, was exhibited by Mr. Turner, of Slough, and was awarded a first-class certificate.

RASPBERRIES.—Only two dishes, red and yellow, were shown. These came from Mr. Allen, gardener to E. J. Hopwood, Esq., Manchester, and were awarded second prizes.

MISCELLANEOUS.—In a class specially appropriated to Bananas a fine cluster of *Musa Cavendishii* from Mr. Carr, gardener to P. L. Hinds, Esq., Byfleet was first; and a smaller one from Mr. Batger, gardener to J. Gott, Esq., Armlay, second. From the gardens of O. F. Meyrick, Esq., there was also fruit of *Philodendron pertusum*, and from Mr. Taylor, gardener to J. Yates, Esq., Highgate, the curious fruit of *Dion edule*. Mr. Cameron, gardener to the Duke of Richmond, Goodwood, exhibited four fine Queen Pines; and Mr. Evans, gardener to O. N. Newdegate, Esq., a box of well ripened *Violette Hâtive* and *Elrue Nectarines*. Mr. Hazlewood, Hoddessdoe, contributed excellent examples of Oranges and Citrons; and Mr. Ford, gardener to W. Hubbard, Esq., Horsham, a collection of Apples and Pears in excellent condition, comprising of Apples Pearson's Plate, Norfolk Beefing, New Rock Pippin, Dutch Mignonette (fine), Alfriston, Holland Pippin, Royal Russet, Manington's Pearmain, French Crab, Royal Pearmain; and of Pears, Knight's Monarch, Easter Beurré, and March Bergamot; also Citrons and Oranges of home growth. Mr. Snow, Wrest Park, had very fine Court-Pendul-Piat, Scarlet Nonpareil, Beauty of Kent, Reinette du Canada, Stormor Pippin, Boston Russet, and Old Green Nonpareil Apples, and The Warden Pear. In a collection from Mr. Barnett, gardener to the Rev. W. Garnett, were Beurré de Rance, very fine, clear-skinned and sound, and *Ne plus Meuris*. Well-kept Apples also came from Mr. Lumsden, gardener to Lady Mary Hamilton, and Mr. Divers, of Staplehurst. Vanilla pods were shown by Mr. Bennett, gardener to G. Foljamba, Esq., Osberton; Orchard-honse trees in fruit of Oranges, Figs, Peaches, and Nectarines by Messrs. Lane and Mr. T. Morten, Amersham. The only examples of training exhibited came from Messrs. Jamis and Durand, Paris, and represented various forms of palmate and pyramidal training as applied to the Apple, Pear, Peach, and Apricot.

In concluding our remarks on the above portions of the Exhibition, a word of praise is due to Mr. Thomas Moore, the Exhibition Secretary, for the excellence of the arrangements in his department, in carrying out which he was ably seconded by Mr. R. Dean, the Assistant-Secretary, and in the entry department by Mr. Flood.

VEGETABLES.

At this grand Exhibition the old rule in gentlemen's gardens of making vegetables the first consideration, fruit the second, and ornamental plants the third, was thoroughly reversed; for though fruit and vegetables were more than respectable, neither in quantity, nor in quality, could they compare with the magnificence of the ornamental department.

In Class 201, Forced vegetables of six kinds, without salading, there were five entries; the first prize being taken by Mr. Carr, gardener to the Rev. J. W. Micklethwait, Taverham Hall, Norwich, and consisted of Mushrooms, rather old; early Turnips, small; Carrots, very good; Ash-leaved Kidney Potatoes; Dwarf Kidney Beans, nice and crisp; and Tom Thumb Pea in good condition. Second prize was taken by Mr. R. Budd, gardener to the Earl of Darnley, Cobham Hall, Gravesend, and consisted of Tomatoes, ripe; Carrots, small; a dish of small Mushrooms, good Sea-kale, young crisp Dwarf Kidney Beans, and a pretty dish of Kidney Potatoes named Mona's Pride.

In Class 202, Vegetables not forced, six kinds, first prize to Mr. Bailey, gardener to T. T. Drake, Esq., Shardeoles, Amersham, and consisted of Carrots, fine Broccoli, good Leeks, good Cabbage, Potatoes, and a good bundle of Asparagus. Second prize to Mr. Whiting, gardener to Mrs. Hope, of the Deepdene, Dorking, for fine round Potatoes, Asparagus, Broccoli, Cabbage, Spinach, and Onions. Third prize to Mr. Budd, gardener to the Earl of Darnley, Cobham Hall, for good Onions, good old Carrots, Broccoli, Cabbage, Leeks, and Asparagus.

In Class 203, Salading, ten sorts, first to Mr. Masou, Market Gardener, Lower Road, Deptford, for Mustard and Cress, two kinds of Lettuces, two of Radishes, Onions, Endive, Cucumber and Celery. Second, Mr. Budd, gardener to the Earl of Darnley, for a nice collection. Third, Mr. Lumsden, gardener to Lady M. C. N. Hamilton, Bloxholm Hall, Slanford. The Cabbage Lettuces in this collection were extra good.

In Class 204, fifty heads Asparagus, first to George Tippet Hassell, Esq., Barton Hill, Bristol. Second, Mr. Snow, gardener to the Countess Cowper, Wrest Park, Silsoe, Beds. Both good.

In Class 205, twelve largest heads of Asparagus, first, George Tippet Hassell, Esq. Second, J. Cockle, Esq., West Moalsey Lodge (J. Penold, gardener).

In Class 206, Mushrooms, one punnet, first, Mr. Budd, gardener to the Earl of Darnley, for a nice sample. Second to E. J. G. Hopwood, Esq., Hopwood Hall, Manchester (W. Allen, gardener). Other good dishes of larger Mushrooms were shown.

In Class 207, Potatoes forced. Kidney, first to Mr. H. W. Cordle, gardener to the Earl Fitzwilliam, Coollatten Park, Carnew, Wicklow, for a beautiful dish of the Prince of Wales Kidney. Second to Mr. Lumsden, gardener to Lady M. C. N. Hamilton. Third, Mr. Whiting, of the Deepdene.

In Class 208, Potatoes forced, twenty-four of any round kind, first, very nice dish from Mr. Thomas Westbrook, Abingdon, Berks. Second, Mr. Snow, of Wrest Park.

In Class 209, Kidney Beans forced, fifty pods. These in general were fine pods in nice young condition. First to J. S. Oates, Esq., Floral Villa, Hanwell. Second, E. Oates, Esq., Bydorp House, Hanwell (gardener, Richard Marcham). Third, J. Gott, Esq., Armlay House, Leeds (E. Batger, gardener).

In Class 210, Peas, half a peck, only one dish, a good one, exhibited

by Mr. Turner, of Slough. In these days of early vegetables, we were surprised that Peas were not more numerous.

In Class 211, Early Carrots, bunch of twenty-four, first, Mr. Snow, of Wrest Park. Second, Mr. Whiting, of the Deepdene. Most of the Carrots that were not prizetakers were rather young.

In Class 212, Early Turnips, bunch of twelve. Did not perceive any shown separately; of course they could only have been slightly forced ones.

In Class 213, Cucumbers, one brace, first, Mr. John Rabbitt, gardener to the Lord St. John, Melchbourne Park, Higham Ferrars. The kind, *Invincible*. Second, H. Littledale, Esq., Liscard Hall, Cheshire (G. Smith, gardener).

In Class 214, The handsomest Cucumber, first, Mr. Rabbitt, gardener to the Lord St. John, of Melchbourne Park, for *Invincible*. Again a good-looking show of Cucumbers. Second to Mr. H. Carr, Jeffries' Arboretum Nurseries, Ipswich (Jeffrey's Gem). Third, Mr. John Jennings, Shipston-on-Stour.

In Class 215, Cucumber, the longest, first, Mr. John Hense, East Gate Nursery, Peterborough. Second, Mr. H. Carr, Jeffries' Arboretum Nurseries, Ipswich. Third, Mr. John Jennings, Shipston-on-Stour.

Except for securing size and length, the most of the many Cucumbers exhibited were too old for use. Where fine-sized fruit formed a feature the card had blown on a small neat brace of about a foot or 14 inches in length, and great was the commotion even among the outsiders, as to the reason why these little fresh things should have a prize. If Cucumbers had been shown on the principle of fittest for the table, we confess that in our opinion that small neat brace would have run more than hard those three times in bulk and weight.

In Class 216, Rhubarb, heaviest twelve stalks, first, Mr. Whiting, gardener at the Deepdene. Second, Mr. John Cattell, Nurseryman, Westerham. Third, R. Barclay, Esq., West Hill, Highgate (W. Young, gardener). The kinds shown were chiefly Myatt's Victoria.

In Class 217, Cabbage, three heads, first, Mr. Snow, gardener at Wrest Park, for nice firm compact heads. Second, W. Earley, gardener to F. Pryor, Esq., Digswell, Welwyn. These Cabbages were very good, but most of the Cabbages were too young, with flabby leaves, instead of compact hearts getting firm.

In Class 218, Cauliflowers, three heads, first to John Cattell, Nurseryman, Westerham, Kent. Second, Mr. Snow, of Wrest Park. These collections had firm, white, compact heads. There were few Cauliflowers on the tables.

In Class 219, Broccoli, three heads, first, Mr. Cattell, for Cattell's Eclipse, very compact firm heads. Second, Mr. Whiting, of the Deepdene, with Cattell's Champion. Third, Mr. T. Record, gardener to Lieut. Col. Lloyd, Hawkhurst, Kent, with larger but more open heads. Besides these, and others not placed, we noticed three fine compact heads of Garaway's late White, from Messrs. Garaway and Co., of Durdham Down Nursery, Bristol. These seemed as if they would bridge us over nicely between late Broccoli and early Cauliflower.

In Class 220, Newly introduced vegetables, we did not observe the prizes given, but there were good specimens of *Dioscorea batatas* from Mr. Crickshank, gardener to W. Jones Loyd, Esq., Langleybury, Watford; and from the Messrs. Ivory, of Dorking, though these could scarcely be considered new vegetables. Then a large space was filled with the new Radish, *Raphanus caudatus*, sent by Mr. Bull, of Chelsea, which, even in small pots, produced freely its whip-like pods. We did not taste the pods, and therefore can say nothing of its qualities; but its distinct and singular appearance, and free growth, will, we have no doubt, make it pretty generally diffused next season.*

IMPLEMENTS, &c.

There was next to an impossibility of coming to a decision on the merits of many implements, because there was no chance of trying them in practice, and the absence of cards left the Jurors in doubt whether the objects were intended for competition or not. There did not seem to be anything new in the great numbers of small mowing machines, and the best could only be decided on by trial, and price, &c., taken into consideration. This was partly broken through when a first certificate was awarded Mr. Read for syringes, pumps, and engines, owing to their superior workmanship; and an award was made to Messrs. Warner & Sons for a similar collection, all priced. A horse-shoe covered with wood, to be used for rolling and mowing lawns, was shown by Mr. Henderson, gardener to Sir G. H. Beaumont, Bart., Cole Orton Hall, Ashby-de-la-Zouch, which, if it do not crack, become slippery, or turn up the edges of the turf, will have the advantage of not keeping the horse's feet too hot, which boots are apt to do. This injuring of the feet of the horse from the use of boots is a great thing against their employment, unless for short periods. Models of Paxton's, Cranston's, and Ingram's Strawberry-houses, and Willis's patent folding-ground viney were passed for reasons stated above, and as not now containing anything new. Tabular saddle boilers were exhibited by Messrs. Cumming and Edmonds, Stamford Bridge, Brompton, S.W., in which the saddle consists of circular tubes. In some cases the bottom of the furnace is formed of tubes, and in the other of bars in the usual way, and we rather like that best, just as other men of even

* This is not a new vegetable. Nearly fifty years ago, Mr. Lambert, President of the Linnean Society, found it growing in a private garden in Wiltshire.

greater experience, prefer tubes. These small boilers, we have no doubt, will answer well for small places, though it is doubtful whether the tubes of the saddle will be better than the common saddleback. Another boiler was exhibited with furnace complete, and a lid fitting the inclined plane to the bars, and at night a galvanised tube to be fitted to this opening filled with fuel to descend gradually to the bars. We wonder how long such a tube would stand when used by a common labourer. For a careful amateur, who does not like looking to his fire often, the supply-tube would be useful in a cold night. A prize was given to Mr. Gray for his oval double tubular boiler, though there is not much of the oval in it; but those who have worked it say that it is a powerful boiler when much work is to be done with it. In wheelbarrows there was nothing to merit special attention, though improvements are much needed. For sunshades for garden seats a certificate was awarded to Mr. Scowan, patent canopy maker, Allen Road, Stoke Newington, each supported by a stout rod of brass, and which can be moved according to the direction of the wind. Prices not given.

In Class 231 (G), a prize was awarded to Mr. W. Earley, gardener to F. Pryor, Esq., Digswell, Welwyn, Herts, for a guard for protecting young trees from animals in parks, &c. It is made of stout iron, with feet to go in the ground, with wire for 2 feet in height to keep out small intruders; is neat and artistic in appearance, and is to cost only 30s. It would be well if exhibitors would state the price of the things exhibited. This guard is really good. It is made in two semicircular pieces, and then joined when placed round the tree with screws and nuts.

In Class 231 (C), Mr. Charles Lee exhibited a strong two-wheeled transplanting machine, and which can be built for £20. In principle it would act much the same as the old timber-gig. As combining the novel and the adaptable, to circumstances, such as passing through narrow gates and on narrow walks, the prize was given to a machine constructed by Mr. J. McDoe, gardener to Coles Child, Esq., Bromley, Kent. Speaking from memory we cannot well describe its size, &c.; but the two wheels at back are of iron, occupying about a yard in width altogether, have a strong pole attached by means of bands of iron, which rise far above the level of the wheels. To the sides of the pole are attached strong canvas, cordage, or chains, for passing under the ball of the tree, and then that is raised by leverage in the usual way. Between these two iron wheels, and on the same axis, is placed a narrow wheel, notched for a ratchet wheel, and the turning of this with handle enables the operator to place the machine backwards and forwards with very little application of physical strength. To make this all the more easy when the tree is lifted and the pole brought to the ground in front, a small wheel on each side these causes the whole to be moved when empty or loaded with great ease.

In Class 231 (D), for the best mode of ventilating plant-structures, the prize was awarded to Messrs. Sanders, Frewer & Co., Bury St. Edmunds, for one of Beard's patent metallic non-conducting glass houses, the main features of which have been previously described in the Journal. A small sash all along the apex is made to open by leverage, and the same takes place in front; and a distinguishing feature is, that the opening is made close to the surface of the ground outside. The mode of opening and shutting all these ventilators at once is very simple.

The models sent by Mr. Newton, landscape architect, did not seem simple enough to be appreciated by the Jurors, more especially as there was no one to explain the objects.

DESIGNS FOR LAYING OUT A PRIVATE GARDEN on the scale of 40 feet to the inch, the space twenty acres, &c. (Class 235).—The prize was awarded to J. W. Chapman, Hermitage Road, Richmond, Surrey. The object seems to have been to cluster the offices, &c., on one side of the mansion, and the flower garden on the other side and in front close to the house. Garden front, open lawn with but few trees, sides skirted with masses of shrubs in the picturesque style; a lake in front in the distance. Entrance through a lawn open, but sheltered, and the sides, &c., well grouped. A good design.

In laying out an oblong of five acres on a scale of 10 feet to the inch, the prize was awarded to Mr. Thomas J. Caparn, King's Road Nursery, Newark; and though there was more of the artistic shown, and there was more massing at the sides of the lawn and walks through the wood and shrubberies, there was the same principle of an open lawn on the garden front developed and maintained. Such designs will help to show the importance of ease and breadth of view close to a mansion. Dotted the lawn with flower-beds would have spoiled the effect in either place. It would improve many places if the lawn were enlarged at the expense of flower-beds, and there was more green and less colour, however bright in summer, and less of dull earth in winter.

GARDEN ORNAMENTS (Class 232).—There were some pretty large vases formed of ribs of iron and then covered with the turf to keep in the soil, shown by Messrs. Hunt & Pickering, of Leicester; and Italian baskets shown by Mr. Bull, of Chelsea. A certificate was awarded to vases, fountains, &c., of artificial stone, sent by Messrs. Rosher, Queen's Road West, Chelsea. Also, to Mr. Thomas, 6, Newcastle Place, and 133, Edgeware Road, Paddington, for wire arches, seats, temples, and trainers; but chiefly for the great variety and artistic beauty of many suspended wire baskets, &c.; also, for a nice collection of rustic work in wood, of seats, baskets, and tables, of the proprietor of which no name was attached. Also, for some nice garden chairs with wooden-sparred bottoms, but the back done very artistically and nicely with metal bronzed. There was a great variety of this style of chairs,

mostly of wood with the exception of the framework, but these chairs with metal backs were taken out of the class of garden utilities into that of garden ornaments, and as people do not lean much against such chairs, the wooden bottoms made them almost equal in point of comfort for the sitter, &c., to those formed all of wood. I know that it is common to see iron chairs and wire chairs stuck about in all quarters, but few things could be more uncomfortable either in cold or wet weather, owing to the absorption and radiation of heat. A great improvement was effected when these chairs were made with wooden bottoms. There was no name attached to this exhibition, but for elegant places these chairs are a march in the right direction. No prizes were given, but the common Leicester chair to hold three or more persons may be had according to the style of the painting, from 15s. to 25s.

A prize was also awarded for two nice designs of rockwork or ruins, suitable for Ferns, sent by Mr. E. A. Puig, Grove Terrace, Grove Road, St. John's Wood.

Of Orange tree tubs, there was a great variety, and among others was one of stained or varnished wood, which would look well in an ornamental conservatory attached to a suburban rustic mansion; but if we proceed as we are now doing, the time will not be far distant when the floor of conservatories close to a palatial mansion will be covered with marble, and the tubs, or rather the artistic vases, will be made of the finest china, with rougher lining inside to keep them from injury. Once we saw a marbled-floored conservatory, and some baskets of plants on it, the baskets made of common wire, green painted! The finest and a different marble would have been more appropriate material for pots to stand on the marble of such a floor.

BOTANICAL CONGRESS.

The first meeting of the Botanical Congress was held in the Raphael Room of the South Kensington Museum, May 23, at 11 A.M., Professor De Candolle in the chair.

A very large meeting, including almost all the British and foreign botanists and horticulturists present in London, assembled to hear the President's address, and a large number of ladies graced the meeting with their presence. Before proceeding to the business of the meeting, Professor DE CANDOLLE spoke as follows:—

"Before I commence my address in French, allow me to say a few words in English—first, as a mark of respect to this great country, and next, in explanation of my views for the conduct of present and future meetings of this kind. We have to choose between two alternatives: either that every member should speak in his own language, or in that of the country where the congress meets. This last method would destroy the equality between members which is desirable in every public assembly. Not a few would be reduced to silence, or at least prevented from taking part in the discussion, and several distinguished men would therefore avoid international congresses. The other plan of letting every one speak in his own language appears to be much more convenient. For these reasons I shall address you in French, and in doing so I establish in fact the right of every Englishman to speak in English at Paris or at Berlin, at Florence or at Vienna, under similar circumstances."

The SECRETARY then announced that the following gentlemen had been elected Vice-Presidents of the Congress:—Professor Lecoq, Clermont Ferrand; Dr. Weddell, Poitiers; Professor Kickx, Ghent; Professor Morren, Liège; Professor Caspary, Königsberg; Professor Reichenbach, Hamburg; Professor Karl Koch, Berlin; Dr. Schulz Bipontinus, Deidesheim; M. Hermann Wendland, Hanover; Professor Meissner, Basle; Signor Triana, New Grenada.

The following works were laid on the table:—

Dr. Hasskarl: a manuscript *Clavis* to Rheede's "*Hortus Malabaricus*;" some papers from Professor Gasparini; an illustrated work on the species of Cotton, by Professor Parlatore, &c.; some exceedingly beautiful water-colour drawings, with analyses of flowers, by Mr. Julius Platzmann, of Leipzig; also several beautiful drawings of British plants, by Mr. W. G. Smith.

Professor DE CANDOLLE then read his inaugural address, on the conclusion of which a vote of thanks was proposed by Sir C. Wentworth Dilke, M.P., and seconded by Sir Roderick Murchison, who took the opportunity to allude to the philosophic views of M. De Candolle, and to the masterly way in which he had handled his subject.

Mr. BENNETT, on the part of the botanists of Britain, also tendered his thanks to the eminent Chairman for the honour he had conferred on them by presiding on the occasion, and specially for the preparation of so admirable an address.

Professor DE CANDOLLE briefly replied.

Dr. SCHULZ BIPONTINUS, a Vice-President of the Imperial Leopoldine Academy, offered the congratulations of that learned and ancient body to the President and members of the Botanical Congress.

Dr. MOORE then exhibited specimens of *Megaacarpaa polyandra*, a Crucifer with fifteen stamens, which excited great interest among the botanists present.

Mr. RIVERS then made some remarks on seedling Peaches and Nectarines.

Professor CASPARY then spoke on the movement of the branches of woody plants caused by low degrees of temperature.

Mr. HOWARD'S paper on the *Cinchona* was then read; and in the discussion that followed, Dr. Weddell said that he approved of the spelling of the name of the genus as adopted by Linnaeus. This

paper was illustrated by numerous specimens of *Cinchona* barks, of dried specimens of the plants, grown in India and collected by Mr. Markham, &c.

Professor Koch then made some remarks on the nomenclature of plants, &c., and the meeting adjourned.

The second meeting of the Botanical Congress was held on Thursday, in the Sheepshanks Gallery, which was well filled throughout the whole proceedings.

The first paper read was that of Dr. Moore, Glasnevin, on the climate, flora, and crops of Ireland; the next that of Professor Lecq. Mr. Howlett exhibited a model of an apparatus which should combine shading with night-covering of plant-houses, by means of one contrivance fitted to the roof. It was considered that for most purposes this contrivance would exclude the light too much.

Mr. Anderson's paper on Orchid culture excited an animated discussion, in which Professor Danbeny, Professor Reichenbach, Mr. Bateman, M. Alfred de Mornay, and Mr. Howlett took part, all advocating the justness of Mr. Anderson's views.

Mr. Krelage next addressed the meeting in German, on the nomenclature of plants.

Dr. Dickson, Edinburg, read some remarks on the leaves of *Sciadopitys* and *Phyllocladus*, which he considers in the light of leaf-like branches rather than as true leaves, a view in which Professor Caspary did not fully coincide.

Professor De Candolle exhibited a measure, on a long strip of paper, of the trunk of one of the gigantic *Sequoias* of California. The enormous dimensions were well exemplified by the length of the strip, which extended well nigh from one side to the other of the room. The rate of growth was carefully noted by counting the annular rings.

Professor Reichenbach addressed the meeting in English on certain peculiarities of Orchid structure. In the course of the discussion that ensued on this subject, Mr. Bateman said that he had seen a branched spike of *Odontoglossum grande*, and Dr. Masters said he had also met with a similar case in *Ophrys ararifera*.

Professor Morren, of Liège, treated at some length on the influence of coal gas on plants, and detailed his experiments on this point.

Mr. W. G. Smith then stated his views as to the corona of *Narcissus*.

Several other communications were read, including one from M. André, Paris, and the President declared the Congress at an end: on which Mr. Bennett proposed, Dr. Danbeny seconded, and Dr. Schulz Bipontinus supported, a cordial vote of thanks to the President.

THE CONVERSAZIONE.

The Conversazione on the evening of the 23rd was held in the Raphael Room at the South Kensington Museum. There was a brilliant attendance.

M. DE CANDOLLE'S ADDRESS TO THE CONGRESS.

In order to derive the full advantage from a meeting of so many lovers of science, horticulturists and botanists, brought together from all parts of Europe, it is necessary that the common object for which they have met should be perfectly understood.

It devolves on me, who am called upon to preside (an honour of which I feel myself unworthy), to point out the bond which unites us, and of which, perhaps, you have at present but a vague, and, so to speak, an intuitive perception.

In my opinion, we are not here merely as amateurs to satisfy our curiosity. The prof of which is, we are here assembled to listen to discussions, instead of wandering about the fairy-like garden of the Exhibition. Evidently we seek something more than a mere show, and that something is, in my opinion, instruction. It is not sufficient for horticulturists merely to see—they must also study and reflect. Neither is it sufficient for botanists to observe details minutely; they must also see the plants on a large scale, and in grouped masses. The connection of Practice with Theory, and of Art with Science, is acknowledged to be indispensable; and in accordance with this prevalent opinion we here affirm, by our presence in this room, the necessary union of Botany and Horticulture. The aim of my brief observations will be to call to mind how they aid each other, and to show how much more they might do so. If I am not mistaken, it will follow from facts to which I shall allude, that our united efforts, scientific or practical, modest though they appear, contribute to increase the well-being of man, in all conditions and in all countries.

FIRSTLY.—THE ADVANTAGES OF HORTICULTURE TO BOTANY.

Let us first mention the services that horticulture renders, or may render, to botany. Without being myself a horticulturist, I affirm or recognise them willingly, the advancement of Science rendering it necessary to have recourse to all its collateral branches.

We no longer live in those times of illusion when botanists merely occupied themselves with European plants, or with a few from the East, and, from a spirit of caution rather than from ignorance, pictured to themselves all distant countries as possessing much the same general vegetation, with a few uncommon or exceptional species. A century of discovery has made known the extreme variety in the Floras, the restricted limits of many species, and the complicated entanglement of their geographical distribution. To see all the different forms of vegetation of the world, one would realise in a degree the

history of the Wandering Jew; besides, with this constant travelling, where would be the opportunities for that reflection or study which create true science?

The traveller is too much exhausted in warm countries, too distracted in those temperate regions favourable to active life, and his faculties are too much benumbed in the colder regions, to enable him to devote himself to minute researches with the lens or the microscope, or even to sketch or properly describe that which he has gathered. He sees, in passing, a crowd of things, but he can scarcely ever stop to enter into details, especially of those that come in rapid succession. Rarely can he see the fruit and flower of a species at the same time, and it is quite impossible for him to study their complete development during the whole year. The notes taken by the most intelligent naturalist are so affected by these fatal circumstances, that it is seldom they add anything to that which a dried specimen can teach the sedentary botanist.

It is horticulture, then, which brings before us a multitude of exotic plants in a condition best adapted for study. Thanks to the variety of species it accumulates and successfully cultivates, the botanist can investigate the most difficult questions, and pursue his researches in families whose genera are not indigenous in Europe. In the herbarium, more minute observations can be made than is generally supposed; nevertheless, for certain researches, it is absolutely necessary to have the living plant, particularly for those relating to relative disposition, the origin and development of the several organs, as well as for studying the various phenomena of fertilisation, the movements and direction of the stem, leaves, and parts of the flowers. Horticulture has done much to advance the progress of physiological botany, but it still has much to do. The most remarkable experiments of physiologists—viz., those of Hales, Duhamel, Knight—have been made in gardens. Also, the long series of experiments of the younger Gaertner, and, more recently, of M. Naudin, on hybridisation, which relate to the cardinal subject of the species. As much may be said of the numerous trials which are made, in horticultural establishments, to obtain new races or varieties. These have a great scientific importance, and it is undoubtedly the horticulturists who are the teachers of botanists on these subjects.

It appears to me, however, that gardens can be made still more useful in carrying out physiological researches. For instance: there is much yet to be learnt on the mode of action of heat, light, and electricity upon vegetation. I pointed out many of these deficiencies in 1855, in my "Géographie Botanique Raisonnée." Ten years later, Mr. Julius Sachs, in his recently published and valuable work on physiological botany, points out much the same deficiencies, notwithstanding that some progress has been made in these matters. The evil consists in this, that when it is desired to observe the action of temperature, either fixed or varied, mean or extreme, or the effect of light, it is exceedingly difficult, and sometimes impossible, when observations are made in the usual manner, to eliminate the effects of the constant variations of heat and light. In the laboratory it is possible to operate under more exactly defined conditions, but they are rarely sufficiently persistent; and the observer is led into error by growing plants in too contracted a space, either in tubes or bell-glasses. This last objection is apparent when it is wished to ascertain the influence of the gases diffused in the atmosphere around plants, or that of the plants themselves upon the atmosphere.

Place plants under a receiver, they are no longer in a natural condition; leave them in the open air, and the winds and currents, produced at each moment of the day by the temperature, disperse the gaseous bodies in the atmosphere. Every one is aware of the numerous discussions concerning the more or less pernicious influence of the gases given off from certain manufactures. The ruin now of a manufacturer, now of a horticulturist, may result from the declaration of an expert; hence, it is incumbent on scientific men not to pronounce on these delicate questions without substantial proof.

With a view to these researches, of which I merely point out the general nature, but which are immensely varied in details, I lately put this question:—"Could not experimental greenhouses be built, in which the temperature might be regulated for a prolonged time, and be either fixed, constant, or variable, according to the wish of the observer?" My question passed unnoticed in a voluminous work where, in truth, it was but an accessory. I renew it now in the presence of an assembly admirably qualified to solve it. I should like, were it possible, to have a greenhouse placed in some large horticultural establishment or botanic garden, under the direction of some ingenious and accurate physiologist, and adapted to experiments on vegetable physiology; and this is, within a little, my idea of such a construction:

The building should be sheltered from all external variations of temperature; to effect which, I imagine it should be in a great measure below the level of the ground. I would have it built of thick brickwork, in the form of a vault. The upper convexity, which would rise above the ground, should have two openings—one exposed to the south, the other to the north—in order to receive the direct rays of the sun or diffused light. These apertures should each be closed by two very transparent glass windows, hermetically fixed. Besides which, there should be, on the outside, means of

* Pages 46, 49, 57, and 1346.

+ "Handbuch der experimental-physiologie der pflanzen," 1 vol. in 8vo. Leipzig, 1865.

† "Géographie Botanique," 1855, pages 49 and 1346.

excluding the light, in order to obtain complete darkness, and to diminish the influence of the variations of temperature when light was not required. By sinking it in the ground, by the thickness of its walls, and by the covering of its exterior surfaces with straw, mats, &c., the same fixed degree of temperature could be obtained as in a cellar. The vaulted building should have an underground communication with a chamber containing the heating and the electrical apparatus. The entrance into the experimental hot-house should be through a passage closed by a series of successive doors. The temperature should be regulated by metallic conductors, heated or cooled at a distance. Engineers have already devised means by which the temperature of a room, acting on a valve, regulates the entry or exit of a certain amount of air, so that the heat regulates itself.* Use could be made of such an apparatus when necessary.

Obviously, with a hothouse thus constructed, the growth of plants could be followed from their germination to the ripening of their seeds, under the influence of a temperature and an amount of light perfectly definite in intensity. It could then be ascertained how heat acts during the successive phases from sowing to germination, from germination to flowering, and from this on to the ripening of the seed. For different species various curves could be constructed to express the action of heat on each function, and of which there are already some in illustration of the most simple phenomena, such as germination,† the growth of stems, and the course of the sap in the interior of certain cells.‡ We should be able to fix a great number of those minima and maxima of temperature which limit physiological phenomena. Indeed, a question more complicated might be investigated, towards the solution of which science has already made some advances—namely, that of the action of variable temperature; and it might be seen, if, as appears to be the case, these temperatures are sometimes beneficial, at other times injurious, according to the species, the function investigated, and the range of temperature. The action of light on vegetation has given rise to the most ingenious experiments. Unfortunately, these experiments have sometimes ended in contradictory and uncertain results. The best ascertained facts are, the importance of sunlight for the development of the green colouring matter, the decomposition of carbonic acid gas by the foliage, and certain phenomena relating to the direction or position of stems and leaves. There remains much yet to learn upon the effect of diffused light, the combination of time and light, and the relative importance of light and heat. Does a prolonged light of several days or weeks, such as occurs in the Polar Regions, produce an exhalation of oxygen, and in the fixing of green matter, as much effect as the light distributed from twelve to twelve hours, as at the Equator? No one knows. In this case, as for temperature, curves should be constructed, showing the increasing or diminishing action of light on the performance of each function; and as the electric light resembles that of the sun, we could in our experimental hothouse submit vegetation to a continued light.§

A building such as I propose would allow of light being passed through coloured glasses or coloured solutions, and so prove the effect of the different visible or invisible rays which enter into the composition of sunlight. For the sake of exactness nothing is superior to the decomposition of the luminous rays by a prism, and the fixing the rays by means of a heliostat. Nevertheless, a judicious selection of colouring matters, and a logical method of performing our experiments, will lead to good results. I will give as proof, that the recent most careful experiments concerning the action of various rays upon the production of oxygen by leaves, and upon the production of the green colouring matter, have only confirmed the discoveries made in 1836, without either prism or heliostat, by Professor Daubeny, from which it appears that the most luminous rays have the most power, next to them the hottest rays, and lastly those called chemical.

Dr. Gardner in 1843, Mr. Draper immediately after, and Dr. C. M. Guillemin in 1857,¶ corroborated by means of the prism and

* See the electric apparatus of M. Carbonnier, exhibited at Chiswick in 1857, figured in the "Flora des Serres et Jardins," vol. xii. Miscell. p. 184.
 † Germination under different degrees of constant heat, by Alph. de Candolle, in the "Bibliothèque Universelle de Genève" (Archives des Sciences, November, 1865).

‡ If the curves have not been constructed, the data for their construction are, at least, dispersed throughout our books. I will cite, for instance, the growth of a scape of *Dasyllion*, as observed by M. Ed. Morren ("Belgique Horticole," 1865, p. 322). The figures there given are not favourable to the accepted notion, that the growth of tissues is more active by night than by day.

§ The apparatus which produces the most persistent and vivid light is the magneto-electric machine, based on the development of induction by magnetism, as discovered by the illustrious Faraday. The galvanic pile is replaced by a steam-engine of low power, which sets in motion a wheel furnished with magnets ("Bibl. Univ. de Genève, Archives Scientif., 1861, v. 10, p. 160."). The working of this machine is inexpensive; but unfortunately, the magnets are very costly. This system has already been applied to two lighthouses—that at the South Foreland, and to that of the "Société l'Alliance," at Havre—in consequence of the experiments of M. E. Becquerel and Treca.

¶ Daubeny, "Philos. Trans.," 1836, part 1.

¶ Dr. Gardner, "Edinb. Phil. Mag.," 1844, extract in French in "La Biblioth. Univ. de Genève," February, 1844; Draper, "Edinb. Phil. Mag.," September, 1844, extract ib., 1844, vol. 54; Guillemin (C. M.), "Ann. Sc. Nat.," 1857, ser. 4, vol. 7, p. 154.

the heliostat the discovery of Dr. Daubeny, which negated the opinions prevalent since the time of Senebier and Tessier, and which were the result of erroneous* experiments. It was difficult to believe that the most refrangible rays—violet for instance, which acts the most on metallic bodies—as in photometrical operations, should be precisely those which have least effect in decomposing the carbonic acid gas in plants, and have the least effect over the green matter in leaves. Notwithstanding the confirmation of all the experiments made by Dr. Daubeny, when repeated by numerous physicists and by more accurate methods, the old opinions, appearing more probable, still influenced many minds,† till Mr. Julius Sachs, in a series of very important experiments again affirmed the truth.‡ It is really the yellow and orange rays that have the most power, and the blue and violet rays the least, in the phenomena of vegetable chemistry; contrary to that which occurs in mineral chemistry, at least in the case of chloride of silver. The least refrangible rays, such as orange and yellow, have also the twofold and contrary property, such as pertains also to white light, and which produces the green colouring matter of leaves or bleaches them, according to its intensity. It is these, also, which change the colouring matter of flowers when it has been dissolved in water or alcohol.§ Those rays called chemical, such as violet, and the invisible rays beyond violet, according to recent experiments, confirmatory of those of ancient authors—those of Sebastian Poggoli, in 1817, and of C. M. Guillemin—have but one single well-ascertained effect, that of favouring the heading of the stem towards the quarter from which they come more decidedly than do other rays; yet that is an effect perhaps more negative than positive, if the flexure proceeds, as many still believe, from what is going on on the side least exposed to the light.¶

The effect upon vegetation of the non-visible calorific rays at the other extremity of the spectrum have been but little studied. According to the experiments we have on this subject, they would appear to have but little power over any of the functions; but it would be worth while to investigate further the calorific regions of the spectrum by employing Dr. Tyndall's process—that is, by means of iodine dissolved in bisulphide of carbon, which permits no trace of visible light to pass.

How interesting it would be to make all these laboratory experiments on a large scale! Instead of looking into small cases, or into a small apparatus held in the hand, and in which the plants cannot be well seen, the observer would himself be inside the apparatus, and could arrange the plants as desired. He might observe several species at the same time, plants of all habits, climbing plants, sensitive plants, those with coloured foliage, as well as ordinary plants. The experiment might be prolonged as long as desirable, and, probably, unlooked-for results would occur as to the form, or colour of the organs, particularly of the leaves.

Permit me to recall on this subject an experiment made in 1853 by Professor Von Martins.** It will interest horticulturists now that plants with coloured foliage are becoming more and more fashionable. M. Von Martins placed some plants of *Amaranthus tricolor* for two months under glasses of various colours. Under the yellow glass the varied tints of the leaves were all preserved. The red glass rather impeded the development of the leaves, and produced, at the base of the limb, yellow instead of green; in the middle of the upper surface, yellow instead of reddish-brown, and below, a red spot instead of purplish-red. With the blue glasses, which allowed some green and yellow to pass, that which was red or yellow in the leaf had spread, so that there only remained a green border or edge. Under the nearly pure violet glasses, the foliage became almost uniformly green. Thus, by means of coloured glasses, provided they are not yellow, horticulturists may hope to obtain at least temporary effects, as to the colouring of variegated foliage.

The action of electricity on vegetation is so doubtful, so difficult to experiment upon, that I dare hardly mention it; but it can easily be understood how a building constructed as proposed might facilitate ex-

* Senebier, "Mém. Phys. et Chim.," 2, p. 69; Tessier, *Mém. Acad. Sc.*, 1783; Gilby "Ann. de Chimie," 1821, v. 17; Saccow, "Commentatio de lucis effectibus chemiis," in, 4to, Jena, 1828, p. 61; Zantedeschi, cited by Dutrochet, *Comp. Rend. Acad. Sc.* 1844, sem. 1, p. 853.

† As a proof of the persistence of the old opinion, I will quote a phrase of Professor Tyndall's in his most clear and interesting treatise "On Radiation," (London, 1865), p. 6:—"In consequence of their chemical energy, these ultra-violet rays are of the utmost importance to the organic world." I do not know whether the author had in view the influence of the chemical rays over the animal kingdom; but, according to certain passages of Mr. Sachs, I doubt if they have more power over animals than they have over plants; but Professor Tyndall did not concern himself with these questions, he was content to explain admirably the physical nature of the various rays.

‡ The researches of Mr. Sachs first appeared in the "Botanische Zeitung;" they are collected and condensed in the remarkable volume called "Handbuch der Physiologischen Botanik," vol. 4, Leipzig, 1855, p. 1 to 46.

§ Sir John Herschell, "Edinb. Philos. Journ.," January, 1843.

¶ S. Poggoli, "Opuscoli Scientifici," quoted by Dutrochet, "Compt. Rend. Acad. Sc.," 1844, sem. 1, p. 850.

** The rather confused and questionable explanations, founded on the notions of Dutrochet, of the existence of a deoxidising power on the brightest side, clash with the fact that the blue, indigo, and violet rays, the least powerful for deoxidising tissues, are the most powerful in causing them to bend.

** "Gelehrte Anzeige," München, 2 Dec., 1853.

periments on this subject. Respecting the action of plants on the surrounding air, and the influence of a certain composition of the atmosphere upon vegetation, there would be by these means a large field open for experiments. Nothing would be easier than to create in the experimental hot-house an atmosphere charged with noxious gas, and to ascertain the exact degree of its action by day and by night. An atmosphere of carbonic acid gas might also be created, such as is supposed to have existed in the coal period. Then it might be seen to what extent our present vegetation would take an excess of carbon from the air, and if its general existence were inconvenienced by it. Then might be ascertained what tribes of plants could bear this condition, and what other families could not have existed, supposing the air had formerly had a very large proportion of carbonic acid gas.

Until horticulture can supply physiology with such convenient means of experiment, it, in the meantime, advances descriptive botany by the valuable publications it issues. The greater part of the old works with plates, such as "Hortus Eystettensis," "Hortus Elthamensis," &c.; also those of Ventenat, Cels, Redouté, &c.; the "Salicetum" and "Pinctum" of the Duke of Bedford; and more recently the "Rhododendrons of the Himalaya," by Dr. Hooker; the works of Bateman, Pescatore, Reichenbach, on Orchids; and many others I could name, would never have been published, had there not been rich amateurs either to edit or to buy them.

It is horticulture that has given us the longest series of illustrated journals that have ever been published; and here I must do justice especially to the English horticulturists. No doubt the science of our time requires a larger amount of analytical details than is contained in the plates of the "Botanical Magazine," "Botanical Register," "Andrews' Repository," "Loddiges' Botanical Cabinet," "Sweet's British Flower Garden," "Paxton's Magazine and Flower Garden," and other English journals; but what a number of forms are thus fixed by the engravings in these books, and what a fund of valuable documents for consultation they afford! One cannot fail to admire the "Botanical Magazine," commenced in 1793, continued from month to month with an exemplary regularity, and which is now at its 5,580th plate. Not only has it always represented rare and new species, but it has ever been conducted on a simple and uniform plan, which renders it convenient to consult.

The series of plates is unique from the very beginning. Each plate has its number, and each article of letter-press refers only to one plate, by which means the quotations from the work are rendered brief and clear. Many editors have not understood the advantage of this simple arrangement. They have varied their titles, their series, their pagings; they have affixed to their plates numbers, then letters, then nothing at all; the end of which is (and this ought to serve as a warning for the future), that the more they have altered and complicated the form of their journals, the shorter time have they lasted.

How is it that these purely bibliographical details cause in us such sad recollections? Of the men just mentioned, who have rendered such eminent service to botany and horticulture, England has lost three during the year 1865—Sir Joseph Paxton, Dr. Lindley, and Sir William Jackson Hooker.* I should certainly fail in what is expected of me if I did not express, in the name of the foreigners attending this meeting, our deep regret at such serious losses. We know them all by their writings, and many amongst us have known personally the distinguished men I have mentioned. Their names follow us at each step in this the scene of their labours. If we admire the boldness of construction of the iron domes that characterise modern buildings, we think of the Crystal Palace, of Chatsworth, and of the humble gardener who became a great architect. If we visit the beautiful establishment at Kew, we see everywhere around us proofs of the indefatigable activity of Sir William Hooker. Lastly, if we ask the origin of the garden of the Royal Horticultural Society at Kensington, we are told it is only a development of that at Chiswick, where Lindley stood pre-eminently by his knowledge and his energy; and of that Society where botanists of my age found in their youth such valuable encouragement in their studies.

The names of Sir William Hooker and of Dr. Lindley, thanks to their special works, will ever remain distinguished in science. These two botanists have, moreover, been directors of horticultural journals, and of great horticultural establishments, and since their influence has been so fully acknowledged by practical men, I shall have little trouble in showing that science is as useful to horticulturists, as horticulture is to botanists—and this will form the second part of my discourse.

SECONDLY.—THE ADVANTAGE OF BOTANY TO HORTICULTURE.

The principles of vegetable physiology are what horticulturists and agriculturists usually study in books on botany. They do not always find direct answers to their questions; but they can draw from them certain rules, certain ways of experimentalising and reasoning, which saves them from falling into many errors. Should some ridiculous idea be promulgated by some ignoramus or charlatan, it is by an appeal to the general rules of physiology that a practical man may at once reject them, or at least, hold them in distrust. On the contrary, in-

novations, if in harmony with the general principles of the science, may be, and I will even say, ought to be readily accepted.

Do not let us put too much faith in the lucky results of experiments made absolutely by chance. It is with some of these experiments as with dreams and presentiments—if they come true once in a thousand times they are talked about, otherwise they are passed over and forgotten. Besides, it must be said, men nearly always are guided by theories; but the theories of the ignorant are often absurd and without foundation, whilst those of educated men are based on probabilities or on an accumulation of facts.

Conjointly with physiology, botanical geography shows the distribution of plants all over the globe, their struggle with the elements, their migrations, and already raises a portion of the veil which covers the obscurity of their origin. All this ought to offer a real interest to horticulturists. We are beginning to have the power of expressing in figures the effect of each climate upon vegetation; consequently, the possibility of a given species enduring the mean or extreme climatal conditions of that country to which it is desired to introduce it. Already we can show, in the clearest manner, the analogy between the vegetation and climate of certain regions widely separated the one from the other, and point out in which cases new attempts at cultivation should be tried or where they should be discouraged. A celebrated geologist was able to say beforehand, There is gold in such a part of New Holland; and gold was found there. We can also say, the Olive tree and the Cork Oak will succeed in Anstralia; the eastern and temperate region of the United States is favourable to the growth of Chinese plants, more particularly to that of tea; and we can assert that that part of America included between San Francisco and the Oregon territory will, one day, supply wines as varied and as excellent as those European ones produced between Portugal and the Rhine.

It is a singular fact that the two principal beverages of the civilised world, wine and tea, which produce similar stimulating effects, but which to a certain extent are the substitutes one for the other in different countries, present also in the mode of cultivating them the most marked resemblances and differences. The Vine and the Tea-plant succeed best on stony, barren hill sides, of which they sometimes increase the value a hundredfold. According to the exposure, the soil, the cultivation and manner of preparing the produce, wine and tea are obtained of unquestionable excellence; whilst the neighbouring crops, but a short distance off, may be more or less ordinary in quality. The two shrubs require a temperate climate, but the Vine needs heat and no rain during summer, whilst the Tea-plant requires rain and but little summer heat; the result of which is, that these two species are almost geographically incompatible. Vine-growing countries will never produce tea, and vice versa.

But, you will say, these examples belong rather to agriculture, and concern neither botany nor gardens. I maintain the contrary. It is science, in the present day, which points out what plants to cultivate, and into what countries to introduce them. Horticulture makes the trial with infinite pains. If successful, the young plants are submitted to the less careful treatment of agriculture. Before the happy introduction of Cinchona into British and Dutch India could be effected, botanists were required to collect, distinguish, and carefully describe the various species of American Cinchona; horticulturists were then called on to make cuttings, gather the seeds, raise the young plants, transport and establish them in another part of the world; and so at last they were passed over to the care of the agriculturist. The Coffee plant did not spread gradually from Arabia to India, from India to Java; nor was it the American colonists who brought it from its original country to their *fazendas* or *haciendas*. The shrub was first described by botanists, and was afterwards introduced by the Dutch into a garden at Batavia; from thence it was taken to the Botanical Garden at Amsterdam, from whence a specimen was sent to the king of France in 1714. De Clieu, a naval officer, transplanted it from the garden at Paris to the French colonies in America. A multitude of such instances might be named. In the present day science has progressed, practical men avail themselves of it, governments and nations have abandoned those mistaken ideas in accordance with which it was supposed that a cultivation advantageous to one country was injurious to others. Hence we may hope to see, before long, useful species planted in all regions where they can thrive, to the great advantage of mankind in general.

One of the most evident effects of science has been to create in the horticultural public a taste for varied and rare forms. Formerly in gardens there were only to be found certain kinds of plants which dated back to the time of the Crusades, or even of the Romans. The discovery of the New World did not produce a change in proportion to its importance; perhaps because horticulturists did not travel enough, or acquaint themselves with those countries whose species were most suitable for cultivation in Europe. Botanists, fortunately, were more ambitious. Their collectors were numerous and daring. They enriched their herbaria with an infinitude of new forms, and published works upon exotic plants, such as those of Hernandez, Rumphius, Sloane, &c. The immense variety in the forms of plants was thenceforth recognised, and in point of taste the elegant simplicity of the primitive flowers was able to vie with the gaudiness of the double ones. Then ceased the reign of Tulips and Paeonies in flower-gardens. Curiosity, that great incentive to all science, having penetrated horticulture, the change in gardens became rapid. Instead of a few hundred species such as were cultivated at the commencement of the last century, there

* Since these lines were in the printer's hand British science has sustained a severe loss in the death of the truly amiable and learned Professor W. Harvey, of Dublin, so well known by his works on Algae, and on the Botany of South Africa. I cannot refrain from expressing our sense of this great bereavement.

are now 20,000 or 30,000 to be found in most of the present catalogues. The single family of Orchids has probably more different representatives in our hothouses than was the case with all the families of plants put together a hundred years ago. Fashion, united to the present curiosity of amateurs, causes, from time to time, old plants to be abandoned for new ones; and thus the entire vegetable kingdom will ultimately pass under the observation of civilised man.

What would horticulturists do, amidst this invasion of thousands of species, had not botanists devised convenient plans of classification and nomenclature? The families, genera, and species, have all been arranged in books, just as the districts, streets, and numbers of the houses are in our great capitals—with this superiority of method, that the form of the objects indicates their place—as if, in looking at a house in a town, one could discover, at a glance, to what street and to what quarter it belonged. The plan of giving a single name to each species, besides its generic name, together with the prohibition of changing names without due reason, and of giving the same appellation to two different species, or to two genera, far exceeds our plan of distinguishing individuals. How much it would simplify our intercourse with men, and facilitate our inquiries, if, in the whole world, the members of one family only bore the same name, and if each individual had but one christian name, differing from those of the other members of his family. Such is, nevertheless, the admirable plan of nomenclature that science has provided for horticulturists, and which they cannot too much appreciate and respect.*

THIRDLY.—THE BENEFICIAL EFFECTS OF THE ASSOCIATION OF BOTANY WITH HORTICULTURE.

The pursuit of horticulture demands books and herbaria, as that of scientific botany requires cultivated, living plants. Thence the necessity, which is more and more recognised, of bringing together the materials for comparison in the same town, the same establishment, and even under the same administration, organised so as to facilitate the use of them. How many institutions in Europe, either private or public, would be benefited by this arrangement! How many towns and countries are now deficient—some in libraries, some in herbaria, some in respect to horticulture. Professional men proffer their complaint; let us hope that public opinion may end by listening to them.

The bringing together the means of study, I have said, is desirable. Not less so is the interchange of ideas and impressions, both of botanists and horticulturists. Each of these classes must clearly have distinct characteristics; but the one should be influenced by the other. By these means, some too-retiring dispositions may be brought out, and certain dormant powers developed. Horticulture, for instance, has a commercial tendency which may be carried too far. Charlatanism may slide in amongst flowers. Botany, on the contrary, is a science, and consequently rests on the investigation of pure and simple truth. A horticulturist who allows himself to be influenced by a scientific spirit, necessarily frees himself from over-selfish tendencies. Natural history, on its side, by reason of the perfection of its method, its nomenclature and its minute observations, has something technical and dry about it, which contrasts with the grandeur of nature and with the sentiment of art. It is for horticulture, combining, as it does, the planning and the decorations of gardens, to develop the aesthetic faculties of the savant, as of the world in general. A lovely flower, beautiful trees, a splendid floral exhibition, excite a sort of admiration, and even enthusiasm, similar to the effects produced by music or painting.

The powers of the German composers of modern days, and those of the Italian painters of the sixteenth century, are justly extolled; but may it not also be said that in point of art they are equalled in their way by the beautiful parks of old England? The feeling of harmony in form and colour, is it not also studied in them? The effect of contrast, is it not skilfully managed? The gradual transition from architectural to natural beauties, is it not treated in an admirable manner? Yes; decidedly the English landscape gardeners are poets; they have drawn from the same sources of inspiration as the most national writers of their country, and that source is the appreciation, so universal in England, of the beautiful, in an aspect of nature which is elegant and attractive, though somewhat severe.

Thus, gentlemen, for the development of our talents, as well as for our actual benefit, Art and Science keep pace together. Let us rejoice over their union, rendered conspicuous to-day by this congress of botanists, held in connection with a great floral exhibition; and after

* Two years ago I made a request to the Fédération des Sociétés d'Horticulture Belges, which appears to have been favourably received, and it may not be useless to repeat it here. It consisted in begging the horticulturists to obtain new varieties not to give them botanical names, with a Latin designation, but merely arbitrary names of quite a different nature, in order to avoid confusion and useless researches in books. For example, if they called a *Calceolaria* *Sebastopol*, or *Triomphe de Gand*, every one would understand it meant a garden variety; but if they named it *Lindleyi*, or *mirabilis*, the student would take it to be a botanical species, and would search for it in scientific works, or in the Floras of Chili; and botanists, happening perhaps to mistake it, would add it to the end of the genus in their books as a species imperfectly known. The more horticultural names differ from Latin ones, the better it is, unless they can be appended to the scientific nomenclature; as when we say *Brassica campestris olerifera*, instead of, shortly, *Colza*.

† The Botanical Gardens at Kew afford a fine example of what should be done, either on a large or a more modest scale, in many towns where the means of study are yet inconvenient or incomplete.

these general observations—perhaps rather too protracted—let us enter upon the consideration of those more truly scientific subjects, in which many among you are no doubt disposed to take part.

THE BANQUET AT GUILDHALL.

On Tuesday evening a grand banquet took place at the Guildhall, at which the Right Hon. the Lord Mayor presided. Upwards of 550 were present, and amongst them were Viscount Powerscourt; Sir Broke Middleton, Bart.; Right Hon. R. C. Nisbet Hamilton; M. A. De Candolle, of Geneva; Professor Koch, of Berlin; Professor Reichenbach, of Hamburg; Professor Caspary, of Königsberg; Professor Morren, of Liège; M. Schulz Bipontinus, of Deidesheim; M. Meissner, of Basle; M. Weddel, of Poitiers; M. Van Houtte, of Ghent; M. A. Verschaffelt, of Ghent; M. Linden, of Brussels; Sir Wentworth Dilke, M.P.; Dr. Hogg, Dr. Maxwell Masters, Mr. Kelk, M.P.; Mr. J. Clutton, Mr. Sheriff Gibbons, Mr. Alderman Besley, Mr. Pender, Mr. E. A. Bowring, C.B.; Mr. Micholls, Mr. Samuel Morley, Mr. George Godwin, F.R.S.; Mr. J. J. Blundy, Mr. W. H. Dixon; Mr. G. W. Johnson; Mr. T. Moore; Messrs. Veitch, Lee Standish, Bull, Williams, Paul, Waterer, Low, Wendland, Fortune, and Captain Walker.

Grace having been said, and the "loving cup" sent round.

The Lord Mayor gave the first toast, "Her Majesty the Queen." He said: "On the throne of this peaceful and constitutional country there sits a Royal lady, who reigns not alone over her subjects, but in the hearts of her people. It is amongst the happiest of our customs, that upon these festive occasions we drink to the health of Her Majesty, wishing that her reign may be a long and happy one, and that her people may be prosperous, contented, and free."

The Lord Mayor then proposed "The Army, Navy, and Volunteers." He remarked that the bravery and exploits of the Army and Navy were matters of history. No one could contemplate what was passing in neighbouring countries without the deepest emotion. There was not a heart that did not sympathise, not a tongue that did not utter the hope that the miseries and horrors of war might be averted. This was the earnest prayer of every Englishman, and he trusted that it might never be uttered in vain.

Admiral Sir GEORGE BROKE MIDDLETON, Bart., in returning thanks made some remarks on the recent events in South America. Though on such an occasion as the present he was unwilling to introduce a subject which would direct the thoughts of those who listened to him to the horrors of war, yet the news that had recently been received from a distant part of the world had cast a shadow over the profession to which he had the honour to belong; and as that profession had been most ungenerously attacked during the last few days, he felt himself bound to say a few words in its defence. He alluded to what had been said in reference to the bombardment of Valparaiso. He had the honour to call Admiral Denman his friend, and he knew him to be one of the most high-spirited and gallant officers in the service.

The Lord Mayor next gave "The House of Lords and the House of Commons." There never was a period in the history of this country he said, when there was a greater sympathy than existed at present between the House of Lords and the people; and with regard to the House of Commons, he thought he might safely say that the intelligence and independence of this great country were fairly represented in that House.

Viscount POWERSCOURT after having made a few remarks on the present position of matters in the Houses of Parliament, said that he could not resume his seat without congratulating the Committee of the International Horticultural Exhibition on the very beautiful and highly successful Show they had witnessed that morning—an Exhibition that must have afforded the greatest pleasure to all who took the least delight in horticulture.

Sir C. W. DILKE, Bart., the Chairman of the Executive Committee, proposed "The health of the foreign visitors and the President of the Botanical Congress." This he said had been the most remarkable horticultural Exhibition that had ever been held, and he was happy to add that it had been most successful in the number of visitors it had attracted. As a whole it was an Exhibition that had never been equalled, and he doubted whether it could ever be surpassed.

The toast was received with loud cheers.

Professor DE CANDOLLE, in responding, said:—"The words of welcome which we have just heard, and the fact that my name has been mentioned in so kind a manner, make it incumbent on me to thank you in the name of the strangers present. You have done them great honour by inviting them to this banquet, and, indeed, since their arrival they have not ceased to receive, in private as well as in public, a welcome of which they cannot but be proud, and which will leave many pleasant remembrances in their minds. This morning the Prince and Princess of Wales and the Princesses of the Royal Family condescended to express their regret that they could not accept the splendid hospitality over which the chief of the illustrious city of London presides; and the hon. baronet who has assisted in all these preparations with a zeal which has been crowned with success, has been kind enough to propose the toast. The only persons who are to be pitied in all this are those botanists and horticulturists who may have desired to come to London, and who have been prevented from doing so either by their public duties or by the unfortunate state of affairs now existing on the Continent. But let us put on one side these personal considerations, and let us rather congratulate ourselves

on the prosperous state of the sciences and their applications, and particularly in the progress of Horticulture, of which this International gathering furnishes a proof. Our age is in this respect a great age. Horticulture has been pushed to an extraordinary degree of perfection, and the natural sciences have also advanced. What science wants, above all, is liberty—not only political liberty, which is to a certain extent very necessary; but, above all, that liberty which is accorded to each individual by public opinion. We have seen nations and ages where, under an absolute monarchy, there has been a great deal of liberty of thought; and *vice versa*, free countries in which public opinion has exercised an actual tyranny over individuals. Those who seek for scientific truth require to be protected by the public, even more than by a free political system. All the world ought to know the advantage of toleration of opinion, and public reprehension ought only to fall on bad faith. Science prospers when national institutions and public opinion allow it freedom. At the present time horticulture flourishes more particularly in the West of Europe, in England, Belgium, and Holland; and in some cities, such as Paris, Berlin, and Hamburgh. Evidently an climate offering neither extremes of cold, nor heat, nor dryness, is favourable to its development. Evidently, also, the intelligent and painstaking peoples of these western lands naturally give themselves to the minute details of cultivation; but there is still a condition which overrules all. Horticulture, carried to a certain extent, is a luxury. It supposes riches, and there is no extent of country more generally rich than Western Europe on either side of the Channel. Will International Horticultural Exhibitions spring up in the future on that arena? We must hope for it as well as for a more important object—peace, for war devours men as well as capital. Imagine to yourself (said M. De Candolle), what is the cost of the millions of soldiers at the present day massed together on Continental Europe. You will find, perhaps, that with their pay for a single day we could construct a conservatory reaching from Paris to Berlin. And here is a piece of advice which may be given beforehand to the horticulturists of the east and south of the Continent—not to make an insignificant imitation of English, Belgian, or Dutch culture, but rather to create a new system of horticulture as different from these as possible, suitable to their particular climates—a system of horticulture having for its foundation the plants of Asia, Africa, and Australia, capable of supporting heat, cold, and dryness. In making efforts in this direction they will do something new and remarkable, and the horticulturists of the west will go to see the exhibitions of eastern and middle Europe with the same pleasure that they visit in the present day their own exhibitions." M. De Candolle concluded by again thanking the assembly for the kindness which they had shown to the foreign visitors.

The Right Hon. C. NISBET HAMILTON, in proposing "Success to the International Horticultural Exhibition and Botanical Congress," said: "He had no doubt that those who had witnessed the Exhibition were highly gratified by what they had seen. For his own part he must confess, that although he had seen numerous exhibitions of flowers in many parts of the world, the present Exhibition surpassed them all. Lord Bacon had said, nearly three hundred years ago, 'God first planted a garden, which, indeed, is the purest of human pleasures; it is the greatest refreshment to the spirits of men, without which buildings and palaces are but gross handiwork.' This, it should be remembered, was an expression employed by one of our greatest philosophers. In England horticulture was pursued alike by the greatest and noblest, and the poorest and humblest in the land; and he believed that it had a tendency to elevate the mind. Although, he said, we are proud in this great country of our manufacturing and commercial prosperity, we are proud also that such a meeting as the present can be held under the presidency of the chief magistrate of the City of London. It was gratifying to observe the taste for floriculture that exists among the people, as is evidenced in many of the crowded lanes of the metropolis and other densely populated places, by the care that is taken of a solitary plant, such as a Geranium or a Fuchsia. Referring, again, to the Exhibition of the morning, he would say that Brussels and Amsterdam had had their International Exhibitions, and London had followed the example set by those places; and he hoped he might say without offence, that in this Show we had been enabled to surpass those that had gone before. He trusted that although this was the first Show of the kind that had taken place in London, it would not be the last."

Dr. Hogg briefly responded.

Sir C. W. DILKE proposed "The health of the Lord Mayor and the Corporation of the City of London."

The Lord Mayor said in reply: "My Lords, Ladies, and Gentlemen—Different men, according to their different humours, have formed various plans for bringing the whole human race under one head. A tyrant wished that all mankind might have one neck, that he might strangle it. A gallant bard grieved that 'fair womankind could not reserve their smiles for him alone; and I, by an inverse process of reasoning, would give my place to-night could I be blessed with a thousand warm and varied tongues wherewith to bid you, from 'heart to very heart,' one and all a sincere and earnest welcome. The gentlemen who honour us with their presence here to-night have invited us to view the most interesting, the most marvellous, and the most wonderful Exhibition the world has ever seen. I think I may call it the queen of exhibitions. The right honourable gentleman has told us that Lord Bacon says, 'The Almighty Father first planted a garden.' A garden is, and has been, the foundation of religion—of poetry—of all

that is brightest and holiest amongst men. What is there on earth that so much contributes to our delight, to our enjoyment, as a garden? A garden is health—a garden is wealth—a garden is happiness. What is more refreshing, more delightful than the sweet fruits of earth? What is more fragrant than the breath of flowers? It has been said that Nature, so fair and bounteous in herself, needs not the hand of man to train and cultivate her; but Nature in every shape requires cultivation. The insidious Peach, the cloistering Vine, the fragrant Myrrh, the Rose divine, abundantly illustrate the truth of this. In this age of great competitive and cosmopolitan industry our neighbours are doing with their flowers what we do with our sons—urge them to take honours at home, and send them to gain laurels abroad. On the part of this municipality, I beg to assure you that we hold out to you, one and all, the right hand of fellowship—that we recognise the great merits of art, of science, and of literature, and we look upon this Exhibition as one of the happy and peaceful triumphs of our time. May it flourish, not only for the present, and for our sakes, but may it flourish for the future."

Prof. Koczi proposed "The Executive Committee of the Horticultural Meeting," and Sir D. COOPER returned thanks.

Mr. C. DILKE having proposed "The Lady Mayoress and the Ladies," the Lord Mayor, in acknowledging the toast, said that the Lady Mayoress desired him to say that the sight she had seen that day was one of the most gratifying of her life.

During the evening the band of the Grenadier Guards, under the direction of Mr. D. Godfrey, played a choice selection of music in the gallery.

DEJEUNER AT MESSRS. VEITCH'S.

BEFORE commencing the formal business of the Congress on Wednesday, the foreign botanists and gardeners were invited by Mr. Veitch, the English horticulturist, to a magnificent *déjeuner* at the Exotic Nurseries, Chelsea. The foreign guests were met by a distinguished company of their English centres, and the occasion was one of much interest. Among the principal visitors were—Professor Lecoeq; Professor Triand, of Paris; Professor Koch, of Berlin; Professor Morren, of Liège; Dr. Reichenbach, of Hamburg; M. Barillet, Paris; M. Vilmorin, Paris; M. Pepin, delegated by the French Government; M. Sello, Potsdam; M. Nilsson, Naples; Baron Osy, Antwerp; M. Linden, Brussels; M. Van den Hecke, of M. Willink, Amsterdam; M. Krelage, Haarlem; Viscount Foreville; Sir Wentworth Dilke, Bart.; Sir D. Cooper, Bart.; Rev. Joshua Dix; Rev. Mr. Berkeley; J. McNab, Esq., Edinburgh; Dr. Moore, Dublin; Dr. Hogg; Dr. Masters; G. Eyles, Esq.; J. Liddell, Esq., &c. Mr. Veitch, senior, presided. Among the toasts drunk was one to "The Foreigners present." To this the representatives of France, Belgium, Holland, Germany, and Italy responded. Several of these gentlemen spoke in English, and expressed their admiration at the pre-eminence of British horticulture. Mr. J. G. Veitch, who has travelled in Japan, Australia, and other regions searching for new plants, many of which he has successfully introduced to cultivation, replying to some complimentary remarks of one of the foreign professors present, spoke in French. Sir Wentworth Dilke, as Chairman of the Executive Committee, returned thanks for the observations made complimentary to this country. The visitors inspected Messrs. Veitch's valuable collection of plants, the most notable of which, however, are now being exhibited at the Show. The whole occasion was marked by the most cordial feeling, and was a matter of much gratification to those present. Each guest, on leaving, entered his signature in a book, and received from Mr. Veitch his *carte-de-visite* as a souvenir.

DINNER AT ST. MARTIN'S HALL.

ON Thursday evening upwards of five hundred gentlemen sat down to dinner at St. Martin's Hall, Lord H. G. Lennox, M.P., presiding.

Among those present were Sir Wentworth Dilke, Bart., the Rev. Joshua Dix, Rev. S. R. Hole, Dr. Hogg, Mr. T. Moore, Mr. C. Edmonds, Messrs. Lee, &c.

On the removal of the cloth, the CHAIRMAN said the first toast on the present occasion was one which all Englishmen delighted to honour. For many years they had had the happiness of being under the most constitutional of Sovereigns, a Lady whose private life would bear comparison with that of any other in the land. These were great blessings, and would always secure that, wherever the toast was proposed, it would be received with enthusiasm. He was one of those who thought that, possessing such blessings, they could not do better than enumerate them on every possible occasion.

The CHAIRMAN next proposed that of the Prince of Wales, with that beautiful Danish Rose which had been transplanted to this country, and who, they trusted, might long flourish on British soil, and the other members of the Royal Family. Prince Alfred was a true British tar. He had seen him on board of ship in the Mediterranean, where he took all his watches and performed all the duties as the sons or brothers of those present would have done if they had been in that position. He trusted also that they would give an extra cheer for the Princess Helena, who was about to be married, but who, he was happy to say, was not about to leave England, but to remain here to be a solace to her widowed mother.

The CHAIRMAN next proposed "The Army, Navy, and Volunteers," associating with it the name of The Maceod of Maceod, who briefly returned thanks.

The CHAIRMAN said he must now crave the indulgence of the meeting while he proposed the toast of the evening. It was a toast which would naturally tax the powers of a chairman under any circumstances, for in itself it possessed an intrinsic interest to all present. He trusted that that interest would act as a cloak to cover the deficiencies of him in whose hands it had been placed. The toast, as placed in his hands, was "Success to the Promoters of the Horticultural Exhibition and the Botanical Congress." He himself was one of those promoters, and it would be indecent to propose success to himself. He would, therefore, with the permission of the meeting, substitute "Success to the Horticultural Exhibition and the Botanical Congress now sitting in London." From the first time this scheme was broached, he had given it his most

cordial support, because he thought it was simply a grateful return for the courtesies which British horticulturists had received in Belgium, France, and Holland. In the next place, he supported it because he believed it tended in a great degree to foster and to increase in this country a love of horticulture, and a taste for the growth of flowers. There was no sentimentalism about that. It was an undisputed fact that a love of horticulture and a taste for floral creations tended to refine and humanise the best feelings of man. Let any one go to Battersea Park, or to Kew Gardens, and see the artisan who, confined for six days by his work, escaped on the seventh to admire the wondrous creations of nature displayed there, and he would not fail to come back with the strong conviction that through these works a man's mind must be directed to Him who was the Creator of them all. This, then, was an essentially practical matter. As a member of the Council of the Royal Horticultural Society, it had devolved upon him to receive and to read communications without end from the clergy of various denominations in this great metropolis, praying that the Society would afford them assistance in providing prizes for window gardens in the poor and densely populated districts of London in which they laboured. One and all of those gentlemen stated, that in giving this aid they would be doing an immense amount of good—an amount of good which would be incalculable. In consequence of these representations they did establish prizes, and last year they expressed their willingness to co-operate with others in providing additional prizes; but, owing to the illness of a gentleman who undertook the management of the matter last year, the subject had lapsed, only, however, to be revived next year. They had established prizes in the shape of silver and copper medals, for the best cultivated gardens in the largest camps in England and Ireland; and they had received the warmest testimonials from generals and officers, who had agreed in assuring the Council how much what they had done had contributed to the morality and the good order of the regiments where such prizes had been given. Horticultural science had this great advantage, that from the moment a child commenced it, flowers literally grew under his feet. Even the greatest tyro in the study could never feel lonely in the secluded lanes or the wildest districts of the country, for wild flowers would crop up around him on every side, giving him ample food for meditation, and so turn out to be his kindest and most genial friends. Thus much, then, for the reasons which had induced him to give his hearty co-operation to this scheme, and was it not a scheme that had proved a decided success? To his mind, there could be but one answer to that question, and that was a most emphatic affirmative. It was an attempt on their part to rival, with all possible kindness, similar undertakings that had been inaugurated in various parts of the Continent. He regretted that in the magnificent display they had witnessed there were not more productions from foreign countries; but, on the other hand, he rejoiced to think that both in that room and in another place there were professors of botany and horticulture who had come over from foreign lands to testify their sympathy with the efforts which had been made here. Had any one, he would ask, ever seen more beautiful specimens of horticulture than those which had been displayed? Had any one ever seen more successful fruits of unwearied patience than the horticulturists of this country had furnished? Had any one ever seen a collection which had been displayed in a more advantageous or picturesque manner? Strolling down its long avenues, it really appeared that those beautiful flowers had been placed there by some magic hand, and that it must be one of those happy places in which they were told in their childhood fairies delighted to dwell. The next point they had to consider was to whom those great successes which had been achieved were due. In the first place thanks were due to the gardeners of this country whose public spirit, enthusiasm, unwearied zeal, and great ability, together with their great disinterestedness in trusting plants of so valuable a nature to all the chances and changes of temperature, could not be too highly commended. Next, thanks were due to a public-spirited gentleman, Mr. Ormsen, who had seen that every thing tender was warmly housed; and, lastly, thanks were due to Mr. Gibson, who had been selected by the Executive Committee to arrange the grounds. Let them for a moment pause to consider the enormous strides this matter had made during the last few years. Some of those present would remember the first Show, how small and comparatively insignificant it was; now the Show extended over 3½ acres; and at the Paris Exhibition, which it was proposed to hold next year, so confident were Frenchmen of the resources of England, and the public spirit of English gardeners, that they had apportioned 3½ acres of their space to England—a space which they expected English gardeners to fill. They were assembled on the anniversary of that distinguished Swedish naturalist, Linnæus. In one sense that was to be regretted, because the gentlemen who composed the Society bearing his name were holding a banquet that night, a circumstance which deprived them of the support of many of the professors of botany and horticulture, who otherwise would have been amongst them. In the latter part of the last century that great man visited this country. If he had gone to the Exhibition and seen those beautiful Azaleas, had looked upon the coloured foliage of the plants which vied with them, or those Orchids, grotesque in form but brilliant in colour, would not thoughts have occurred to that scientific mind which would have opened to him a new world of inquiry? But while the gardeners of England had done well they must not suppose that he (the Chairman) was going to let them off by saying that they had done all they could. They had done nothing of the kind. He trusted that if he were spared until next summer, he should see the English gardeners over in Paris, and that they would show to the French nation what they could do, and that they were not afraid either of transit by land, or passage by water, so that they might rival their friends abroad. He knew that many of their foreign friends were present that evening, so he would conclude his remarks with an allusion specially addressed to them. He would say to them that the great festival which they were now celebrating was a mark—only a feeble mark it might be—of their deep gratitude for the cordial, hospitable, and friendly manner in which they received the British horticulturists when they were abroad. He would tell their foreign visitors that they were heartily welcome in this country, and he trusted that they would accept the reception which had been given to them as a feeble expression of the gratitude of Englishmen for past kindnesses. Above all they would declare to their foreign friends that night, whether from France, Holland, Belgium, or anywhere else, that the wish of the English people was that they might cast aside old rivalries and old antiquated jealousies, and do nothing but compete with one another in the most friendly contests—not on the battle field, but in the promotion of all that tended to the advancement of science, of

commerce, and of art. He would propose "Success and prosperity to the Horticultural Exhibition, and to the Botanical Congress, and might the great objects sought to be accomplished be abundantly realised." The toast was drunk with loud applause.

Mr. W. PAUL, in responding, stated that the origin of this movement had been so well explained, that he need not further advert to it. For its success it was greatly indebted to Mr. Moore, who had done his very utmost to secure it. They had succeeded in bridging over a chasm between horticulturists and botanists which no doubt would be turned to a favourable account hereafter. He maintained that Horticulture was both an art and a science—an art as pursued from the decorative point of view, a science as regards the production of fruits and flowers. Gardening as an art had produced men of whom every Englishman had reason to be proud—a Price, a Knight, a Gilpin, a Repton, a Paxton, to say nothing of living men; and the highest and wealthiest in the land, the most refined and intellectual, take a pride and pleasure in the decoration of their gardens. Horticulture as a science has so many true sons that it would be impossible to name even the most prominent. Is there no science in producing with unerring certainty, alike amid the snows of winter and the heat of summer, those splendid fruits and flowers, without which the entertainments and assemblies of this great nation would be shorn of half their enjoyment? It is too close upon the event to estimate its results. Of this, however, we may be sure, that while Botany and Horticulture are promoted by it, it will give fresh life and a wider development to an important branch of natural industry.

The Rev. J. Dix said no doubt at the present time the horticultural world was wide awake; it had been asleep some time. He had been asked to propose as a toast, "The Royal Horticultural and Botanic Societies." In all sincerity of heart he had advocated the claims of the Horticultural Society, and since he became a member of it he had gone through many difficulties. He had been called an obstinate opposer, but he had found that what was called obstinacy had been productive of very good results. When he mentioned the great success of their Tuesday meetings he thought he need say no more. They must remember that their operations were under the searching and scientific eyes of many visitors. As he looked down the tables before him he saw gentlemen who were the very saviours of horticulture, and he had no doubt they would experience the best results if members of the Society would look after their own interests. He proposed "The Horticultural and Botanic Societies," with which he would associate the names of Mr. G. F. Wilson, and Sir Walter Stirling.

Sir W. STIRLING, and Mr. G. F. WILSON returned thanks.

Dr. DAVID MOORE gave some account of the progress of horticulture in Ireland.

Mr. J. G. VEITCH proposed "The health of their kind friends, the distinguished Foreign Visitors." It was on foreign soil that the first Exhibition of this kind took place—viz. at Brussels, and in England they were only carrying on what was begun there. He assured the foreign visitors that although their reception had not been one of ostentation or splendour, it has been a hearty and a welcome one.

M. VAN GEENT, jun., acknowledged the toast in appropriate terms.

Mr. JOHN LEE proposed the health of "Friends from the Provinces," to which the Rev. S. REYNOLDS HOLE, Vicar of Causton, Nottinghamshire, and Mr. A. DICKESE, of Chester, appropriately responded.

"Friends from Scotland and Ireland," was proposed by Mr CHARLES TURNER, Mr. DAVID MITCHELL returning thanks.

Sir C. W. DILKE, Bart., expressed his regret that he was not present earlier, but in common with some friends who had been at the Linnean Society, he had determined to be amongst them as soon as possible. He was always anxious to give as much assistance as possible to the cultivation of horticulture and botany. He felt that it would have been impossible for him to attend and not propose the toast which he would ask the company to drink with all the heartiness it deserved—"The Health of the Chairman, Lord Henry Gordon Lennox."

The toast was drunk with enthusiasm.

The CHAIRMAN, in acknowledging it, said he asked himself why he had been invited to preside. It could only have been because he felt a deep interest in the promotion of the sciences they were met to serve. The position he held had many advantages, but his sole desire was to make them conducive to the general welfare of the Society.

The company then separated.

ONE of the best evidences of the entire success of the Exhibition is the unanimous wish of the Committee and exhibitors to prolong the time during which it shall be open to the public. There is a general reluctance to have such an artistic accumulation of beauty dispersed, and we are very pleased that it is to remain in its integrity until Thursday next. The Royal Horticultural Society have also liberally consented to have their garden gratuitously open to the visitors of the Exhibition during the time.

We think the Committee would confer a great benefit as well as afford great pleasure to a multitude, if on the last day they allowed four to be admitted for a shilling. Thousands would avail themselves of the privilege who would not like to spend the shilling on themselves alone, yet could not afford the same sum for their wives and children.

THE amounts of cash taken at the doors up to Saturday night were—

Tuesday (£1 admission) £392	Friday (1s. admission) .. £1050
Wednesday (10s. do.) .. 1222	Saturday (2s. 6d. do.) .. 840
Thursday (2s. 6d. do.) .. 1708	

These amounts are quite irrespective of the sale of tickets by the agents, which is not yet ascertained.

SOME HINTS AS TO THE ARRANGEMENT OF FLOWER-BEDS AND BORDERS.

(Continued from page 302.)

No. 29. Centre, *Pelargonium Stella*; next row, *Tropæolum Elegans*; third row, *Verbena Velvet Cushion*, with an edging of *Gnaphalium lanatum* next the grass. The *Gnaphalium* must be kept closely pegged down and pinned in, otherwise it will overgrow the *Verbena*.

No. 30. Centre, *Verbena venosa*—the plants of this should be well established; 2nd row, *Geranium Flower of the Day*, with the flowers left on; 3rd row, *Amaranthus melancholicus ruber*, with an edging next the grass of *Golden Chain Geranium*.

No. 31. Centre, *Calceolaria Sparkler*; 2nd row, *Geranium Christine*; 3rd row, *Iresine Herbstii*, with an edging of *Gazania splendens*. This bed would present a very dazzling effect.

No. 32. Three or four feet of the centre should be filled with *Coleus Verschaffeltii*; next to this a two-foot band of *Viola cornuta*, with an edging of *Arabis lucida variegata*.

No. 33. *Geranium Boule de Feu*; 2nd row, *Verbena Purple King*; 3rd row, *Geranium Christine*; 4th row, *Lobelia speciosa*; 5th row, *Geranium Queen's Favourite*.

No. 34. Centre, *Centaurea gymnocarpa*; 2nd row, *Coleus Verschaffeltii*; 3rd row, *Geranium Rose Rendatler*, with an edging of *Geranium Spread Eagle*.

No. 35. Centre, six good plants of *Arundo donax variegata*; next, a band 3 feet wide of *Dracena ferrea variegata*, with a foot margin next the grass of *Viola cornuta*.

To be successful with this bed and the following, it will be necessary to make proper preparations. The whole of the soil should be taken out, also 16 or 18 inches of the clay below the good soil. These beds should also be so situated that they may be easily drained. The bottom of the hole should then be filled up with brick rubbish, and this should come up 6 inches or so above the level of the clay; some chopped sods should then be laid over the brick rubbish to prevent the soil from trickling down amongst the drainage; the good soil should then be replaced, mixing in with it a good quantity of leaf soil, peat, and rough sand to keep the bed porous. If the soil become soddened and sour, farewell to the expected beauties of the sub-tropical garden bed. By preparing the beds as described above, and taking especial care to have them well drained, many of the magnificent tropical plants may easily be grown, especially in the south and west of England; and by taking extra care in preparing the plants previously to planting them out, selecting the warmest and most sheltered positions, much may be done with them even in the north. The wonderful results that have already crowned Mr. Gibson's labours at Battersea Park prove what can be done by energy, perseverance, and skill. What he has succeeded in doing during the past three years would have been thought an impossibility ten or even five years ago, and cannot be credited even now by many who have not had the advantage of seeing the sub-tropical garden at Battersea Park, which is worth travelling three or four hundred miles to see.

It is a pity on that account that the great gathering we have witnessed this week was not held later in the summer, so that many gardeners who have not enjoyed the privilege of seeing the sub-tropical department at Battersea Park might have done so on that occasion; for most assuredly they would there have learned one of the most useful lessons, not only as regards the out-door department, but would have greatly assisted them in the arrangements of their conservatory, plant-houses, &c. They will even now, thanks to the good judgment displayed by the Committee of Management for the Great International Exhibition in obtaining Mr. Gibson's valuable services for the arrangement of the ground on which the Exhibition is held, be able to form some idea of the wonders to be seen in the sub-tropical garden at a later period in the summer.

No. 36. Large bed. Centre, sixteen large plants of *Dracena terminalis*; then a three-feet space covered with *Fuchsia Pillar of Gold*; then a double row of *Dracena congesta*, with a margin 1 foot wide next the grass of *Dactylis glomerata variegata*. If the space between the stems of the plants were covered with *Viola cornuta* this would set it off to great advantage.

No. 37. Large bed. Centre, *Caladium esculentum*; 2nd, *Canna bicolor*; 3rd row, *Canna rubra perfecta*, with an edging next the grass of *Centaurea candidissima*.

No. 38. Large bed. Centre, *Nicotiana wigandoides*; 2nd row, *Solanum macranthum*; 3rd row, *Gnaphalium lanatum*.

The following arrangements for ribbon-borders would look well either on grass or gravel. In planting a ribbon-border I

always, if possible, contrive to have the rows of *Verbenas* supported on each side by *Geraniums*, for the *Verbenas* can by this arrangement be so much more easily kept in their proper place.

No. 1. Back row, purple *Zelinda Dahlia*. This should occupy a space of 3 feet, and the plants should be so planted that they may quickly form a good thick row. Next plant 18 inches of *Calceolaria Aurea floribunda*, then a row of *Geranium Boule de Feu*; 4th row, *Verbena Purple King*; 5th row, *Geranium Flower of the Day*; 6th row, *Lobelia speciosa*; 7th row, *Geranium Golden Fleece*.

No. 2. Back row, *Dahlia Alba nana floribunda*; next row, *Ageratum mexicanum*; 3rd row, *Iresine Herbstii*; 4th row, *Geranium Flower of the Day*, with the flowers left on; 5th row, *Viola cornuta*; 6th row, *Geranium Golden Fleece*; 7th row, *Verbena Velvet Cushion*.

No. 3. Back row, *Calceolaria amplexicaulis*—these plants should be planted pretty thickly together, and sticks placed to support them as soon as they are planted. If this is not attended to they will grow almost any way but the right way. 2nd row, *Amaranthus melancholicus ruber*; 3rd row, *Geranium Christine*; 4th row, *Verbena Purple King*; 5th row, *Geranium Cybister*; 6th row, *Verbena Cicely (pink)*; 7th row, *Lobelia speciosa*.

No. 4. Back row, *Calceolaria Sparkler*; 2nd row, *Geranium Flower of the Day*; 3rd row, *Verbena Claret Queen*; 4th row, *Geranium Bijou*; 5th row, *Verbena Purple King*; 6th row, *Geranium Little David*; 7th row, *Cerastium tomentosum*.

No. 5. Back row, *Geranium Stella*; 2nd row, *Calceolaria Gaines's Yellow*; 3rd row, *Heliotrope Florence Nightingale*; 5th row, *Geranium Bijou*; 6th row, *Iresine Herbstii*, kept well pinched in; 7th row, *Arabis lucida variegata*.

No. 6. Back row, large plants of *Iresine Herbstii*; 2nd row, *Geranium Christine*; 3rd row, *Verbena General Lee*; 4th row, *Geranium Flower of the Day*; 5th row, *Verbena Velvet Cushion*; 6th row, *Mangles's Variegated Geranium*; 7th row, *Lobelia speciosa*.

No. 7. Back row, *Geranium Boule de Feu*; 2nd row, *Verbena Le Grand Bon de Neige*; 3rd row, *Amaranthus melancholicus ruber*, kept pinched in pretty closely; 4th row, *Geranium Alma*; 5th row, *Verbena Princess Victoria*; 6th row, *Lobelia speciosa*; 7th row, *Geranium Queen's Favourite*.

No. 8. Back row, *Amaranthus melancholicus ruber*, large plants; 2nd row, *Calceolaria canariensis*; 3rd row, *Verbena Velvet Cushion*; 4th row, *Viola cornuta*; 5th row, *Geranium Golden Fleece*; 6th row, *Mimulus cupreus*; 7th row, *Cerastium Biebersteini*.—J. WILLS.

CULTURE OF VINES IN POTS.

(Continued from page 344.)

STOPPING AND REGULATING THE SHOOTS.—After the eyes have broken those at the lower part of the cane should be rubbed off closely, and all those along the cane from the bottom upwards for the required length to reach the rafter. I think it best to leave them until the eyes have broken, for if removed with a knife prior to breaking the wounds bleed, but if left until broken there is no danger of this taking place, and their being allowed to remain for a time calls into activity roots for their support. The removal of shoots or buds not wanted leaves more sap for those retained.

When the shoots are so far advanced that the fruit is visible at their points, a partial disbudding may take place, leaving, however, more than will be required for a crop, and if they show well every other bud or shoot may be rubbed off, and this will leave many shoots that ought not to be allowed to carry any fruit, but they will be useful for keeping up a good root-action, which is of primary importance. Take out the points of the shoots at the first leaf above the bunch, tying the shoots loosely to the wires, and being careful not to break the shoots. Laterals will issue from most of the joints, stop these at the first joint or leaf, as also the laterals proceeding from the joint at which the principal shoots have been stopped; as often as these laterals make a leaf pinch out their point. If fruit is shown at the joint to which the shoot is stopped in the first instance, as well as at the joint next below it, make choice of the best bunch as to size and form, cutting the other away.

BUNCHES.—Leave but one bunch to a shoot, one shoot from a bud, all others to be removed so as to leave the shoots 9 inches apart. From six to eight bunches are a good and almost too heavy crop; the bunches should therefore be re-

duced to that number immediately after the flowering is past, and the laterals below the bunches should be broken off close home, keeping those above the bunches closely stopped to one joint, or so soon as a leaf is made take out the point of the shoot; the tendrils to be pinched off close. Keep the shoots well tied down, and properly adjusted to the wires.

THINNING THE BUNCHES.—When the berries are the size of No. 4 shot commence thinning, first of all tying up the shoulders of the bunches. Thin out the smallest berries, and especially those with small wiry footstalks, remembering that as the berries are now small they must be left correspondingly wider apart than were they not thinned until larger. It is well also to bear in mind that the earlier thinning is commenced the less the nourishment afforded by the roots and leaves will be expended on those berries cut away, and the larger those left will be. It is well to go over the bunches twice, first giving a good thinning, and again in ten days or a fortnight going over them again, giving a final thinning, and if there is anything to be guarded against it is leaving too many berries. I find nothing so good for tying up the shoulders as yellow Japan flax, which from its fineness is scarcely visible, and it is of immense strength, even in very small shreds. In thinning avoid handling the berries, using a small round pointed stick about 7 inches long, and with this raise the shoulders and maintain the bunch steady in a proper position whilst the berries are being thinned out.

I stated in a former part of these notes that I would observe on the several descriptions of canes for fruiting at different seasons, but having gone through the whole routine of Vine culture it only remains for me to note the difference between Vines started in autumn and those after January, which consists in those started after that not requiring so high a temperature to commence with; 40° should be the maximum night temperature to begin with, increasing 5° fortnightly afterwards.

A correspondent finds a difficulty in "starting Vines in autumn to obtain strong canes for fruiting in January and February. They break well, but make such small straw-like canes as not to equal those raised in January from eyes, the others being strong one-year canes cut in to two eyes." I have experienced the same difficulty not only with Vines started in autumn, but with those raised from eyes—some always lag behind. Any having such will find stopping the Vines when they have grown a foot in length an excellent plan, cutting them immediately above a joint. A lateral will start from the joint to which the shoot was stopped, which, if allowed to grow, will make a leader, but of weak growth in comparison to that of the original. By the lateral is a bud, and to induce this to push the lateral by its side is to be pinched off closely, otherwise the principal eye would not push until next season. All the laterals below are to be pinched off closely, and then one or other of the principal eyes will certainly push. The shoot from a principal eye is to be preserved, and trained as a leader, which will usually be strong; if not, allow it to grow a foot and then stop it as before, and obtain a new leader from a principal eye by closely pinching in the laterals.—G. ABBEY.

(To be continued.)

SOWING VERBENA SEED.

I HAVE just read an article in your Number of April 17th on the raising of Verbenas from seed by Mr. Wills, and as his recommendations are entirely contrary to my own experience I write to say that I always find Verbena seed will vegetate, if properly treated, in about a fortnight, and will grow nearly as freely as Mustard. In proof of this, I have Mr. Perry's permission to show your correspondent some thousands of plants with the bloom-buds on them, all raised from seed sown in February last. The seed was not sown "2 inches" deep, as recommended by Mr. Wills, or I should not have been surprised if it had been from "seven weeks to two years" before the plants had made their appearance, or even if they had never seen daylight.—T. POINTON, *Gardener to C. J. Perry, Esq., The Cedars, Castle Bromwich, near Birmingham.*

DAFFODIL IN IRELAND.—On looking over the second volume of your "Wild Flowers of Great Britain," I find, under the head the "Common Daffodil," "Abundant in woods and moist meadows in the south of England. Rare in Scotland and Ireland." I beg to bear my testimony that it is most abundant in the county of Dublin, amongst old trees and in moist mea-

dows, and as far as I can learn it is almost as common in other parts of Ireland.—J. VERNON, *Clontarf.*

[Our authorities, Hooker and Arnott, speak of it as rare in Ireland, and Bentham says that it occurs "in Scotland and Ireland only where introduced."—Ena.]

HORTICULTURAL EXHIBITION AT THE ANTIPODES.

THE Horticultural Society of Canterbury, New Zealand, held its final Exhibition for the season on February 28th. The Exhibition, I am sorry to say, was not patronised by the public to the extent that it decidedly merited on this occasion. The display of flowers far exceeded the show of fruit and vegetables. This last Exhibition for the season certainly surpassed the previous two as regards the number, variety, and growth of the articles which were contributed. I send you a few notes I made on the occasion, which you must receive in the shape of gossip. I omit the long list of prizes awarded, and if you knew the intrinsic value of each award it would furnish you with a good hearty laugh.

I will begin with pot plants, which were shown in great profusion. The Fuchsias were really magnificent; some of the plants were 5 feet high and 5 feet through. They consisted of Sir Colin Campbell, Souvenir de Chiswick, Rose of Castille, Guiding Star, and some others; these formed the most attractive part of the show of flowers, and I may say there was not much else in this department to arrest the attention of those accustomed to good shows. I must say also that the Fuchsias were the finest I have seen in the province, and equal to any I ever saw at Chiswick years ago. I must specially notice some Gloxinias, Achimenes, Gesnera zebra, and Clerodendron fragrans, as being without doubt the first time I have seen them exhibited here. They were beautifully in flower and well cultivated, and much admired by the visitors; many questions being asked about them as well. I missed from the plant-stages this year *Humea elegans* and *Perilla nankinensis*, which had a very graceful appearance mingled amongst the other plants. Stove plants seem to be creeping in to fill up their place. I am looking forward to see Orchids amongst us at no very distant period. Marble Balsams and Cockscombs were well represented on the table amongst other subjects, and are becoming very fashionable at our exhibitions. They put me in mind of those formerly exhibited at Chiswick about the year 1840 by Mr. Wm. Cock, which no doubt will be fresh in the memory of many of your readers. We have not been able to come up to him yet in growing Pelargoniums to such a large size, nor do I think we ever shall. Our Pelargoniums are grown so as to form much smaller and more compact plants. We are not far behind, however, in the growth of the Fuchsia.

Of native Ferns I noticed only one collection which, according to the schedule, should be twelve in number. Amongst them were *Lomaria elongata*, *L. nigra*, *L. discolor*, *Asplenium bulbiferum*, *Cyathea dealbata*, *Dicksonia squarrosa*, *Phymatodes Billardieri*, *Cheilanthes tenuifolia*, *Leptopteris hymenophylloides*, and several others. They well deserved the small prize awarded, 7s. 6d. Seven-and-sixpence for a prize for twelve Ferns in pots! Why, it is ridiculous. I was sorry not to find in the collection *Asplenium Hookerianum*, for it is pretty plentiful in our bushes. I noticed at the Exhibition, in the shape of dried plants, a handsome species of *Gleichenia*, brought from our west coast gold field. I understand that plants of it are looking healthy with us as well. Your Fern-growers will be pleased to hear this. The taste for indigenous Ferns here is quite in the bud. We have an endless variety of them. I hope in course of time the taste for them will grow fully ripe amongst us, and that we shall see the bud fully expanded. We are not short of material to work on, I can assure you.

In finishing with pot plants I must not forget to mention double *Petunias*, which, mixed with the Fuchsias on the stages, had a very pleasing effect. We have them of all shades and colours, with flowers exactly like a double *Dahlia* or *Hollyhock*, and equal in size to a good *Rose*, and fragrant in scent. We can grow bedding-out plants here, and well too; neither are florist's flowers forgotten amongst us. We have progressed wonderfully in this way. Seeds of choice Verbenas, *Petunias*, &c., keep arriving every mail by post, thanks to our friends at home for sending them.

Of cut flowers, our *Dahlias* were not so fine as usual, owing

to bad weather; a good many were staved, nevertheless. Roses were inferior in quality, as is usual at this late season. What were shown were of the Bourbon section. I never recollect having seen so poor a show of the queen of flowers. Pansies were not so good as usual, though competition was being carried on in earnest with them. I expected to have seen a much better show of them and better culture. Some spikes of very fine varieties of *Gladiolus* attracted much notice. Some of the new varieties arrive every year when we receive our annual supply of Dutch bulbs. Marigolds, both French and African, were rather meagrely shown; one or two blooms of the former were only worth notice. One beautiful hand-bouquet exhibited was, to my thinking, faultless. In bouquets, both table and hand, I cannot but record a decided and gratifying advance on former years. For the first time a collection of *Helichrysums* were exhibited, and they were beautifully arranged.

Of fruit, some of the kinds of fruit exhibited were fine and large, but as to flavour and quality little was said by the Judges. I will endeavour to make up for this deficiency by stating what I think about the subjects of exhibition. I will begin with the Grapes. The bunches of Black Hamburgh were a decided improvement on other years, the bunches much larger, and of course heavier. They were only deficient in colour, having been cut too soon. We grow very good Grapes out of doors now in sheltered places, as well as Figs, which we could not grow seven years ago. Peaches were well represented by the Royal George and other sorts. Royal Georges being the largest, the Judges awarded the first prize to them, though they were deficient in colour. Other Peaches were there of much better colour, and, in my humble opinion, a ripe Peach looks nothing without a good rosy cheek. The temptation to help one's self was nearly irresistible, particularly to taste the Grapes and virgin honey in comb. Apples were a great deal better represented than Pears; some of the Apples were of very large size. For the first time three Water Melons were exhibited, grown in the open air, and of a good average size. I think I have now enumerated all the fruit worthy of notice.

From some cause or other the exhibition of fruit this year cannot be compared with exhibitions of other years. The interest felt in exhibiting fruit seems to be dying out and becoming neglected. Exhibitors here, as well as at home, have an eye to profit as well as fame. Fruit and vegetables are the "backbone" of our exhibitions here for the present, and if our Managing Committee would offer better prizes of real sterling worth they would soon find a great improvement in the productions. With better encouragement, better productions will follow no doubt, and more of them for competition.

The show of vegetables was highly creditable, and was an evidence of the suitability, soil, and climate of the province to produce, not only the esculents in common use, but likewise those that are regarded as delicacies of the table.

To finish with, I may mention that in addition to the prizes awarded by the Judges, a gold medal, manufactured of Canterbury gold, was exhibited during the day for inspection by one of the Managing Committee, and the medal is to be presented as a prize to the gardener who shall have obtained the greatest number of prizes at the three last Exhibitions of the Society. I consider the medal to be a very creditable specimen of colonial workmanship. My brother gardeners here, of old Adam's trade, have determined to celebrate the occasion of this medal being presented by an anniversary dinner.—WILLIAM SWALE, *Armside Botanic Gardens, Canterbury, New Zealand.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

SEE that the directions given in former calendars have been attended to: where, from unavoidable causes, such has not been the case, lose no time in doing so now. Prepare trenches for early *Celery* by throwing out the soil from 1 foot to 18 inches deep; and for the early crop, which is seldom allowed to stand till it attains full size, 2½ feet between the trenches will be sufficient. Dig into the trench 6 inches of old hotbed dung, which for *Celery* is preferable to that which is rank and new; and as soon as the plants are ready plant them carefully, making a hole for the ball with a garden trowel, choosing a dull day for the operation, finishing with a good watering, and where practicable, shade for a time in bright weather. Little else can be added to last week's directions. Keep the hoe going. Prick-out all sorts of advancing seedlings, that they may get stocky and gain strength before their final planting.

Stir the surface of the soil wherever the late rains have caked it. Above all things watch for slugs, which are very numerous this season; sprinkle crops they are apt to attack with soot and lime mixed, and lay traps for them, such as cabbage leaves, slates, pieces of board, &c., and turn them over daily, when numbers will be found on the side that has been next the ground, and can be destroyed.

FRUIT GARDEN.

Strawberry plantations must now have a final hoeing till after the fruit is gathered, as any stirring of the surface of the soil amongst them would, when the fruit is set, cause the sand to adhere to the advancing fruit, and prove very injurious to them. Where spent hops can be procured cover the ground between the rows with them; they will keep the fruit clean, and they banish snails, especially in dry weather, for, by adhering to their slimy skin, they make them feel uncomfortable, and, consequently, they change their quarters. Where spent hops cannot be procured, the best substitute is wheat straw. Attend to thinning the shoots of Peaches and Apricots on the walls, and lay-in the Apricot wood where sufficiently advanced. Persevere in the destruction of insects on fruit trees as soon as they are perceived. Remove some of the watery wood from the Currant bushes, and thin Raspberry suckers.

FLOWER GARDEN.

All annuals should be thinned-out as soon as they are well above ground, for if left to grow too thickly they spoil one another, and never make half the display plants do that are allowed plenty of space, and which are grown strongly from the first. Attend to staking such of the herbaceous plants as require it before they get blown about and injured, and do not huddle the stems together. The early-flowering Tulips, Hyacinths, Turban Ranunculuses, &c., should not be left in the ground after the decay of the foliage, for if wet weather occurs they will be making fresh roots, which weaken them for next season. Attend to the propagation of the better varieties of Pentstemons, which are very useful plants. Also see to having a good stock of border Picotees and Carnations, which are valuable for cutting. Cuttings of these, if put in before the wood gets too hard, root as freely as Pinks. The time for planting and bedding-out plants in the places where they are to form the great display of the flower garden is now come, and it cannot be too strongly urged upon those who have this work to do, that system in arranging the colour is absolutely essential to complete success. By those who have paid much attention to this part of the gardener's business, it must have been often noticed that different *artistes* produce very different effects with the same plants, and this upon a careful examination will be found to arise more from the judicious arrangement of the colours than from any other circumstance. What can be more beautiful than some of the white Verbenas or the yellow *Calceolarias*? but place these two sorts together, and the pure white of the Verbenas is quite destroyed. Neither should colours be placed in violent contrast, because richness of effect is not produced by contrast, but by harmony. Thus, scarlets harmonise with purples or blues; these again with any orange-coloured flower: pink will harmonise most delicately with any flower of a pure white colour, and violet with yellows. In some cases, however, especially on gravelled terraces, contrasted colours are very desirable, and these are much more easily managed. Thus, the contrasting colour to scarlet is white, the contrast to purple is yellow, and the contrast of orange is blue, and so on of their different shades. Summer creepers should be grown to some size before being turned out, if early flowers are required. The colours of the flowers of the common *Nasturtium* are very beautiful, and if the leaves of the plants are thinned as they grow, interesting effects may be produced by the flowers. Plant in rich soil a good supply of Stocks and Asters for the autumn, and sow a succession of annuals for filling-up any vacancies which may occur, and likewise another sowing of Mignonette in pots for the rooms or for filling window-boxes. Look to young shoots of all old *Fuchsia* stools, let them be thinned out to five or six. Attend diligently to standard Roses, constant disbudding is necessary at this period; also keep down suckers. Let every attention be paid to propagating reserve stock to fill gaps, and let that already rooted or the remains of store pots have kindly cultivation forthwith, in order to be ready to fill blanks. They should be kept in a shady border by themselves that the proper keeping of the garden may be as little interfered with as possible, through the litter and confusion consequent on "turning out." Use every dispatch to bring this work to a finish; but if any

portion of the stock is not sufficiently prepared, allow it to remain under glass as much longer as may be necessary, and plant-out nothing but strong plants that have been carefully inured to the sun and air, for weakly ill-prepared stuff is so much at the mercy of the weather, that it is folly to depend upon its covering the ground in any reasonable time. Give sufficient water to settle the soil about the balls of the plants the first warm morning after planting, and give no more until the soil becomes dry, unless warm drying weather should set in, and then a gentle sprinkling every morning will greatly benefit the plants.

GREENHOUSE AND CONSERVATORY.

When the cold pits and frames have been cleared of the bedding stock, they will form excellent places during summer for the growth of many things for the autumn and winter decoration of the conservatory. Indeed, many of our most useful plants for this purpose will do better for the next three months in cold frames than in larger houses, where the state of the atmosphere is not so much at command, nor the plants so readily examined, as in these humble structures. Roses are, perhaps, more generally admired than any other class of plants, and bloom freely in the conservatory in autumn and early winter, if properly attended to at the right time. Young plants of the perpetual-flowering kinds, as Teas, Bourbons, Hybrid, and Damask Perpetuals, if placed in a cold frame and properly attended to with pot room, and liberally supplied with manure water, will soon form nice-sized specimens. But in order to secure their blooming freely in autumn and early winter, the flowers must be picked off as they make their appearance, and strong, stocky growth secured by giving abundance of air, exposing the plants to the night dews, and keeping the shoots stopped and tied out as may be required, and otherwise attending to the habits of the variety. Also, attend to the Japan Lilies, Chrysanthemums, scarlet Salvias, tree Carnations, and plants of that sort for autumn and early winter decoration. Give them plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the proper development of their branches and leaves. Epacrises, winter-blooming Heaths, and Cytisus, should likewise be cultivated in quantity, for few plants surpass them for winter decoration. The atmosphere of plant-houses can scarcely be kept too moist at this season, therefore sprinkle every available surface frequently, and syringe growing stock twice a-day during bright weather.

STOVE.

As regards stove plants and Orchids, thorough cleanliness, free ventilation, plenty of atmospheric moisture, and occasionally a slight shading in very bright sunshine, are at present the chief requisites. No means should be neglected to encourage a free growth in Orchids at this period, in order to get their pseudo-bulbs firm and well ripened betimes.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

FROM the 19th and onwards to the time of writing this there has been a bright sun, attended too frequently with dry parching winds, and less or more of frost in the morning. Protected some fresh-planted things with twigs, and run the Dutch hoe through all crops sufficiently advanced to be seen, as alluded to last week.

FRUIT GARDEN.

Did the same with the hoe as respects *Strawberries* to prevent the ground cracking, which it threatened to do, and a loose surface is the great remedy for that evil; but unfortunately it also keeps the heat out, and, notwithstanding the bright sun, the earth is still cold at a small distance from the surface. Filled more frames with *Strawberries* showing bloom, lifting the nice young plants with large ever-so-many-shaped balls, which needed no disturbing, as they would have required if to be squeezed in pots. In such weather as this these plants will come in a fortnight before those out of doors. Arranged a row in pots in front of the orchard-house, where they will have plenty of light and air, and these will come in a week or ten days before those planted out in the frames. Before filling the frames we washed the back and the ends with a paint formed of three parts sulphur, and one part of lime and one of soot, the latter just to mellow the colour. The red spider is the great enemy of the *Strawberry* under glass, especially when the plants are placed up on high shelves. On the highest of our four shelves in the Peach-house we detected traces of the little enemy, and had the plants taken down at once

and the shelf removed. Put a coating of lime, sulphur, and soot on the pipes and on all the openings on the back wall; daubed them with a thick paint made of soft soap, sulphur, and a little water. We particularly daubed this close to the apex of the roof, and wherever there was a chance for the sun's rays to strike unobstructedly on it, as then strong fumes will be given off for a long time, and nothing will suffer from them if air is given early. The soft soap, besides giving off fumes unpleasant to all insects, causes the sulphur to stick pretty well, and so far bid defiance to the syringe. So painted the open places in the orchard-houses, and about 18 inches at the top of the wall in the vinerias, as the only place where there was a chance of the sun beating on the wall. This simple application, and a little sulphur at times applied to the pipes, generally keep off the spider from Vines, without any syringing except merely to damp the floor and pathways.

Air-giving.—We believe that giving air early, or, where the coal heap will permit of it, keeping on a little air at the top of the house all night, would be found the great remedy against scorching, scalding, and even the attacks of the red spider. In one of these hot days with a fierce sun, a great enthusiast for air was astonished to find that at midday we had not more than 2 inches of air on at the top of the house, and nevertheless the house felt quite comfortable, and everything seemed to like the atmosphere at about 85°; but an inch was given early before the house rose to 70°, and the pipes were comparatively cool when the sun heat was strong. He told us he was sure he would have a foot of air at the top, and 6 inches at least in front, but, then, it was next to impossible to keep plants from being parched and shrivelled up. Well, the scarcity of water and the less labour in air-giving, as well as the teachings of Nature, which informed us that the greatest heat takes place during the day, led us first to lessen the quantity of air generally given to houses, so as to take full advantage of sun heat, the cheapest and the best of all modes of heating. Such a mode will scarcely answer with those amateurs who run to their houses at 9 or 10 A.M., and then after a bright sun pull down sashes and open doors, doing their best to shrivel and dry up their plants after submitting them to a scalding, steaming process. Our advice to all such gardeners with small houses, who cannot get at their pets early enough in the morning, is never to shut up their houses entirely at top from the end of March to the end of October. Plants will rarely be scalded in such houses even with little air, as the heat of the sun rises gradually, and all heated vapours will freely escape. Nothing so much tends to make plants ready to receive the visits of all kinds of insects as placing them alternately in a vapour-bath, and then in a strong current of dry parching air.

A certain distance from the glass, say from 12 to 18 inches, according to the position, acts also as a means of safety. The foliage is much less liable to be scalded or scorched in such circumstances, and if the glass is at all large and good the plants will be in no danger of being drawn up weak. Keeping plants near the glass is a capital rule in dark shady houses, or where light only reaches them on one side, but it may be safely neglected when there is nothing above them to intercept the sun's rays. With free light above and on all sides, the plants may be kept sturdy and strong, though at a considerable distance from the glass. Cuttings may thus often be struck without the necessity of shading, and the diffusion of the rays before reaching them will save them from flagging, which they would be sure to do if unshaded and close to the glass in a bright sun.

Even in the case of early *Strawberries* there is less necessity for keeping the plants close to the glass, if they enjoy unobstructed light, and a current of air passing over them when they are in bloom, and at that time they are not subjected to a too high temperature. When the *Strawberry* sets most freely out of doors the average temperature, except in sunshine, will often range from 40° to 50°, and it is quite a mistake to suppose that the plants would set better if kept in a temperature of from 60° to 70° at night. When that is done, the vital energies of the plants are unduly exhausted, unless, indeed, when the custom is adopted of keeping down the temperature during the day, with large admissions of air. For instance: very fine Grapes have been produced by keeping the night or day temperature within 5° or 10° of each other, but it is a much cheaper plan to imitate Nature in this respect, and allow a considerable fluctuation of the temperature between a cold night and a bright day, and thus get the sun to help us instead of always resorting to the coal heap.

Temperature.—One other thing we must here allude to. The

cool temperature at night, and the high temperature during the day from the effects of sun, are the best means of all others for keeping insects at bay. Keep a high temperature at night to unduly expand the tissues, when there is no sun to concentrate strength, and the weakness thus secured just gives every encouragement to insects to commence their ravages. In destroying them, we have great faith in heat suddenly applied, when as a liquid it scalds the insects and yet does no harm to the plant; but for keeping them off commend us to letting the plants have rest, instead of excitement in darkness.

And then again, on the principle of sudden fluctuations, plants are safer every way when a fair distance from the glass than when they are exposed close to it. We should be afraid to tell what a gentleman told us his tobacco and Gishurst, &c., cost him in a twelvemonth, and we recollect a great gardener telling us that when last he went through that gentleman's houses he had a good sprinkling of mealy bug on his clothes. We believe that after a cleaning process had been gone through the keeping clean would have partly depended on burning less fuel. Even in the tropics the heat is not always at fever heat at night, and there is not always a parching draught of air during the day.

Small Plant-houses.—There are two things that prevent many an enthusiast from having one of these plant-houses in his little garden or attached to his residence. The first is, he hears from all great gardeners about the superiority of hot water, but he dreads the bill of a hot-water man, and he cannot get into the simplicities enough to have faith in a stove or a small flue. The second drawback affects the giving of air. It is more than a mystery, it becomes a puzzle and a drawback. He knows that if he opens the door a good deal of air will at once enter—that is, that there will be immediately an attempt at equilibrium between the atmosphere without and the atmosphere within; but then the opening of the door would be too much in coldish weather for his small house of, say, 12 to 18 feet long and 8 to 12 feet wide. He can easily have a sash or two, or large-framed squares, made to open in front; but then he knows that a fixed roof is a great point of economy, and he dreads the expense and the bother of having moveable sashes or ventilators at the apex. Well, for all such small plant-houses, although as has been seen, we are advocates for air-giving at the apex, yet from 12 to 15 inches of an opening at each end of such apex will prevent all mischief, provided that in extra hot weather more air is given by the ventilator in front or by the door in hot weather. If these end ventilators stand open night and day from April to the end of October, the labours of the amateur will be vastly diminished.

For the thousands of our readers, many of whom are anxious to have a house, and are deterred by this question of air and its generally supposed intricate minutiae, we wish for their encouragement broadly to proclaim that, provided air is given early, much less than is generally supposed will do—and that if the temperature inside during the day will fluctuate backwards and forwards, according as the sun enters or emerges from a cloud, the plants will do better than when treated on a more unnatural, though perhaps more attentive system. We have ourselves done it, and seen others lessen and enlarge the air-openings of houses some six or seven times in an hour—a good thing for securing attention as well as wearing shoe leather, but really doing no great amount of good to the plants so treated.

ORNAMENTAL DEPARTMENT.

Kept potting Fuchsias, Geraniums, Begonias. Brought Camellias into vineries, the plants quite done blooming. Potted Ferns, and Selaginellas. Brought Azaleas done blooming into a closer moister atmosphere, and this is just one of those cases in which we little folk have to think and scheme more than many of our great gardeners, who have a place and a house for everything; the man who has a flowering and a growing house for Azaleas can easily keep the one cool, and the other in the humidity and heat of the tropics; but the difficulty with the man of one house is to give flowering, and growing, and resting plants the right treatment they require under the same roof; and what is not quite agreeable is, many employers, who should know better, expect results in their small places which can only be fully obtained when there is a place for everything according to its requirements. Our work, however, has chiefly been in rolling, mowing, cleaning up, and, as the nights are still so cold, preparing the ground by digging and turning in sunbeams, for getting the flower-beds into a suitable state for the reception of the plants that are now chiefly growing in earth-pits and trenches with less or more of protection.

There are two things of importance which we have lately learned, and which we cannot well keep back for the discoverers to speak about. The first is the efficacy of a common fishing net spread over the glass for preventing turning over of fine-foliaged plants, and giving a better colour than a dense shade; and the second is the plan of striking cuttings of *Centaurea candidissima*, &c., on the cool system, aspractised by ourselves and others with *Calceolarias* in the autumn, of which Mr. Robson could tell us something interesting.—R. F.

COVENT GARDEN MARKET.—MAY 29.

A good supply of both foreign and home-grown produce, and last week's quotations are generally maintained. Some English Green Peas are now coming in, and will materially influence the market for those of French growth in another week. There have been heavy arrivals of Potatoes from the west of England and the Channel Islands, and of good quality.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.			
Artichokes	each	0	3	to	6	Leeks	bunch	0	8	to	0	0
Asparagus	bundle	3	0	0	0	Lettuce	per doz.	1	0	1	6	
Beans, Broad	bushel	0	0	0	0	Mushrooms	per pottle	1	0	2	0	
Kidney	100	2	0	2	6	Must. & Cress, panned	0	2	0	0		
Beet, Red	doz.	2	0	3	0	Onions	bushel	6	0	8	0	
Broccoli	bundle	1	0	1	6	Parsley	doz.	2	0	0	0	
Brs. Sprouts ½ sieve	0	0	0	0	0	Parsnips	doz.	0	9	1	6	
Cabbage	doz.	1	0	2	0	Peas	per quart	2	0	4	0	
Capsicums	100	6	0	0	0	Potatoes	bushel	2	6	4	0	
Carrots	bundle	4	0	8	0	Kidney	do.	3	0	4	0	
Cauliflower	doz.	2	0	6	0	Radishes, doz. hands	0	6	1	0		
Celery	bundle	2	0	3	0	Rhubarb	bundle	0	4	0	8	
Cucumbers	each	0	4	1	0	Savoy	doz.	0	0	0	0	
plekking	doz.	0	0	0	0	Sea-kale	basket	0	0	0	0	
Endive	doz.	2	0	0	0	Shallots	lb.	0	8	0	0	
Fennel	bunch	0	3	0	0	Spinaech	bushel	4	0	5	0	
Garlic	lb.	1	0	0	0	Tomatoes, per doz.	3	0	6	0		
Herbs	bunch	0	3	0	0	Turnips	bunch	0	4	0	6	
Horseradish	bundle	2	6	4	0	Vegetable Marrows dz.	0	0	0	0		

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.				
Apples	½ sieve	4	0	to	8	0	Melons	each	8	0	to	12	0
Apricots	doz.	0	0	0	0	Nectarines	doz.	15	0	8	0		
Cherries	lb.	2	0	3	0	Oranges	100	6	12	0			
Chestnuts	bush.	0	0	0	0	Peaches	doz.	30	0	43	0		
Currants, Red ½ sieve	0	0	0	0	0	Pears (dessert)	doz.	0	0	0	0		
Black	do.	0	0	0	0	kitchen	doz.	0	0	0	0		
Figs	doz.	8	0	15	0	Pine Apples	lb.	8	0	12	0		
Filberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0		
Cobs	100lbs.	0	0	0	0	Quinces	½ sieve	0	0	0	0		
Gooseberries	quart	2	0	0	0	Raspberries	lb.	0	0	0	0		
Grapes, Hot-house	lb.	8	0	15	0	Strawberries	oz.	1	0	1	6		
Lemons	100	6	0	10	0	Walnuts	bush.	14	0	20	0		

TRADE CATALOGUES RECEIVED.

B. S. Williams, Victoria and Paradise Nurseries, Holloway.—*General Catalogue of Plants.*
 F. & A. Dickson & Sons, 106, Eastgate Street, and Upton Nurseries, Chester.—*Catalogue of Select Bedding Plants, &c.*

TO CORRESPONDENTS.

* * * We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed *solely* to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

INSECTS (B. Ball).—We examined with a powerful magnifier the soil you sent, but were unable to discover any insects. If there are any which hide in the soil, sprinkle guano over the surface.

EXHIBITING-STAND FOR ROSES (W. H. M.).—Rose-stands should be 1 foot 6 inches broad, 6 inches high at the back, and 4 inches in front; the length of box will vary according to the number of blooms. The holes should be about 6 inches apart, and a tin tube in each to hold water.

GERANIUM IN WINDOW (W. H. B.).—1. We do not recommend guano to be mixed with the soil, but you may use it advantageously by dissolving an ounce in a gallon of water, and with this water the plants at every alternate watering. 2. The plants should have a shift at once into pots 7 or 8 inches in diameter, and not less than 6 inches. 3. Plants thrive best in common pots.

DEVONIENSIS ROSE FLOWERS NOT OPENING (T. T.).—We think the atmosphere of your greenhouse has been kept too close and moist, and the temperature too low. To open well, a temperature of 60° to 65° is requisite, and a rather dry atmosphere.

RED SPIDER (Under Gardener).—See what Mr. Fish says to-day in "Doings of Last Week."

ERRATUM.—At page 576, second column, No. 24, "Hellanthus" should be "Melianthus."

AZALEAS IN ROOM (M. C.).—Providing the room is light, and the plants kept near the glass, you may keep Azaleas there in autumn and winter; but they will not do so well as if kept in a greenhouse; and they will need placing in a warm and moist house to make growth after flowering, to secure new growth, and the setting of the bloom-buds. Though you can keep them in a room, it is not desirable to do so longer than can be helped. A few days whilst in bloom do not do them any great harm; but, as a rule, it should be restricted to that.

EUCHARIS AMAZONICA NOT BLOOMING (Idem).—Your plant does not bloom because the annual growth is not well ripened. After the growth is made, expose fully to light and air, give no more water than sufficient to prevent the foliage flagging, and it will bloom in due season. Get a good growth, and well ripen it off.

GERANIUM LORD OF THE ISLES BLOOM (Idem).—The flowers of this have a tendency to be crumpled and not to open flat, it being aggravated by not ventilating so as to avoid cold currents, and the absence of a slight shade will cause it, as will the plants being attacked by aphid.

WALL FOR PEACH TREE (A Subscriber, Lipp).—Your wall (8 feet), is sufficiently high, and the trees should be pruned level with the top of the wall. You may also raise the wall as you propose, but it is quite unnecessary, unless you have some other object in view.

SEEDLING SCARLET PELARGONIUMS (Thomas Sampson).—Your seedling Pelargoniums appear to be of the right sort, and although similar to some already before the public, they are of great merit. The deep

rose flower of the Christine section is very good, and the brilliant scarlet Nosegay a very promising flower. There is great substance and smoothness of petal in all the seedlings, but to arrive at their respective merits they must be compared with others. Seedling Pelargoniums are innumerable. Could you not name them? Send some plants for the opinion of the Floral Committee, South Kensington; you would then ascertain their value and merits.

GLASS (Spalding).—Hartley's rough plate glass is the kind you allude to, probably. Any wholesale dealer in glass who advertises in our columns can supply you. You had better write to one or two for prices.

SCALE (S. A.).—The scale on your Plum tree may be a new species of *Coccus*, but more probably *C. persicae*.

APPLYING GUANO WATER IN DRY WEATHER (Agnes).—There is not the least objection to your using guano water, 2 ozs. to the gallon of water, to Strawberries and Roses during dry weather; but at such times, and such only, can manure water be of benefit, for in moist weather water is not needed, and any manure applied then are best given on the surface so that the rains may wash it in. Guano water will injure the blossoms if it touches them. It should be applied between the rows of the Strawberries, a good watering being more efficacious than many dribbles.

NAMES OF PLANTS (H. K.).—*Caladium Belleymei*. (M. E. M.),—1, *Blechnum occidentale*; 2, *Scopolendrium vulgare*, var. *cristatum*; 3, *Asplenium bulbiferum*. (F. Angel),—1, *Aster fruticosus*; 2, *Cistus Indaniferus*; 3, *Lisianthus*; 4, *Cantua buxifolia*; 5, *Solanum espicicstrum*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending May 26th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 20	30.875	30.198	67	42	56	52	E.	.00	Very fine throughout; drying wind.
Mon. . . 21	30.841	30.906	62	36	57	53	E.	.00	Cloudless with hot sun, and very dry air; fine at night.
Tues. . . 22	30.970	30.292	63	30	55½	53	E.	.00	Dry haze; fine but cold easterly wind; and very dry; frosty at night.
Wed. . . 23	30.140	29.905	71	35	56	53	E.	.00	Fine with dry air; fine throughout; cool at night.
Thurs. . 24	29.894	29.707	60	37	55	52½	E.	.00	Cloudy and cold; hoisterous; fine at night.
Fri. . . 25	29.795	29.651	62	40	55	52½	E.	.00	Very dry easterly wind; cold, dry, and windy; overcast.
Sat. . . 26	29.627	29.590	73	42	55½	53	N.E.	.50	Overcast, cold, and dry; masses of white clouds; heavy rain at night.
Mean	30.049	29.937	65.43	37.43	55.71	52.71	..	0.50	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

WOODBIDGE EXHIBITION OF POULTRY.

THIS Show has now been most successfully carried on for the last five years, and year by year its improved character has reflected much credit on its management. The whole of the surrounding neighbourhood is most rural and pleasant; and the spring-tide of the year, when the leafage shows in such splendid contrast to the blooms of the Horse Chestnuts, now at their prime, is just the season of all others to attract the visits of those persons whose lot it may be to spend their days within the limits of populous towns. To such individuals the contrast of a "country out" is most covetable, and the attractions of ringing of the church bells, and the performances of the Third Volunteer Band, together with a local drum and fife band, each and all vied to draw together as large a company as possible. Again, the suburbs of Woodbridge are notorious for the abundance of its Nightingales—so much so, that it is not by any means an uncommon occurrence to hear three or four of these birds singing at the same time on the show grounds, and not a few visitors availed themselves of this opportunity of listening to these charming songsters. In the burial ground belonging to the Seckford Almshouses, not far distant, the Nightingales may also be heard to great advantage, both by night and day, singing as it were a requiem over the bodies of those aged participators in this very excellent charity who are already called to their "long home." In proof of the salubrity of this situation, by referring to the numerous tombstones we find the shortest-lived had weathered through sixty-four summers, and that the majority had closely approximated to one hundred.

By the very kind permission of Colonel Long, the Abbey Grounds were thrown open, as heretofore, for the purposes of the Poultry Show. They are singularly well adapted for such a meeting, and two large tents erected on the lawn provided thoroughly against every possible exigence of weather that might have arisen, but most fortunately the day was very propitious. Mr. Cooke, of Colchester, provided the pens, than which none can be better suited for the purposes of a show. The greatest cleanliness was observed throughout, and the popular expression of gratification was general among all comers.

The Woodbridge Show was strong in the Game classes, Mr. Matthews, the well-known Game breeder of Stowmarket, exhibiting a most splendid collection, and as will be seen by consulting the prize list appended, taking no inconsiderable portion of the prizes allotted to these classes, and in the first class all three. A most capital Duck-wing hen shown with one toe altogether deficient, from some previous mishap or other, lost this gentleman, we are told, still another side-board trophy. Mr. James Fletcher, of Manchester, showed some excellent Duckwings, and also obtained a plate premium. The *Dorking* class contained a most worthy muster of good birds, but from their

owner's mismanagement great numbers of them were sadly diseased in the feet and toes. It cannot be too strongly impressed on Dorking breeders, that the perches used as roosting-places for these weighty birds should never be above 2 feet from the ground. If placed higher, bruised toes and ulcerated feet are the inevitable result. Many very good individual birds of this breed were shown in the "Selling Class," but not matched in feather properly for exhibition. In *Cochins*, the Partridge-coloured were mostly very good, whilst many pens of good *Buffs* were also shown. The three prize pens of *Black Spanish* were capital birds, and the two principal ones were exceedingly well shown. In *Brahmas*, the dark-feathered variety were worthy of especial mention, and obtained the extra cup for *Brahmas*, "dark or light-coloured." The latter variety were deficient in substance. The Golden-spangled *Hamburghs* were remarkably good, and the Silver-spangled but little inferior. In the last-named class we regret to find Mr. A. K. Wood, of Burnside, Kendal, lost a most excellent hen. She was reported as being dead by the guard in charge of the train on the railway, on her reaching the Bishopsgate Station, and certainly appeared on her arrival at Woodbridge to have been dead a considerable time. It is a serious loss to the owner, as it will be an unusually difficult task to replace her. She was without any delay repacked in a small basket and sent back to the owner; the cock, however, remained a solitary occupant of the pen allotted to them, and was a remarkably good specimen. The Silver-pencilled *Hamburghs* were not at all a first-rate class, but the class for "Any other variety of fowls," was capital. La Flèche, Houdans, and Silver-spangled *Polands* were the successful breeds; but *Rumpless*, *White Silks*, and a very singular pen of Cuckoo-coloured *Rumpless*, are mentioned in the prize list. We cannot speak so highly of the *Game Bantam* class as of single *Game Bantam* cocks, the excellence being limited almost exclusively to the winners only. In "Any other variety *Bantam* class," *Birchen Greys* stood first, and some good *Japanese* were the recipients of the second prize.

The *Ronen* and *Aylesbury Ducks* were good, but the competition was very limited. The same may be said respecting both the *Geese* and *Turkeys*.

The *Pigeon* premiums being confined to a first and second prize only, drew out but few competitors, though any brood were available. The first was taken by *Black Carriers*, and the second by *Black Magpies*.

Very unfortunately from some mismanagement on the part of the railway authorities, a very considerable number of pens were delayed until the morning following the arbitrations, and were of necessity entirely thrown out of all chances of prizetaking. In fact, some of the baskets of fowls were actually just come to the Woodbridge Railway Station, when the Judge was leaving the next morning. There appeared to be above a dozen in number by this train, independently of even a larger quantity, that were too late for competition the night before, though the awards had been purposely delayed till evening. It certainly appears at first sight somewhat inexplicable how it should

occur, that birds sent off altogether should arrive in three different consignments—a feature that can admit of no other solution than negligence on the part of the railway officials themselves.

Certain it is, no committee could be more anxious to oblige every one than that at Woodbridge, and all that the most scrupulous care and attention could do was done in every case, so soon as the birds came into their hands. Of course, to owners it is a matter of considerable annoyance, without referring at all to the wasted outlay in carriage and the expense of extra money. The transit of show poultry ought to be always immediate, to prevent these mishaps.

GAME (Black-breasted and other Reds).—First and Cup, and Second and Third, S. Matthew, Stowmarket (Brown Reds). Highly Commended, J. Fletcher, Stonehough, near Manchester (Brown Reds); E. Pettitt, Colchester (Brown Reds).

GAME (White and Piles, Blacks and Brassy-winged).—Prize, S. Matthew (Piles).

GAME (Duckwings and other Greys and Blues).—First and Cup, J. Fletcher (Duckwings). Second, S. Matthew (Duckwings). Third, J. Goodwin, Holesley (Duckwings).

DORKING (Coloured or White).—First and Second, H. Lingwood, Needham Market (Coloured). Third, F. Parlett, Chelmsford (Coloured). Highly Commended, Rev. T. Palmer, Trimley St. Martin (Coloured); J. Frost, Wickham Market (Coloured); D. C. Campbell, M.D., Brentwood (Coloured). Commended, W. H. Walker, Shenfield, Brentwood (Coloured); T. Tatham, Kingsthorpe, Northampton.

COCHIN-CHINA (Darktridge).—Cup, First and Second, J. Stephens, Walsall. Third, W. F. Josling, Chelmsford.

COCHIN-CHINA (Any variety).—First, T. Tatham (Buff). Second, Rev. C. Spencer, Attleborough (Buff). Third, H. Lingwood (Buff). Highly Commended, Rev. C. Gilbert, Stumpshaw Hall, Norwich. Commended, S. Felgate, Ipswich (White); G. Manning, Springfield (Buff); F. W. Knst, Hastings (Buff); Rev. C. Spencer (Buff).

SPANISH.—First and Second, R. Wright, Holloway Road, London. Third, J. Stephens.

BRAMA POOTRA (Dark).—Cup, J. H. Pickles, Bridge Road, Todmorden. Second, J. Wright, Woodbridge. Highly Commended, E. Sheerman, Chelmsford; J. Wright; J. K. Fowler, Aylesbury.

BRAMA POOTRA (Light).—First and Second, J. Pares, Postford House, Guildford.

HAMBURGH (Golden-spangled).—First, A. K. Wood, Barnside, Keudal. Second, E. Garrett, Snape Bridge. Highly Commended, J. Wright. Commended, Rev. T. L. Fellowes, Beighton Rectory, Acle, Norfolk; L. F. Lovelidge, Newark.

HAMBURGH (Golden-pencilled).—First, C. Havers, Ingatstone, Essex. Second, Rev. T. L. Fellowes. Highly Commended, Mrs. Burrell, Ipswich.

HAMBURGH (Silver-spangled).—First, A. Woods. Second, J. Wright.

HAMBURGH (Silver-pencilled).—First, T. J. Saltmarsh, Chelmsford. Second, Rev. T. L. Fellowes.

ANY VARIETY.—First and Second, Rev. C. Gilbert (Houdans and La Flèche). Third, J. Hinton, Hinton, near Bath (Silver Polands). Highly Commended, Mrs. Burrell (Silver-spangled Polish and Silkies); E. Pizeon, Lymstone, near Exeter (La Flèche); W. A. Lethbridge, Bottisham, Cambridge (Creve Cœur). Commended, T. Bryant, Chediston, Halesworth (Rumpless); J. Read, Linstead, Magna (Rumpless); W. A. Lethbridge (La Flèche).

BANTAMS (Gmel).—First, G. Manning. Second, R. E. Postens, Brentwood. Third, H. Snushall, Gedney, near Wisbech.

BANTAMS (Any variety).—First, Mrs. Pattison, Maldon, Essex (Duckwing). Second, E. Pigeon (Japanese). Highly Commended, G. Manning (Golden Schright); Mrs. Burrell (Rumpless); Mrs. Saltmarsh, Chelmsford (Gold-laced Sebright).

FELLING CLASS.—First and Second, F. A. Kent, Kesgrave, Woodbridge, Suffolk (Coloured Dorkings). Third, D. C. Campbell, M.D. (Coloured Dorkings). Highly Commended, J. Frost, Wickham Market (Coloured Dorkings). Commended, R. Goodwyn, Woodbridge (Game Duckwing).

GAME COCK.—First, S. Matthew. Second, E. Pettitt. Highly Commended, W. G. Maricel, Wickham Market.

BANTAM COCK.—First, Rev. G. Raynor, Kelvedon Hatch, Brentwood. Second, Mrs. Sheerman. Highly Commended, E. Pigeon. Commended, R. Garrett.

DUCKS (White Aylesbury).—First and Second, J. K. Fowler. Highly Commended, Rev. M. R. Bernard, Margavetting, Ingatstone.

DUCKS (Rouen).—First, Rev. T. L. Fellowes. Second, J. K. Fowler.

GEES.—Prize, C. Capon, Framlingham.

TURKEYS.—First, C. Capon (Black Norfolk). Second, R. Garrett.

PIGEONS (Any variety).—First, J. Bass, Ipswich (Carriers). Second, E. Pigeon (Magpies). Commended, B. Goodwyn (Carriers).

JUDGES.—Edward Hewitt, Esq., Eden Cottage, Sparkbrook, Birmingham.

SHEFFIELD EXHIBITION OF POULTRY AND PIGEONS.

It cannot be disputed that the Show just held at Sheffield has proved by far the best that has ever yet taken place in that locality. It appears that the Sheffield Shows have been hitherto not so pecuniarily successful as was expected, but the Committee of this year determined to leave no stone unturned that might tend to increase its popularity and consequent success; therefore, they have added an exhibition of Dogs, a feature that evidently possesses much attraction.

This leads to a passing remark that may prove useful to our general railway companies, if they listen to the suggestion, and may prevent a great amount of vexation and loss to both themselves as public companies, and also to parties who feel the deepest interest in the objects they exhibit. We allude to the very reprehensible practice of packing dogs in the same van with poultry of any kind during transit to shows. Every one must admit that dogs as well as poultry share in the general excitement of railway travelling, and, consequently, it cannot be a

matter of astonishment if, when birds are noisily excitable, they should receive injury from dogs closely confined with them—dogs, too, that perhaps have hitherto been altogether unaccustomed to such poultry clamour. All the particulars of these cases we have not been favoured with, therefore can only give the results so far as they have come to our knowledge. Mr. Yardley's well-known pen of Yellow Dragon Pigeons, the prize-winners at many and many a show, were not only killed but almost entirely eaten by a dog on their journey to the Show, their assailant having ripped up his own basket and their's also to effect his purpose. "Romaine," a very celebrated bull dog, considered by judges the best bull dog of the day, and for which the owner gave £150 only a very few months back, was found dead, apparently from suffocation; and a very valuable bitch of the same excitable breed proved on its arrival so far gone that it was only recovered after great difficulty, coupled with the most anxious attention for several hours. Surely for the future, railway companies will see the absolute necessity of providing separate vans for dogs; and any careful observer at the Sheffield Show might easily perceive by the broken plumage of various pens, how continuous must have been the alarm of the birds from the close proximity of their ferocious assailants when travelling. But enough has been said on a subject by no means pleasant to dilate upon.

The Show was held on the Cricket Ground, about two miles or a little better from the centre of the town—a lovely spot for the purpose, but to our mind one a little too far out for visitors. The weather was in every sense "Queen's weather," and the public seemed thoroughly to enjoy the treat provided.

It is only very rarely so capital a class of Spanish fowls meets the eye of an amateur, and Mr. Beldon may well be proud of his success; for in addition to first prize in the Spanish class, his excellent pen obtained the extra prize of a case of fifty-three pieces of the best entry, liberally presented by one of the Committee, Mr. Brown, to insure a good entry. It was quite evident that this prize was intrinsically worth far more than represented on the prize schedule—a feature most creditable to the donor.

The Grey Dorkings were mostly sadly out of feather, but there was an abundance of good birds. Some White Dorkings were also well shown.

Mr. Brierley's Game cocks proved one of the great attractions of the Show, though shown among a whole host of by no means unworthy rivals. Most of the Game were exceedingly good, but several pens lost position from having the neck-hackles and saddle-feathers "trimmed," a practice that is not required by a good bird, and by no means improves an indifferent one. It would be well if the habit was abandoned altogether, though, we are sorry to add, it has now become far too general. Though there was a numerous entry of Game Bantams, the generality of them were not first-rate.

The Spangled Hamburgs were all that could be expected, but the Pencilled ones were not worthy of remark.

The Polish fowls were an exhibition in themselves.

The Brahmas, though including a numerous entry, were not such as might have been expected.

The Cochin classes contained many most excellent specimens, but the end of May is unfavourable to their being shown in first-rate condition.

The entry of the "Single Game Hens" was capital, but, perhaps, no task could have been assigned to the Judges more critical than the awarding prizes to Game hens, many of which were inveterately "broody."

The Duck classes for Romenes and Aylesburys were really deficient, but an unusually good extra Duck class made ample compensation. In this, Mandarins, Carolinas, Grey Calls, and some other varieties were shown in the highest possible perfection of health and plumage.

The extra class for "Any variety of poultry," contained Houdans, La Flèche, Guelderlands, Indian Game, &c.

There were also shown in the Bantam classes some capital Japanese. The "Selling Classes" for both Pigeons and poultry, were an entire success, the entries being most abundant, and sales were plentiful. These classes are, of late, generally well filled, and frequently, too, with birds superior to those shown for the general prizes.

The show of Pigeons was throughout, without question, remarkably good; so much so, as not only to elicit the highest approval of the Judges, Messrs. Hewitt and Tebbay, but also the warmest admiration of the many Pigeon amateurs present. In brief, the Short-faced Tamblers were perfection itself, as were not a few of the Pouters, Owls, and Toy varieties. The extra prize for the best collection of Pigeons was obtained by Mr. Yardley, of Birmingham, with a very meritorious and extensive selection.

All the arrangements were good; the Committee, themselves being amateurs, looked personally to every detail, and the result necessarily was, everything was scrupulously clean and in order. Under the present management we sincerely hope the Sheffield Committee may be able to secure for their town the high position a poultry show ought to maintain in the northern counties, where so many of our leading poultry breeders are located.

We published the list of prizetakers last week.

GIRENCESTER POULTRY SHOW.—Since my few lines on this Show last week, the schedule has undergone some change. A

Polish class has been added, and the second prizes increased in all the classes to 15s., the third prize being withdrawn except in the selling class, the restricted price in this class being fixed at £2. The Bantam classes and the Duck classes still have second prize 10s. In lieu of a silver cup for the best single cock in the sweepstake classes, the best bird in each class will receive an additional prize of 7s. 6d. This is a good alteration. The prizes are most liberal for the entry—viz., 3s., and wo southerners must trust that the Show will prove successful.—Y. B. A. Z.

NEW BOOK.

The Apiary: or Bees, Bee Hives, and Bee Culture. By ALFRED NEIGHBOUR. Second edition. London: Kent & Co., and Geo. Neighbour & Sons.

MR. NEIGHBOUR'S book, the first edition of which was noticed by us in February 1865, now makes its appearance in a new guise, being reduced from demy 8vo. to crown 8vo., whilst the number of its pages is increased from 134 to 274, with but a slight increase in price. In addition to a description of the various hives and apian apparatus sold by the well-known firm of which the author is a member, it contains a considerable amount of generally accurate information compiled from the best authorities, Mr. Woodbury's contributions to our pages being in particular heavily drawn upon.

A new feature in this edition is a couple of steel plates illustrative of the anatomy of the bee, engraved by Mr. E. W. Robinson with his customary ability; embracing also coloured delineations of the three sexes of the Ligurian or Italian variety of honey bee. Of these illustrations that of the queen is the best, the worker not doing justice to the elegant and graceful form of the original; whilst the drone is simply a faded cabinet specimen which has shrunk to the length of the worker.

Mr. Neighbour possesses a very great advantage over a mere compiler in that he is himself a practical bee-keeper, and divers anecdotes of his experience are related by him in a light and amusing manner. For this reason, also, the information conveyed in his pages is, as we have already stated, very generally correct, although he may occasionally be found tripping. For instance; it is stated in page 17 that the eggs of drones and queens "are hatched in warm summer weather, a higher temperature being necessary;" whereas a queen has been known to be hatched at Christmas, and natural drones frequently make their appearance in March, whilst in stocks possessed of drone-breeding queens they come to perfection much earlier. In page 22 we are told that "the cause of a swarm leaving the stock hive is that the population has grown too large for it," an idea which has frequently been disproved. In the new chapter on the anatomy of the bee we are assured that it is with the foremost pair of its six legs that "the bee unloads the little pellets from the baskets on her thighs;" we can only conclude, therefore, that the writer has never seen a worker bee perform this everyday and simple action. In page 169 it is stated that for the successful formation of an artificial swarm it is "necessary that the hive contain drones;" another mistake, as the presence of drones in neighbouring hives is sufficient. We are also told that when bees are likely to incommode workmen or others, instead of confining them, "it is better to move the hive a few paces." We certainly should not be disposed to envy either the workmen or the bees where such an expedient has been resorted to.

Mr. Neighbour copies the Rev. Mr. Tristram's erroneous statement, that the Italian variety of honey bee is indigenous in Palestine, and remarks thereupon—"Does not evidence such as this point to the conclusion, that the bees which Samson found in the carcase of the lion were *Ligurians*? and may we not further speculate that the ribs of the carcase constituted the first *bar-hive*?" Whatever may be thought of this latter rather fanciful speculation, it is certain that Mr. Tristram's evidence is incorrect, there being no doubt whatever that, as stated by Mr. Woodbury in our pages a few weeks ago, the Syrian honey bee is entirely distinct from that of Italy.

The engraving copied from Kleine's work and representing a royal cell on the edge of a comb protected by a wire pipe-cover, embodies an idea which, like others of our German friends, is more ingenious than practical. We were ourselves somewhat taken with it at the time, but having submitted it to the test of experiment in queen-rearing operations, we soon discovered it to be of no value whatever.

We cannot but think that a little more care might have been advantageously bestowed upon the index, which is frequently incorrect. A good index is, beyond question, a most valuable adjunct to a work of this kind; but one which so often refers the inquirer to a wrong instead of to the right page, is likely to prove a sore trial both of his temper and his patience.

Notwithstanding this drawback, Mr. Neighbour may be considered as having performed his task in a creditable manner, and substantially to have attained the end at which he professes to have aimed—viz., that of producing a "handy book which should contain full and detailed replies sufficient to meet all ordinary inquiries."

SPARROWS EATING LIVE BEES.

I SEE by a letter in your last week's Journal that we bee-keepers need not fear sparrows eating our bees, but only tom-tits perpetrating that enormity. Up to last week I was myself of that opinion, never having seen sparrows attempting apicide nor would I have believed any one who had told me the contrary, thinking they must have made a mistake. However, on Sunday last, in the middle of the day, I noticed one of these birds jumping up at the hives, and immediately flying a few yards off, and there hammering a bee held in its beak, and then starting off to its nest with the wings and legs of the insect left behind. In a few moments back it came again, renewing the operation, and this time accompanied by its mate, both of them flying away each with a laden bee. On further watching I not only saw this couple, but two other couples doing the same thing, each flying to its own nest and feeding their young. So rapidly were they doing this, that there was always one bird at least on the ground in front of my hives, and sometimes three. Hitherto I have rather encouraged these birds building round my house and stables, and at that time there were at least fifteen or more with young and eggs in various stages of progression. I immediately ordered their destruction, and the next morning my gardener told me he had found more than fifteen young birds, which, with six destroyed by myself, made twenty-one young sparrows offered up to the manes of departed bees.

I have kept bees for more than twenty-five years, yet I had never before noticed such an occurrence; and I believe it to be an exceptional thing, owing to the dry, harsh, easterly winds and cold nights preventing the development of insect life, upon which almost entirely the young sparrows are fed. Driven hard to find subsistence for hungry mouths, the parents had recourse to living bees, and dearly they have paid for their temerity. Whether this has been the cause or not I do not know, but most of my hives are very backward and no honey collected, whereas this time last year they were making honey fast.—A BLACKBETHAN.

P.S.—I have this day (23rd), had my first swarm; very large.

DO SWARMS EVER ISSUE BEFORE DRONES MAKE THEIR APPEARANCE?

My reason for asking is, that on the 14th inst. I opened my Ligurian hive, which I received from Mr. Woodbury in October last, and I could not find the queen, but I found five sealed royal cells. There were not the least signs of drones, drone brood, or drone eggs, and the population seemed to have decreased; and there appeared to be no breeding going on, there being no young brood in the hive. I opened the same hive again on the 18th inst., and found the royal cells being torn open, and the young queens, two of which were killed, making their appearance. I captured one, and placed her in a nucleus-box with a comb of bees out of the parent hive, and gave her a broodcomb out of a black stock. I also placed the comb containing the only royal cell that was not torn open into another nucleus-box, after having brushed the bees back into the hive, and added to it a black broodcomb well covered with bees. I could only find one more queen, which I left in the parent hive. Is it possible that the mother of the hive may have led off a swarm? or what do you think has become of her? They have never shown the least signs of swarming. There is not a single drone, either Italian or English, to be seen in my apiary, which consists of one Ligurian stock and five English stocks, all of which are in Woodbury hives, and the two nuclei before mentioned. I have been very particular to discourage drone-breeding among my black bees by cutting out all the drone-

comb as fast as it is built, so that my queens may become impregnated only by Ligurian drones; and now I have no drones at all. My English bees are breeding fast, but the Italians seem to be at a stand-still. If my Ligurian mother has gone off with a swarm, or met with her death, may I expect to keep my Ligurians pure under the present circumstances? or, in other words, will the young queens to which I have alluded commence and continue drone-breeding until they become impregnated by their own progeny? or would it be better for me to purchase another swarm or stock containing a good supply of drones?—A. R., Birmingham.

[Swarms rarely, if ever, issue before the appearance of drones; but in your case the question does not arise, there appearing, unfortunately, no doubt whatever that the Italian queen is actually defunct, and the stock must, therefore, continue to retrograde until the young queen becomes capable of recruiting the waning population. Notwithstanding the paucity of drones in your own apiary, we believe your young queens will succeed in their wedding flights. They cannot under the circumstances fail of being hybridised, as it is certain that they cannot be fertilised by their own male progeny. We do not see that you can do better than obtain another stock with which, under the circumstances, we doubt not Mr. Woodbury will willingly supply you at a moderate expense.]

BEES WINTERED IN THE UNICOMB HIVE.

I DEEM it worth mentioning, that I have managed for the first time to preserve a unicombe hive alive through winter and spring. In former years my observatory hives were always visited with dysentery in winter, and died out before the middle of March. To preserve the requisite degree of heat in such hives, the bees must draw very largely upon their stores; and if confined by reason of cold only ten days or a fortnight, their bodies become surcharged, and death or dysentery follows.

About the end of December last, the unicombe I speak of had dwindled down, through dysentery, to the merest handful of bees, and I had no expectation of preserving any bees alive in it till the middle or end of January. It occurred to me, however, that it might answer a good end were I to line the interior of the glass with paper to within 3 inches of the top. I did so, and angured well of the process, from seeing the excellent article of Mr. Langstroth on the employment of woollen cloth as a covering for wooden hives in winter. As soon as the paper was fouled by discharges, I renewed it. The bees lived and were healthy, and on the 22nd of March the queen commenced egg-laying. Unfortunately not an egg has been hatched to life, owing to the very small number of bees, and the hitherto ungenial season; but on the 8th of May the queen and her daily diminishing retinue were alive and vigorous, and, as the experiment succeeded in most hopeless circumstances, I have since joined the few surviving bees to another hive.

In the course of my experiments some interesting facts in connection with dysentery were evolved. For instance: a high wind blowing in at the mouth of the hive invariably brought on an attack, causing as it did the consumption of food to be doubled. Several times the bees approximated the description given by Mr. Woodbury of the complaint which he hypothetically termed dropsy. At the close of a gale many of them were greatly swollen, and emitted a fluid nearly transparent.

The advantage arising from the paper lining consisted in the facility of ascent which it afforded to the bees seeking egress in vain. A bee labouring under retention of the fœces has very great difficulty in ascending the cold glass, and often perishes in the effort. This accounts for so many in a dying state being found at the bottom of a unicombe glass hive after a cold night. From what came under my observation, I have little doubt that a paper lining would prove a benefit to box hives in preserving them from internal moisture, but as yet I have only partially tested it.

Contrary to expectation, I have two hives in boxes made of half-inch wood, which have wintered uncommonly well. They were unprotected in any way, and one of them contained only six frames. Though not intended for the purpose, they are at this moment good stock hives. Frequently in March, at 9 A.M., the thermometer indicated 14° of frost, but it did not seem to affect the bees in the very least, notwithstanding the thin walls protecting them. It must be confessed, however, that the past winter has, on the whole, been very favourable to the apiary. True, the hives are in a backward state, but a little

fine weather now would soon put them into a very flourishing condition.—R. S.

OUR LETTER BOX.

RAT TRAP (S. D. S.).—Our correspondent wishes to know where "Uncle James's Infallible Rat Trap" mentioned by the Rev. Mr. Rodwell, is to be purchased. We never found any traps superior to the common drop trap and the steel trap.

QUANTITY OF FOOD FOR FOWLS (Constant Reader).—It is an utter impossibility to answer your question. It depends entirely on whether there is any food obtained by them beside that which is given by hand. Farmyards, gardens, and grass fields teem with food for fowls and Turkeys. Ditches do the same for Ducks. You can easily make your own calculation. Feed one day yourself, let no one else have anything to do with it. Measure the food carefully. Give none but that which is thrown on the ground, and throw only so long as they will run after it; let none remain unaten. Feed morning and evening, with a moderate midday meal. The quantity will be a correct consumption to allow. It will differ somewhat at times; birds eat more in the winter than the summer, and those that come from hard quarters will, for a few days, eat voraciously; but they soon settle down to an average.

TEMPERATURE OF INCUBATOR (H. J. R.).—The proper heat in a hatching-machine is 104°. We are not able to state at present what maximum and minimum temperatures destroy vitality in eggs; but we are making experiments, and you shall hear the result. An extreme heat is, we think, more fatal than cold. Minasi's incubators can now be had, and are generally successful. Our columns contain the advertisement of them.

SPANISH CHICKENS (J. C.).—The principal thing to do is to induce as much growth as possible in your chickens. Let them have all the sun they can get. The semi-dark and confining process is necessary only with adults. The white face, so advantageous in Spanish chickens, is with them a result of maturity, and maturity can only be advanced or encouraged by taking every natural advantage. Fresh air and exercise are important ones. The faster your chickens grow the more their good points will be developed. You can show them as chickens till the end of the year, and afterwards, wherever there is a class for birds of 1866. After the faces are become quite white, it is well not to allow them too much light for some days before they go to a show.

COCHIN CHINA EGGS UNFERTILE (J. T. J.).—You do not say whether all the eggs from this hen were infertile. Those you mention are called "clear eggs," and would be as apparently fresh after being under a hen six months as they were the day they were put under. It admits of every explanation. There is no germ of life in the egg, and consequently there is no development; there is no life, and therefore can be no death; no chicken even if well sat on; no decay as if partly hatched and then neglected. We do not think much of your food; to add bran to the meal, is to stimulate digestion without giving it food to act upon. The attention of the cock has nothing to do with producing eggs, it only fertilises them. With regard to the one hen, we have long learnt, that cocks have their likes and their dislikes among their hens, and this will often explain why many bad eggs come out of a pen. It is not the fault but the fancy of the cock. He would seem to be in low condition, and we advise you to alter your feeding, by giving oatmeal or ground oats morning and evening, with whole corn in the middle of the day. We answer your question as to the sterility of the eggs, believing it has occurred now, lately; if it happened in the winter, there might be other reasons.

EGG-EATING HENS (F. M.).—It is believed that hens, in the first instance, eat their eggs because they require the shell to form that of eggs to be laid. They like the contents, and eat afterwards for that reason. One egg-eater will inoculate a whole yard with the practice. The best plan is to put some hard composition eggs in the nest, and to lay one or two about their haunts. They get tired of pecking these. Watch the chief culprit for a few days, and as soon as she has laid drive her from the nest and take the egg.

BARLEY-MEAL AS A FOOD (G. V. T.).—As a rule, fowls have great digestive powers, and meal possesses enough of the bran element to stimulate them without adding more, unless it be for convenience of storage or transit. We do not see what you gain by making bread or biscuit of your meal. Stake it with water; that is no more trouble than soaking the biscuit, and you save the labour and expense of making and baking biscuit. A more direct answer to your question is to say, bread or biscuit made of barley-meal, without the addition of extra bran, and soaked, will be very good food for poultry.

EGGS BECOMING PALE, &c. (New Subscriber).—You have little to complain of. Your fowls have laid and done well during three months. Towards the end of the laying, it is common for the eggs to get lighter. Nature is getting tired. Much of the shabbiness of the plumage may be attributed to the long-continued attentions of the cock; the rest to the fact they have worn the same clothing ever since last autumn, and it is getting shabby. As soon as they leave off laying, the strength that has produced the egg will be diverted into another channel, and will supply fresh clothing. Potatoes are not good food for fowls confined in a small space. They are not nutritive enough. Your midday meal is good; let that in the morning and evening consist of oatmeal slaked with water. Brewer's grains are too stimulating, and act injuriously.

PHŒSANT MALAYS (A. L. B.).—The Phœsant Malay has a plumage of very dark rich chestnut, with darker hackle, tail, and flights. The hens are more or less spangled in most cases, and the resemblance to the breast of a cock Phœsant has earned them their present name. The combs are red, rough, and flattened on the head; the legs should be yellow. They have other points in common with ordinary Malays. The cock has a darker saddle. They are not Game fowls. Their origin is from the East, but they have been crossed in England with Golden-spangled Hamburgs. The hens weigh about 4 lbs., the cocks 6 lbs. each. The Versicolor Phœsant is a native of Japan. It is not larger than our English birds. A pair of pure birds is worth about £14. Their colour is a rich purple, varying in shade and brilliancy with every motion of the bird.

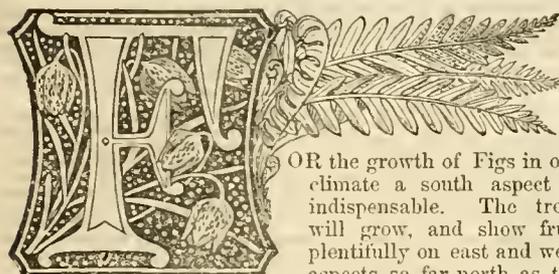
BEE-BOOK FOR A BEGINNER—ORNAMENTAL HIVE (H. S., Gedney).—"Bee-keeping for the Many" sent free from this office for five stamps. Messrs. Neighbour, 149, Regent Street, and 127, Holborn, or Mr. Pettitt, Spargate Street, Dover, supply ornamental hives.

WEEKLY CALENDAR.

Day of Month	Day of Week.	JUNE 5-12, 1866.	Average Temperature near London.			Rain in last 50 years.	Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Ago.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	Days	m. a.	
5	Tr	Adenandra amona.	70.7	47.1	58.9	22	48 a f 3	8 a f 8	morn.	45 a f 10	22	1 52	156
6	W	Adenandra uniflora.	66.8	47.7	57.2	21	47 3	9 8	18 a f 0	57 11	6	1 42	157
7	Th	Anthocercis viscosa.	68.9	47.2	58.1	15	47 3	10 8	45 0	after.	24	1 31	158
8	F	Aphelexis humilis.	70.2	46.8	58.5	15	46 3	11 8	14 1	26 2	25	1 19	159
9	S	Azaleas.	69.9	47.5	58.7	20	46 3	12 8	43 1	45 3	26	1 8	160
10	SUN	2 SUNDAY AFTER TRINITY.	71.1	47.4	59.2	19	45 3	13 8	16 2	8 5	27	0 56	161
11	M	St. BARNABAS.	71.7	48.1	59.9	18	45 3	14 8	57 2	20 6	28	0 44	162

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 69.9°; and its night temperature 47.4. The greatest heat was 99°, on the 6th and 7th, 1846; and the lowest cold 34°, on the 9th, 1862. The greatest fall of rain was 1.18 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

CULTIVATION OF THE FIG. ON WALLS.



FOR the growth of Figs in our climate a south aspect is indispensable. The trees will grow, and show fruit plentifully on east and west aspects so far north as the

Tweed, and yet they rarely, if ever, ripen a crop. Even on south walls in exposed and elevated situations the fruit ripens seldom rather than in general.

Soil.—The Fig tree does best on a warm soil—good sandy or light loam on gravel, and on such soil it will ripen a crop in the majority of seasons. On the other hand, if the soil is strong and cold the growth is great, and the fruit are large, but they ripen only occasionally, as during a sunny and hot summer like the last. Unless the soil be rather light and shallow, gravelly, and well drained naturally, borders affording these conditions should be formed. Dig out the soil to the depth of 2 feet 3 inches, and let the bottom slope from the wall to the front of the border, where there should be a drain to carry off the water. The bottom should be covered with 3 inches of concrete, which may consist of lime riddings laid on in thin layers, and beaten firm—it cannot be rammed too firmly; and on this place 6 inches of brickbats, broken stones, and similar materials. There will then be depth for 18 inches of soil, which may consist of the top 6 inches of a pasture where the soil is a loam of medium texture, and if there is gravel under, and even in the soil, all the better. Place a layer of the turf, grass side downwards, upon the drainage, and then the remainder, chopping it a little with a spade. The width of the border should be equal to the height of the wall. If the soil contains no gravel, one-sixth of brick and old mortar rubbish may be mixed with it. This will be a sufficiently rich soil for the Fig tree; for the difficulty is not in obtaining growth, but in securing strong close-jointed wood. For this reason the border should be made firm, for if the soil be free or loose the shoots will be long, and the leaves far between; and if the roots have an unlimited space to feed over, great abundance of wood and leaves will be the result. The roots, therefore, in rich soils should be confined within proper limits, or kept in poorer soil. On gravelly hungry soils these precautions are, of course, unnecessary, for on such the Fig grows sufficiently, and the less it grows the earlier it will show its fruit, and the chances of ripening are increased. It is an easy matter to make up for any deficiency in the richness of the soil by top-dressings of manure and copious waterings during dry weather, whilst it is difficult to control a Fig tree in rich soil by manipulations or stopping the branches.

PLANTING should be performed in the spring, before the trees begin growing, and the distance apart should be

20 feet for a 10 or 12-foot wall. Rather high walls are best, for the shoots of the Fig tree are rarely inclined to take a horizontal direction, but almost always seek the top of the wall. In planting, the ball should be broken, and the roots disentangled; lay the roots regularly on the surface of the border, and cover them with 4 inches of soil; this will give the appearance of a mound, which is all the better, as the top-dressings will raise the border, and in time sink the collar, which at all times it is desirable, and especially with fruit trees, to keep slightly elevated. The trees may also be planted in summer, when in full leaf, from pots. Giving a good watering after planting and during very dry weather will be all the attention needed during the first year.

THE BEST KIND OF TREES TO PLANT are those with one-foot stems; for when those with no stem are planted a number of shoots spring from a level with and even below the ground line, creating continual trouble, and weakening the tree to no purpose. Eyes put in in February or March will by midsummer have made a growth of 15 inches. The point being then pinched out, three or more shoots will mostly come from the upper part of the plant, as shown in fig. 1. This is what is generally termed heading a maiden tree. This is the tree I would plant. It will not require stopping again the first year, but in spring, after planting,



Fig. 1.

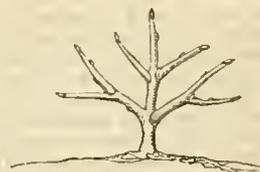


Fig. 2.

it will put forth more shoots than one from the point of each shoot. If all but two be rubbed off we shall by midsummer have the shape of tree represented in fig. 2. When five leaves are made, take out the points of the shoot at that. This stopping will give rise to two or more shoots, but only two of these are to be retained. If only one shoot come from or with the spring growth it is of no consequence, only stop that one at the fifth leaf. Distribute the shoots so that an evenly-balanced fan-shaped tree may be produced, allowing a distance of 9 inches between the branches, and by continuing to stop the spring shoots at the fifth leaf so long as the trees exist, sufficient side shoots will be produced to cover the wall evenly in every part; and whenever a deficiency of young shoots occurs in any part, they must be encouraged from the base of the branch so becoming bare, and after a year or two's growth the old branch may be in part or entirely removed.

From the almost constant necessity of cutting out the old wood preference is given by many to what may not inaptly be termed the stool tree, or that having many stems rising from near and below the soil. These trees never have the shoots stopped, but are allowed to grow as long as they will, training any shoots that may be produced from them so as to fill up vacant spaces, and when the old

parts become naked these give place to a new and young shoot, which in its turn is served in the same manner. By this system there is no difficulty in keeping the tree furnished with young wood, without which there can be no crop, the difficulty being rather in the opposite direction—viz., that of keeping the suckers from crowding the base of the tree. This kind of tree is represented in *fig. 3*.

It is rarely that we see standard Fig trees against walls. These, however, are most productive, for the mode of training seems to check the flow of the sap, and to concentrate it more fully on the fruit. Standards are desirable when a high wall is to be covered, as will be obvious from *fig. 4*. The trees are prepared in the same manner as those on one-foot-stems, only they are allowed to grow with a straight stem to a height of 6 feet, and are then stopped, and three shoots are allowed to grow upon the side branches, after stopping, instead of two, as in the former case.



Fig. 3.

which will cause the production of one at least, if not two, shoots, which are the midsummer shoots, as they are called, and upon these the crops that ripen are borne.

As the Figs are produced on wood of the previous year, and this never bears fruit again, young wood must be laid in so as to keep up a succession of it in all parts of the tree; and when any part becomes naked or deficient of bearing wood, that part should be cut out, and young wood brought up or down to fill the space. The best time to cut out the old wood is in spring, and when it can be done remove an old branch to the stem. After this the knife should not be used for a twelvemonth, in the interval merely disbudbing so as to have the growing shoots 1 foot apart, and stopping the shoots with the finger and thumb.

PROTECTION.—In our climate the Fig is not hardy, though it will survive in the majority of seasons; yet the fruit of the size of Cob nuts mostly perish, or are so injured as to fall in spring, if the trees are unprotected during winter, and in very severe winters the trees are often severely injured. In 1860, Fig trees in many places south of London were killed to the ground by the severe frost of December 25th. It is not safe to trust them without protection north of London, and even there the

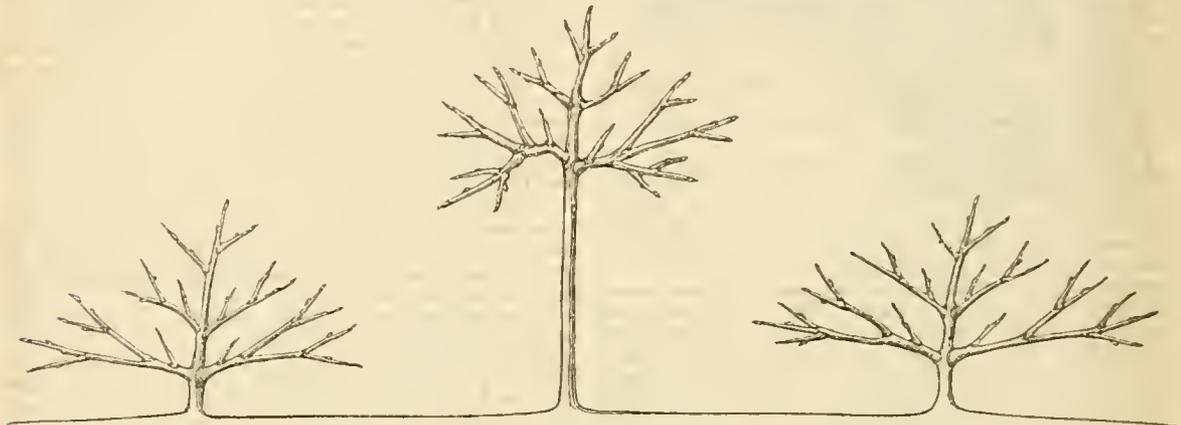


Fig. 4.

Fig. 4 shows the trees three years trained, by which it will be seen that a shoot is encouraged in the second year between the stem of the tree and the point at which the first stopping has taken place, and others between the several years' growth all along the main branches, and also upon the secondary ones, by which means the tree is kept furnished with bearing wood from the stem to the extremities of the branches.

PRUNING.—Figs upon walls produce their fruit upon the wood of the previous year. The spring shoots produce fruit which for the most part attains a good size, especially when such shoots are not stopped, but it never ripens, at least I am not aware of their ripening the second crop in England. If the spring shoots be not stopped they will grow a foot or more in length, and show no fruit; but after the first growth the second begins, and is remarkable for the stoutness of the wood and closeness of the joints, at every one of which, in the axils of the leaves, a little Fig will show itself. These short close-jointed growths afford the fruit that ripens in the following year. Without stopping it is rare that the shoots show fruit till they are a foot long, and then it is at their extremities only. This is the popular system of growing Figs, which wastes a foot space to secure from 3 to 6 inches of bearing wood, and is a most prolific source of naked branches.

Now, as the spring shoots are of no use for bearing, and waste the energies of the tree, their preservation is only essential as a means of obtaining wood to fruit in the following year. When the spring shoots have made five leaves pinch out the point at the fifth leaf. This will cause fruit to form in the axils of the leaves, and new, short, spur-like shoots to issue at the same time. These will show fruit by autumn, or it will be sufficiently formed in embryo to come in spring, and ripen in the autumn, whilst the fruit upon the spring shoots will attain a full size, but will not ripen, owing to a deficiency of heat. The spring shoots, therefore, as they produce a crop which does not ripen, should be kept in as little room as possible, and may safely be reduced to three joints, though when the tree is very vigorous it is better to stop at the fifth leaf,

trees must be protected, otherwise the largest of the young fruit will fall in spring or wither upon the trees, and the prospect of obtaining ripe Figs early in August will be destroyed. There is little prospect of obtaining a crop of Figs unless the trees are protected, for if the young Figs are fairly visible in autumn when the leaves are shed, and of the size of peas up to that of hazel nuts, they will not on an average of seasons ripen until the end of September, and very often not at all.

When the leaves have fallen a dry day should be chosen, and the trees, having their branches loosened from the wall and tied together, should be covered up for the winter. Some remove all fruit larger than a hazel nut, entertaining the opinion that if left it never ripens, which though generally correct sometimes does not hold good, for I have gathered what were large green Figs in the previous autumn ripe and very large early in August, whilst those of the size of a hazel nut or less were not ripe until the third week in August, or first fortnight in September. Had all the large Figs been removed the crop would not have been so early, nor would ripe Figs from the same tree have been produced for so long by weeks. In what way these large Figs can injure or rob the other Figs when the trees are at rest is to me inexplicable; and if they are so injured as not to swell in spring, they certainly do not rob those left of support, as it has been asserted they do. I think the removal of green Figs in autumn injurious to the tree rather than beneficial, for it cannot be effected without force, and Nature can do it herself in spring without any one knowing that the fruit had not ripened off.

Leaving, however, these matters of mere opinion and re-suming—the trees being loosened from the wall and brought into as little compass as possible without breaking them, place 3 inches of dry straw between the wall and the shoots, from the bottom to the top, fastening the shoots against the straw as the work proceeds. This will keep the straw up. Let the straw also extend beyond the spread of the branches, and cover these with 6 inches of straight straw, fastening it with tarred string. A thatcher will do this so that wet cannot

enter, and the Fig branches will thus be as dry as if they were in the middle of a haystack. The trees should be covered up in the above manner during the first dry period after the leaves have fallen, and before severe frosts occur. In this condition the trees may remain until the beginning of April, when the covering should be entirely removed during mild weather, and the trees protected at night and during frosty days with a double thickness of mats, removing them during mild weather. When signs of growth appear take off the covering by day in mild weather, but protect at night until danger from frost is past. The double covering of mats should be gradually reduced, first by removing one mat, and then withdrawing the other when danger is no longer apprehended. Under these circumstances the swelling and ripening of large green autumn Figs is not uncommon; but when a covering of a couple of mats only is given, then it is useless to expect them to ripen, though they may do so after an unusually mild winter.

The past season has been very favourable to the ripening of Figs, and in more than one instance have large autumn Figs survived the winter, and ripened at an earlier season than usual. The Fig noticed by "H., *St. Boniface Cottage, Ventnor*" (Vol. IX., page 91), was undoubtedly one of these large autumn Figs, as they are called, being a very early one, indeed the earliest ripe out-door Fig recorded in this country. I have a note of one gathered on the 3rd of August, from a wall so far north as West Yorkshire. "H.'s" Fig so satisfactorily accounted for by "G. S." at page 129 of the same volume, being the earliest recorded, I should like to know if there has been gathered in England a ripe Fig from the open wall prior to the 24th of July.

I may take this opportunity of thanking "G. S." for his hints on obtaining a third crop of Figs, and in his views I fully concur. What I had producing three crops was the Brown Turkey in a forcing-house. The Early Violet gives three crops very easily in a forcing-house, and is, besides, the hardest of all, and a most abundant bearer, but the fruit is small, and in my opinion not much in point of flavour. In an orchard-house in Yorkshire, except in 1859, it did not yield two crops, so that "G. S." has an advantage over northern cultivators. It produces two crops, ripening early in a heated house, such as a vinery, with occasional fire heat, or Peach-house having a little fire in spring to keep out frost, and in autumn to ripen the fruit and wood. The Brown Turkey and White Marseilles also ripen two crops in such houses, with occasional fire heat, in spring and autumn.

When the trees are only protected by a covering of mats during severe weather in winter, it is useless to leave the green Figs larger than a pea, all the others should be cut off with a sharp knife by the time the leaves fall. In our climate the Fig is usually leafless by the commencement of November, and begins to grow about the middle of May.

When the growth of the trees is weak, and the fruit small, a top-dressing of manure should be given in autumn, pointing in the short dung, and removing the litters portion in spring. This will not only protect the roots from frost, but enrich the soil. During very dry weather a good watering with liquid manure at 90°, will contribute to increase the size of the fruit, and to keep it on the trees.

The best kinds for walls are the Brown Turkey or Lee's Perpetual, White Marseilles or Naples, Brunswick; and for earliness and productiveness, the Early Violet may be added.

In conclusion, I would say, Avoid a rich soil, keep the shoots thin, have every part of the wall covered with young wood, tolerate no long bare shoots, protect the trees from frost, keeping the growth short; and if it is desired to obtain fruit with certainty, cover the wall and border with glass, having standard and dwarf trees planted in the border, or in pots standing upon it, and, to secure two crops, run two four-inch hot-water pipes along the front.—G. ABBEY.

SOWING VERBENA SEED.

UNDER this heading Mr. T. Pointon writes (page 405), commenting on some statements contained in one of my articles on the above subject. I agree with Mr. Pointon, that some seeds of the strong-habited kinds will vegetate in a fortnight; whilst others will not, as I stated in the article he comments upon, vegetate in two years.

Mr. Pointon must allow me, as the raiser of many good Verbenas, to be capable of describing my mode of treatment, and I believe my name is sufficiently well known to the readers of

THE JOURNAL OF HORTICULTURE, as a raiser of new plants, to inspire them with confidence in my statements. I have now a great number of small seedling Verbenas just peeping up, the seeds of which were sown in December, 1865. These, however, are from a bed where the seed-pans had been emptied out, as described in my former communication. I need not go so far as Birmingham to see a lot of seedling Verbenas, as I have in my possession some thousands. Many of them, I am happy to say, are very great improvements on existing varieties, and many of them destined to be the pioneers of a new race of that very popular plant. Should chance bring Mr. Pointon this way, I should be very happy to show him my stock. In the meantime, will Mr. Pointon kindly favour us with a paper for the Journal, describing his mode of treating the Verbena from seed or otherwise?—J. WILLS.

THE STORY OF MY FIRST ORCHID.

[We have lived—we will not say how many years—under the conviction that young writers, especially of the Eve variety, have great awe of editors, classing them with ogres, literally making their bread of correspondents' brains, and drinking from cups formed from authors' skulls: but the following communication dispels the conviction we had. It was accompanied by a note in which our ears are boxed with this sentence—"Editors, like other people, are difficult to please." We resolved at once to show Miss Mand that we are not difficult to please by inserting her "scrap," as she calls it in the note aforesaid—(rather a good retort that!) and by assuring her that we will insert such "scraps" as often as she pleases to send them, and the oftener she is so pleased the better.—Eps.]

I HAD a Dendrobium noble given me once—I think it was in the May or June of 186—. I must confess I did not know what to do with it; its thick white waxy roots were bare of soil. I had grown many things, but never an Orchid—the name sounded very terrible to me.

To ask our gardener would have been useless, for he would not grow Orchids—"didn't like them."

After a great deal of thinking I potted my plant after the directions given by some learned man, and yet with a vague idea that I only half understood him; but then, I fancy, gardeners' descriptions are like the cook's receipt, the most essential ingredient left out.

The Dendrobium grew and flourished. In the following year, as the young shoots grew, the leaves fell off from the old stem. I became very uneasy and sought professional advice. "Oh, the thing is dead, clean dead, sure enough," said one, "you have pinched it of water; the young ones may live, though, if you can winter them, but they are scratchy things to manage." "Your plant is not dead," said number-three gardener, whose opinion I sought, "it is in first-rate condition, will flower next spring; never does flower until the leaves fall off, and the stem is well dried-in."

"Will those dried bits of stick ever flower again?" I asked. "Yes," said one. "No," said another; "and whatever you do never let a drop of water touch your Dendrobium; that is the secret of Orchid-growing."

Another said, "Water it overhead many times a-day; it will not do without moisture."

Now, I did not do as the old man in the story did with his ass—if I had been a man probably I should—then my poor plant would have gone to the rubbish-heap; but being a girl—a woman—I did not take all for gospel. So I watered my Orchid when it needed it, which was very often during the hot summer weather. I kept it very clean, and think that is a secret of Orchid-growing, and when the autumn came and the heat lessened, I gave it less and less, sometimes sponging the leaves, and often dusting them with a clean handkerchief. Whether the treatment was right or wrong the plant grew and flourished.

In the autumn of that year there came a time of grief, and it was left untended for days, pushed out of sight behind a large Crenate Cactus—left, indeed, to its fate. Never shall I forget its appearance when pulled into the light; it was covered all over with the red spider: there needed no glass to find the insects out, they were plain enough even to the naked eye. Up and down the poor leaves they hurried in ceaseless crowds—hundreds, nay, thousands of them. Never was Rotten Row busier or gayer than those leaves as they stood in the full glare of the sunshine, red and yellow, and white and yellow green. There were fathers and grandfathers, and little ones, meeting

and passing and going on their way, as if each one had a special mission to perform, something to do besides life's sustenance to provide, and all this with an apparent enjoyment.

I watched them for a few minutes, then the syringe and cold soft water thinned their numbers—cut them down like the plague or rinderpest. The few left appeared to become larger and fatter, as if rejoicing in the rich pasturage; they were not left there long—no mercy was shown. In a week my *Dendrobium* was clean. The red spiders never came to it again; if they ever thought to do so, they were scared by some patriarchal hermit telling the sad tale of the terrible destruction of their "noble" city, and the almost total annihilation of the red tribe. Yes, the flood and storm and tempest had indeed swept over them, and the wonder where they had gone to could only be answered by the greater wonder where they had come from.

So for a short time the poor Orchid was at peace. It was no favourite save with its owner, and one thing must be said of it—it was like an ungainly child, attracting attention but never admiration. "I do not know what the thing is grown for," said the master, "a mere piece of stick—rubbish!" "It will never flower," said the gardener, "but be always just as it is now." "It is very crooked, let me straighten and tie it up for you," said cousin Walter (just home from school, where he had taken the first prize for botany, and of course he was very proud), "and allow me to rub off those strange protuberances." I screamed out "Stop, will you!" but it was all in vain, for suiting the action to the word, away went clusters of would-be buds. "Don't get into a passion, Maud. You will never make me believe the flowers come before the leaves, it is against Nature. Why, child, the leaves come to feed the flowers!" "You are a dunce, cousin Walter, with all your book learning. It never will have leaves on again; I am not sure it will ever flower after what you have done. I have cared for it, watered it, and kept it clean, and loved it for nearly two years, all for your great rough hands to knock off." "Nonsense, child, it never meant to flower there, or if it did, why there are lots of buds left. But see, I will show you where the flowers come from—out of the pseudo-bulb down here, and there is not the least appearance of growth." And cousin Walter pushed it close to a damp wall, and I tried hard to forget it, not even going to look at it for more than a week. When I did go, to my great surprise I found it standing in a warm, sunny place in a forcing-vinery. The flower-buds, unmistakable, were swelling on the old stems, and the leaves on the resting shoots were green, and thick, and leathery. Two or three weeks more and then out it burst into marvellous beauty, seeming to do all its work one moonlight night. There were five, seven—twelve blooms, all opening as if by magic to the May sun. And then the household flocked out to see the new flower, and the master said, "Who would have thought it!" and the gardener, "I could not have believed it; but then I never had much to do with such things." And cousin Walter lifted his hat to the fair lady flower, and said softly, "Oh! Maud, I am so sorry I knocked off the buds." And I looked at it, and loved it more, and said, "I will never part with it, for it was a gift," and the giver had gone "far away." So the troubles of the *Dendrobium nobile* were at an end.—MAUD.

LORD LYON PELARGONIUM.

In your report of the International Horticultural Exhibition I observe your reporter says: "Why Lord Lyon [Pelargonium] did not receive a first-class certificate we do not know." Permit me, as a great admirer and a grower in a small way of Pelargoniums, to express my great surprise that this really splendid flower was passed over by the gentlemen who awarded certificates to Alfred and Favorite. To my mind neither of these flowers was at all equal to Lord Lyon. It is possible, for I only saw the flowers on the Friday, that Lord Lyon might not have had a good bloom on it when the awards were made; if it had, I am unable to conceive any reason for passing it over.—P.

MESSRS. WATERER & GODFREY'S SHOW OF AMERICAN PLANTS in the Royal Horticultural Society's garden at South Kensington has just been opened, and will well repay a visit. Besides plants in splendid bloom of the best of the older kinds of Rhododendrons, and others rapidly coming on, there are several seedlings shown for the first time. These, and the exhibition generally, we hope to notice next week.

TOBACCO CULTURE IN ENGLAND.

The growth of Tobacco for fumigating, ornamental, or other purposes is a subject of some importance to the readers of this Journal, consequently I forward for insertion the following correspondence, the replies to my letters coming from an official source—viz., Inland Revenue, Somerset House:—

"SIR,—Can you inform me how much Tobacco, to be used simply and solely for fumigating-purposes in greenhouses, may be grown on English, Scotch, or Irish soil without infringing the law? May the quantity planted exceed one-half of one pole? See sec. 1 of 1 & 2 William IV., c. 13 (1831.) Is any person who grows more than the above-mentioned quantity for fumigating-purposes, or 'who sets, plants, or improves to grow' any Tobacco plants for ornamental purposes liable to a penalty, and if so, would that penalty be enforced?—X."

"SIR,—I am desired to acquaint you, in reply to your inquiries of the 1st inst., that the growth of Tobacco is absolutely prohibited in the United Kingdom, with the exceptions of any physic garden of either University, or a private garden for chirurgery, and in this case the quantity planted is not to exceed half a pole. The penalty for planting in any case, with the above exceptions, is £12 for every rod or pole of ground, and the Board would certainly feel it to be their duty to enforce the law in this respect.—W. C."

"SIR,—I am much obliged to you for your letter of the 5th inst., and the information contained therein. The only point I am now uncertain about is whether the word 'chirurgery' includes Tobacco grown simply and solely to destroy insects, &c., on plants in greenhouses or elsewhere in a private garden.—X."

"P.S.—As the subject is of great importance to gardeners and others who do not wish to break the law, would you mind my sending copies of my letters and of the replies for insertion in a Journal where the subject is now under discussion, as the law is at present imperfectly understood?"

"SIR,—Having laid before the Board your further letter of the 7th inst., I am desired to acquaint you in reply, that the exception to the absolute prohibition of the growth of Tobacco in the United Kingdom in favour of a private garden for chirurgery would certainly not extend to the growth of that article for the purpose of destroying insects on plants in greenhouses or elsewhere in a private garden. The Acts containing the prohibition and exceptions are the 12 Charles II., c. 34, 15 Charles II., c. 7, and the 1 & 2 William IV., c. 13. I am to add, that the Board have no objection to the publication of this correspondence if you desire it.—W. C."

The Acts mentioned will be found referred to at page 237 of your Journal.—X., Surrey.

NEW BOOK.

Garden Architecture and Landscape Gardening. By JOHN ARTHUR HUGHES. London: Longman & Co.

This is a useful and clever book, but, which was not to be expected, it is also an amusing book. It would be amusing if it were only by the style in which it is written. Gratiano tells us that "there are a sort of men" who so deport themselves as if they would say—

"I am Sir Oracle,
And when I ope my lips, let no dog bark!"

Gratiano, however, did not confess that he was one thus seemingly "dressed in an opinion of profound conceit;" but Mr. Hughes does not shrink from such confession, and so enamoured is he of his own conceits, that he blazons both at the commencement and conclusion of his volume, that he feels that no apology is needed for its "apparent dogmatism." Apparent! Why it is dogmatism pure and simple from end to end. We do not intimate that the dogmas are erroneous; but, then, if we are heretical enough not to believe in some, we are made to feel at the time that if our author were Grand Inquisitor of an architectural Inquisition, we should promptly be the prime performers in an *auto da fé*.

For example, he begins by saying "UNITY, that is to say, breadth." Now we, not having the fear of the Inquisitor to deter us, venture to say that "Unity is not breadth." There must be unity to render breadth pleasing, but they are not identical. Unity may be achieved even in a narrow space. Unity and harmony are synonymous in our opinion. Again, in illustrating "breadth," Mr. Hughes says that balustrades at the end of a walk should be divided by two piers into three

voids. Now, here we venture to differ from him. One pier in the centre, and only one void on each side, in our opinion gives a greater breadth, and is most pleasing to the eye.

As "breadth" required ten pages of illustration, we anticipated that to "variety" and "contrast" at least as many would have been devoted; but Mr. Hughes dismisses them thus—"The writer does not think that variety and contrast need any special illustrations, inasmuch as every one knows what is meant by these terms." It is quite true that every one knows what is meant by "variety," but it is quite as true that in garden arrangements nothing is more difficult to attain than harmonious variety.

Having thus dared to differ, let us next give a few brief extracts in justification of our opinion that it is a useful and clever work.

PARISH MAPS.—To many of our readers it will be new and useful information, that "there is a public office in St. James's Square, where may be found the map of every parish in England, and where a copy of any portion can be obtained for a very small sum, and in a very short time."

TREES NEAR THE HOUSE AND LAWN.—"Trees in any considerable quantity should not be suffered very near the house; they are causes of much damp. A Cedar is one of the least objectionable trees for such a situation, as it is dry in itself, does not check the current of air like an Elm or Beech, nor does it hold such a body of damp. The Pinaster is equally free from objection. A Yew or Thorn will do no harm, because they are mostly of small size, and will not screen large portions of the walls from the sun and wind. But when large Elms, Beeches, and Sycamores, are allowed to almost overhang the roofs, choking the gutters, darkening the rooms, and covering walls and roof with a green deposit, it is time for the sanitary inspector to interfere.

"All writers on landscape gardening agree that a hacking of trees is the best that can be obtained; and if there is any piece of timber on the ground which would form even the nucleus of an extensive plantation, its situation with respect to the house should be well considered. A house should not be nearer to a wood than 50 yards, but may be within half that distance of a mere row of trees. Some trees of a very marked character are necessary in the vicinity of the house, to give individuality to the place. Cedars and Wellingtonias are very well suited for this purpose. The Larch, when well grown, is a most graceful tree, little inferior to the Cedar. A Chestnut gives great character; as does a Tulip Tree. The Spanish Chestnut is very ornamental, but is only suitable where the park comes very close to the house.

"In settling the space to be occupied by the lawn, recollect the expense of keeping it in high order, and that every square yard adds to that expense; do not, therefore, give it too magnificent proportions on your plan, unless you are sure it will be kept up at that size.

"Nothing has a more comfortable English appearance than a well-kept lawn, though it cannot be valued as it deserves except by those who have missed it in foreign lands, where the well-shaven velvety lawn is unknown."

STYLE OF GARDENS.—"The style of the garden may at all times be later than that of the house. Changes of fashion and taste would affect the garden sooner than the house. In the one the whole external and internal decoration would have to be changed at great cost; in the other it is only the trouble of making or destroying a few walks and beds. A few loads of earth to make a bank, and a few yards of cutting, will materially alter the style of a garden; and as we are prepared for greater caprice, we are not shocked at slight incongruities. In digging up almost any old garden, remains of still older can be traced, and this in cases where we know the house itself has not been altered.

"The writer has always thought that the architecture of gardens should be to a certain extent florid—that is to say, more so than the house. Perhaps it is, that being in the midst of flowers, leaves, tendrils, and delicate forms generally, the transition to extreme simplicity is too violent, and shocks the spectator.

"As an example: A perfectly plain die or pedestal of polished granite or marble would be considered quite good enough, and, indeed, most appropriate to support a handsome vase, tazza, or bust, if within-doors, whether in sculpture-gallery, hall, library, or observatory, yet this does not look well in a garden, where a pedestal of fantastically carved freestone would be more pleasing. The glitter of the polished surface is destructive to all repose."

We cannot afford space for more extracts, although we have many marked. The work is illustrated by more than 130 excellent woodcuts, which render the author's directions and opinions readily understood.

PROPRIETORSHIP IN HOME-GROWN SEEDS.

A GARDENER having collected and dried seeds, having first supplied his master's garden, is the overplus the property of his master or for the gardener's own disposal?—X. Y. Z.

[The seeds belong to the master. His soil produced them, and he paid for the labour which cultivated and dressed them.—Eds.]

A PEEP AT THE WOODS IN ODD PLACES.—No. 5.

OIL PALM—CANE.

HAVING had a peep at the Mangrove, and a few of its companions, I will now shew a much more elegant, though not so noble a tree, the one being an exogen, and the other an endogen. Before shewing the lovely Oil Palm (*Elaeis guineensis*), I must ask my reader to follow me out of the Bonny river, where we are at present lying, into the New Calabar river—(these so-called rivers are only different arms of the delta of the Niger, to which sailors give these titles in consequence of the respective towns standing on them; thus amongst seafaring men the Thames is almost invariably called the London river, and the Mersey the Liverpool river)—and let us pass up stream through the salt marsh district until we reach the higher country, in which the *Elaeis guineensis* grows. As we want water for the ship, we will take a boat and some water-casks to bring it back, the boat's crew being composed of Crewe boys, since white men cannot stand the labour of rowing in the sun so well, and are more valuable on board the vessel.

The boat is now ready, so we will away. Between the Bonny and New Calabar river is a narrow channel formed by an island on one side, and a gently rising headland, or rather sandbank, on the other. This headland is most richly covered with fine Mangrove timber, and presents a very beautiful appearance, yet in spite of its beauty it bears a very evil name, being called Crucifixion Point, on account of a most horrible transaction said to have taken place there, in which a boat's crew were captured by the natives and eaten, with the exception of the officer in charge, who was crucified on one of the trees, head downwards, and there left to die. He was discovered and taken on board his ship, where he lived long enough to narrate the story, and then expired. Though numbers of the natives suffered for this foul deed, the actual perpetrators were never known, but one chief in particular was suspected on account of his acknowledged detestation of the whites, and his penchant for cannibalism. Our boat, however, has fortunately escaped safely through the pass, and is now floating in the New Calabar river, so let us turn our faces up the stream, and make the best of our way to the town, for here we shall have to stop for a few hours to enable us to obtain a native to act as pilot and interpreter, for we are going into a country in which neither English nor the Crewe language is spoken or understood; and as we shall be compelled to hold some communication with the natives of the different territories through which we must pass, all of whom are troubled with the bumps of pugnacity and cannibalism, it would be unpleasant not to know what they mean, should they tell us to stand and deliver some portion of our goods, or demand an explanation of our presence in that country. We should, of course, feel it extremely unpelished conduct on our part to go on without returning an answer to what might possibly be a polite speech, through our barbarian ignorance of their euphonious language, the verbal mode of communication of any of these tribes seeming to be carried on by sounds varying in sweetness from the bass grunt of a pig to the mellifluous nasal whine of a thorough-bred Yankee.

Passing up a fine wide river lined on both sides with magnificent foliage of all descriptions, from various kinds of grass to enormous timber trees, we came in sight of the vessels lying moored off the town of New Calabar, the natives of which town have, as I see by a recent account in a Liverpool paper, been indulging in their old offence of cannibalism, for having gone to war, or rather made a raid upon the Brassmen, and taken a number of prisoners, they, according to custom, killed and made a feast of them. But this having nothing to do with our present trip to view the Oil Palm, we will leave them, and having taken our guide and pilot (who is likewise responsible

for our welfare) on board, we will proceed on our journey; and as the reach of the river in which the town stands is a long one, we will take this opportunity of describing the guide before entering on the more interesting country. Our pilot is a gentleman of most decided colour, being as black as the ace of spades, with lips of most astounding size; his nose looked as if made of black shoemaker's wax, which one day, whilst its owner had been lying on his back in the sun, having been exposed to too great a heat, had become softened and had flattened and spread over a large portion of his face. Notwithstanding the general want of comeliness of his features, and what would be the whites of the eyes in Europeans, in his being ochre-coloured, the boy, for he was only about fourteen or fifteen years of age, was a very easy, good-tempered being, and contrived to make himself much liked during the time he was with us. He was one of the numerous sons of the king, and a great favourite of his father, consequently, a person of some importance, and, therefore, of no small value to us as a guide, especially as all the tribes through which we went were, to some extent, inimical to whites. After rounding the first bend in the river the stream became narrower and more rapid; and though it was now getting on towards evening we continued to row on, for I was anxious to gain a wider part of the river before dark, which our guide assured me could easily be done if the Creve boys would row well; and he was right, for success crowned their labours, and we dropped anchor for the night in a fine wide reach, which was about 500 or 600 yards across. We had been pulling since noon through a beautiful vista of noble trees and twining plants, to all appearance growing out of the water, for the land is so low and swampy that it seems scarcely to rise above the level of the water, especially as the most lovely little watery ways open in all directions, looking like green country lanes branching off from the main high road; and here was constantly to be seen a solitary canoe paddling away at full speed, or some lazy old alligator swimming leisurely along. Flocks of parrots, too, screamed about amongst the trees, and now and then a wizen-faced monkey would pop his head round some branch of a tree, and then spring chattering away. With regard to alligators, they here seem to be held in as much respect as the sharks are about Bonny, for we passed a number of small houses about 3 feet square, made of a kind of bamboo frame covered with white calico, on examining which we found some Oil Palm nuts, a pair of live white fowls, and sometimes a kind of cake or bread. These our guide told us were juju—that is, sacred, and were intended as sacrifices to the alligators, with which the river swarms, to propitiate them, and keep them in good humour. Now, we being hungry and partial to poultry, personated their sacred highnesses the alligators, and took the fowls wherever we could lay our hands on them; and I must give our guide credit for being more enlightened, or else sunk in much deeper ignorance than his countrymen generally, for he took to robbing the juju-houses quite as readily, and to the full as eagerly as the unbelieving white men.

Early next morning, indeed before daylight, there being a beautiful moon, we have anchor and continued our onward passage. About sunrise we came to an extensive open space more than half a mile across, where a number of the arms of the delta converged, and which was dotted with numerous small islets, most exquisitely clothed with tall green grass, and various kinds of tropical plants, chiefly shrubs. Faney what must have been our delight on suddenly coming from a long straight strip of water not more than 150 yards across, and closed in on both sides by a wall of tall forest trees, to emerge at once upon a lovely scene like this, especially lighted up by the glorious slanting rays of the rising sun, bright and cloudless as it often is in the tropics, throwing one portion into sombre shade, whilst the other appeared still more brilliantly illuminated by the contrast. It was a scene of such surpassing loveliness, that I have never looked upon the like since, and I have never forgotten it. This beautiful spot stands between the territories of the Criquei-men and the Booqui-men, and we had not gone far into the possessions of the latter before an amusing incident took place, showing how small the communication is between the whites and these tribes. We saw a party on shore around a fire, and our guide told me they were drying fish, so I asked him to procure some, which after a good deal of coaxing to prevail on them to approach, they never having seen whites before, he managed to effect. He induced these poor wretches, by setting them the example, to taste some ship's biscuit, which seemed to be quite to their liking; he then persuaded them to taste some sugar, which they had no sooner done than they paddled ashore to their companions as

hard as they could go, exclaiming, as our pilot interpreted to us, that the white men had some salt which tasted like honey.

Having passed through the Booqui territory, we at length came to that of the Ebo or Elebo-men, in which the *Elais guineensis* grows, and where a large portion of the palm oil, obtained in this part of Africa, is manufactured. The inhabitants of this district are a powerful, warlike, treacherous race, and much superior to the tribes surrounding them, all of whom seem to stand more or less in awe of them. Here, then, is to be seen the beautiful Oil Palm. It is a tallish tree, and, like all the other Palms, has a long straight stem and an elegant head of feather-like leaves, beneath which grow clusters of fruit, berries are perhaps the best name for them, which, when fully ripe, are of a deep orange or red colour. These berries being ripe are gathered and placed in a vat, where they are subjected to pressure, and the oil is thus expressed. That which comes first is called not palm oil, but palm butter, and is the very finest of the oil. It is used by the natives as we use butter, and when fresh is a delicious substitute for it, being very much of the consistency of fresh butter, but of a beautiful deep orange colour. The oil after being expressed is put into large casks or puncheons, which are supplied to the natives by the white traders, who are principally in this neighbourhood Liverpool merchants, the trade itself having originated out of the slave trade in the following manner:—The late Sir J. Tobin, of Liverpool, sent out to the coast of Africa a vessel to be loaded with slaves, but whilst she was loading news came that the slave trade was abolished, and, therefore, another cargo had to be found. The vessel being plentifully supplied with soldiers' buttons (then a great article of trade), beads, and other commodities suitable for the traffic in niggers, and palm oil, at that time almost unknown in Europe, being tolerably plentiful, a portion of a cargo was at once procured, enough to bring the ship home in more than ballast trim. This was sold at an enormous profit; and other vessels were at once fitted out to trade for this article, which now forms a large item in the imports of Liverpool.

The oil when brought down to the vessels for sale is often most enormously adulterated, either with water, mud, or sand, and its quality and consequent value as far as these adulterations go is ascertained in the following manner:—A long, steel, half-cylinder, in which are compartments, the flat surface of which is fitted with a slide running the whole length of the instrument, is thrust through the bung-hole to the bottom of the cask, and then the slide, which has been drawn up, is pushed down, of course enclosing a portion of oil in each division. The contents of these compartments are separately emptied into a copper frying-pan, and heated over a fire, when the oil, which is thick, becomes melted, and quite fluid; then the water and dirt, or water or dirt, sink to the bottom, and the oil is poured off, leaving these adulterations in the pan, and thus showing to what extent the oil is impure. If the oil is taken the cask is hoisted on board the ship, and boiled in a large iron vessel, the oil itself floating on the top, and the impurities sinking to the bottom; the former is then drawn off, and, whilst hot, run into casks stowed in the hold of the vessel, which, when full, are carefully bunged-up, and another tier stowed, and so on till the ship is loaded.

The vessels engaged in the palm-oil trade have to remain generally for months in some river on the coast of Africa, and as all boiling, &c., goes on upon deck, the first thing done after mooring ship is to house her in. For this purpose the upper masts are brought on deck or sent on shore; large spars are lashed high up between the lower masts, and from these long poles are sloped down nearly to the sides of the ship in just the same way as the roof of a house is formed; across these, again, lighter poles are lashed, making a trelliswork, and over the whole mats are sewn in such a manner as to make a covering impervious to rain, and, of course, to the sun, which in the tropics is at mid-day, indeed for the greater part of the day, unbearable to Europeans. These mats are made of the pith, or rather inside fibre of a species of cane, which grows up the country. It is a most elegant and beautiful plant, growing from an immense crown after the manner of some of the Grasses, each frond or leaf varying from 10 to 18 feet or more in length, tapering from the root to the top, and having opposite pairs of lance-shaped leaflets running all up the leafstalk, the pairs being placed nearer together as they approach the apex, but at the base as much as 3 or 4 feet apart. The main rib is semi-cylindrical, and is covered with a strong silicious coat, which is stripped off, and being very durable and elastic—indeed, almost as much so as whalebone—is split into thin

slips, and when bound together is used for brooms, and by the natives for many other purposes; whilst the inside, which greatly resembles the inside of the common Rattan, though of much looser and softer fibre, is ripped into slips, and sewn together by the natives to form mats, which they use for building their huts. They are also used by Europeans, as I have mentioned above, for roofing or housing-in their ships, likewise for dunnage and various other purposes.—A SURGEON.

NEW ZEALAND VEGETATION.

A GARDENER residing amongst us here has been on a botanical excursion to our West Coast gold fields. He has just returned, and brought with him a collection of native Ferns and other specimens of plants. I send you what he wrote in one of our local newspapers:—"A portion of them are intended to be cultivated here, and the remainder to be transmitted to England in Wardian cases. Some of them are of great beauty, and comprise many specimens not hitherto classed in any botanical work on the Flora of the colony."

He describes the Mosses found on the West Coast soil as being of a very curious and interesting character—"many of the trees in the bush being so enveloped by pendent Moss, that it is difficult even for a practised eye to distinguish their species." I had the pleasure of seeing some of his specimens in a dried state at our late horticultural show, but I am not able to pronounce much about them; still, if they are really new, they will be a great acquisition for those who love Fern-growing. When they arrive in England, either dry or alive, no doubt we shall soon find out their real worth, and whether they have hitherto been "classed" in any botanical work before. I am sure that it is a fine (new) field now open for a collector from England.—WILLIAM SWALE, *Canterbury, New Zealand.*

THE INTERNATIONAL HORTICULTURAL EXHIBITION.

On the evening of May 31st this most splendid Exhibition closed, and we visited it during its last day; but we regret that we did so, for it was like listening to a harp from which some of the strings were away and others out of tune—the harmony was gone. Though the "banquet-hall" was not quite deserted, yet many were the "garlands dead." None of our "friends linked together" were there; and the few visitors adjourned at intervals into the Royal Horticultural Society's garden, and ate bread and cheese out of pocket-handkerchiefs, and drank cold toddy out of green-glass medicine-bottles. There was no intense absorbing interest in the plants as during the first days. Roses were faded; Oranges were fallen; the graceful *Dacrydium* was exhausted; the *Pelargonium* flowers were scattered, and so were those of the smaller *Azaleas*. The *Caladiums* were curled up, and some, as *C. argyrites*, dead; the *Amaryllises* were browned; the *Orchids* were nearly all carried home; and other plants were set wide and poverty-like apart to fill up vacancies.

Yet by far the larger portion of the plants were in full vigour. The larger *Azaleas* looked as bright as they did on the first morning; the *Rhododendrons* were more striking, for their noble heads of flowers were fully expanded; and the water at the foot of the rockwork was quite clear, evidencing that its turbidity at first was occasioned by the cement lining the basins being then unhardened.

It savours of cynicism to dwell as we have upon the unavoidable falling away of the beauty dependant upon short-lived flowers; but not a shade of ill will actuates our remarks—they arose simply from regret that there should be any weakening of the memories of that bright and graceful Exhibition, now a thing of the past. It was indeed a most brilliant and most successful concentration of gardeners' achievements; and in years to come, when a similar Exhibition is secured, it will be sufficient praise if truth is in the decision, "This equals the Exhibition of 1866."

One of the woodcuts which accompany our pages to-day represents a portion of the Exhibition which was decidedly the most attractive. Its foreground was occupied by the marvellous *Azaleas* from Mr. Turner's nursery—marvellous not only on account of their size, but of their skilful cultivation; and this foreground, flanked by the elevations crowned with tropical vegetation, by the rockwork and its Ferns, freshened and enlivened by the cascades, combined in one view fragments of each picturesque feature of the Exhibition.

The other woodcut affords a specimen of each of Mr. March's table decorations—the larger being one of the three for the dining-room, and the other of the three for the drawing-room. Such ornaments for the dining-table are confessedly the most difficult arrangements that taste has to achieve. If very dwarf they are insignificant, except to the guests beside them; if of medium height, and closely ornamented with flowers and foliage, they intercept all *vis-à-vis* communication, and destroy the effect which ought to be produced by the *tout ensemble* of the table. If tall, so that a portion of the floral decoration is above the heads of the guests, and the remainder on the level of the table, the effect of those separated portions of decoration is extraordinarily weakened. Mr. T. C. March's designs, we think, avoid all these defects. Though of medium height, the upper part is of a form not to obstruct the eye of the guest in any direction, yet the floral decoration is sufficiently raised to entirely rescue it from being considered insignificant even by the guests most distant from it.

THE DINNER-TABLE DECORATION had on the *centre* device blue and white Iris and double Narcissus, foliage of the same, and a few Ferns and variegated leaves in character. The border had small plants of Lily of the Valley and of Ferns, intermixed with Ivy. The *two side* devices, rather smaller than the centre, bore crimson and rose *Rhododendrons*, with buds and foliage of the same; a few variegated leaves; *Virginian Creeper* leaves round the top border, and some *Maiden-hair Fern*.

The frame of each of the devices, or *epergnes*, was of solid glass, and rested on a plateau of silvered glass ornamented with glass chain work, and there were three corresponding chains of glass from the top to the base.

The specimens shown were intended for a large banquet or buffet. The proportions would require to be reduced for an ordinary dinner table.

The dinner-table decoration exhibited by Mrs. Lermite, of Finchley, to which the first prize was awarded, consisted of three circles of looking-glass, having an edging of Ferns, *Lycopods*, and a few flowers interspersed, with a few taller fronds, and pieces of the white-variegated *Cyperus alternifolius*, standing above the rest, or hanging over the glass. The central glass, which was the largest, was arched over with white coral, partially concealed by fronds of *Adiantums* and *Golden Fern*. Altogether this was a tasteful and elegant arrangement, which did the exhibitor much credit.

THE DRAWING-ROOM DECORATION from Mr. March had for its flowers Lily of the Valley only, with the exception of a purple *Lælia*, with three blooms, in the centre, a few variegated stove plant leaves, and Japanese *Honeysuckle* twining up the stem. There was a glass rod in the centre, to which were attached three light glass chains, and the glass dish supporting the rod was placed upon a silvered glass plateau encircled with crystal beads.

THE BOUQUETS had one marked superiority over those exhibited in previous years—they were of moderate size, the largest were not much more than 6 inches in diameter. Last year they were full 9 inches in diameter, and appeared a cumbersome rather than a decoration to the bearer. In form, too, we marked an improvement. They were all more tending to the pyramidal, whereas formerly the object seemed to be to form a huge disc, more fitted to fill a *tazza* than to be held in the hands.

One departure from good taste, however, still prevailed, and admits of no defence—namely, bordering bouquets with blonde lace and vandyked paper. It is an offensive mingling of the natural and artificial. If a fringe to a bouquet is needed it should be slight, and of the *Maiden-hair* or other delicately-fringed Fern.

The Bride's Bouquet, exhibited the first day by Mr. Lucking, which won the first prize, was composed of Orange blossom, *Stephanotis*, *Gardenias*, white Roses, Lilies of the Valley, white *Azaleas*, white *Primulas*, *Maiden-hair Fern*, and *Myrtle*. This had faded by the second morning, and was replaced by a bouquet, the first row of which was of white *Primulas*, the second of white *Geranium*, the third of Orange blossoms, the fourth of *Stephanotis*, the pyramid completed by sprays of Lily of the Valley.

A very competent judge has furnished us with the following notes:—

"I confess being somewhat disappointed in the collection of decorative objects, as a whole, that were entered for competition at the late International Horticultural Show. Certainly there

were some good designs, and one or two new ones deserving of further improvement; still, as a whole, they did not exhibit that advance which so many of the other features of the Show presented over its contemporaries. The window-boxes offered little but what may be met with in most squares in London, the hanging-baskets were not by any means good, and the head-wreaths were confined to one set. The plant cases for drawing-rooms, however, were good; and there were some good designs for dinner and drawing-room table decoration, the former especially being well represented, and deserving of special notice as a class.

"Excellent and meritorious as was the arrangement of the plants which constituted by far the most important feature of this remarkable Show, the same care and attention to grouping the objects here alluded to were certainly not exercised—in fact, it is not saying too much to observe that many visitors never saw them, they being arranged in the arcades at the farthest end of the Horticultural Garden, near the conservatory; and even there they were placed without that regard for general effect which was manifested in the tent. They were, however, near enough the observer to be scrutinised in detail; and a fair competition was entered into for the prizes for DINNER-TABLE DECORATIONS; and one or two departures from the original design of the Misses March showed an advance in the right direction. I must, however, first endeavour to describe those to which the prizes were awarded, and in doing so I at once admit that I cordially agree in the judgment. The first prize was awarded to a neatly dressed glass basket, the bow or handle scarcely exceeding 10 inches high, measuring from the table-cloth; but springing up by the sides of the handle were glass sprigs resembling some of those fine forms of marine production so often met with in collections of such things. This, being white, but not transparent, formed a nice groundwork on which to lay a Fern or other foliage; and in the example given only one small frond was reared against this glass hedge, and it was ample. The body of the basket was also very sparingly dressed, and that, too, with very common things; and the whole befitted either a dinner table, or, if taken singly, each of its parts might do for the drawing-room. I have said that the whole framework and its dressing were low—not exceeding a foot high at most, thereby enabling company seated at table to have an unlimited view of each other, as has been at times urged by writers in this Journal.

"The second prize was for a return to what may be called the March design of years ago, though in point of artistic merit the design fell short of it. It was a top dish elevated on an ornamental stalk, with the bottom dish divided into compartments, each containing some good specimens of fruits, as Grapes, Strawberries, &c. Valuable flowers tastefully arranged in the dressing of it gave it an imposing appearance. There was, however, a sort of intermediate stand or dish up the side of the central stalk, which might, if not carefully dressed, interfere with that important feature which it is evident the Judges wished to keep clear—that is, the line of vision.

"The third prize was given to Mr. T. C. March's design, which I hope to see again exhibited in a reduced form. A glass stalk rose perpendicularly from the centre of a circular glass mirror, and from the outer edges of this mirror glass chains connected it with the top of the central stalk. These glass chains were not by any means small and fragile, but sturdy-looking links, stouter than those of iron that are used by waggoners for yoking horses, and they, not being tight, gave a graceful and easy bend to what was in reality a brace. The outer rim of this mirror was very tastefully dressed with flowers and foliage; and a little, but very little, of these was laid against the three chains, which formed so important a part of the design, the whole requiring very little of either flowers or foliage. It was the impression of many that this design was the most meritorious one shown, and I am inclined to the same opinion; but it was much too large, and I hope to see it reduced quite one-third in all its parts.

"Following these was a design at once novel and pleasing. A central stem rose from the bottom dish; and midway up this stem branches, hooked at their ends, projected a little way on each of the three sides, on which small baskets were hung, there being a small top dish as well, but the latter, of course, fixed. The whole apparatus was of glass, and I hope to see it again, or some modification of it; unfortunately, it struck me at the time as not being very neatly dressed, otherwise it might have stood a better chance. It was, however, superior to many that were there, and as a move in the direction of furnishing

something in the way of a glass cpergne, I expect to see it further improved; as it is, it may be dressed without the pendent baskets, but the latter seemed to give it importance.

"The other designs were mostly such as have been described in the reports of former shows, and with one or two exceptions were all pretty well done. One entry, however, in this department had evidently been intended for the next number (222), table plateau, as it presented a series of scrollwork, being composed of slight metal troughs, not more than 2 inches wide, and not so deep, which being clothed with flowers and foliage looked pretty well; but occupying, as it did, a space of nearly 6 feet long by 3 feet wide, its presence on the dinner table could not be tolerated. The term, however, is evidently not well understood by exhibitors, as the only entry fell short of what was considered to imply a table plateau, and I am by no means sanguine that this will ever be popular. It may be all very well to copy a fashionable flower garden, and give its details in miniature, but such things partake more of the toy than of the ornamental.

"FLOWER-STANDS for the drawing-room table were supplied by Mr. March, and to one of them the first prize was awarded. It resembled in some degree one of the prize dinner-table designs, and was tastefully supplied with flowers, not profusely as were some others which were passed by, but carefully and neatly arranged. I nevertheless think that designs for stands in this department may be yet further improved, and if manufacturers would take the hint and supply us with something that required but little dressing, they would confer a boon on those whose means are limited. I had the first-prize design for a dinner-table decoration as a step in the right direction, and trust to see others equally economically arranged with regard to the flowers required to furnish them.

"PLANT CASES for the drawing-room were shown in tolerable numbers. Here, however (especially in the prize ones), the merit of the article was more due to the manager of the plants inside than to the manufacturer; they were mostly glass cases, plain at bottom, with curved or arched tops, and might contain from 6 to 10 or more cubic feet. The plants generally employed were Ferns, Lycopods, Sedums, and the prize case had a Cactus in flower in it. Most of the cases were planted so as to show the contents on all sides, and many of them were well done, and contained excellent selections of plants; but it was evident that some had been got up for the occasion, and their good looks were not likely to continue. I would commend this branch of the ornamental department to the mechanical world, for it is evident that much improvement in the make of such stands may yet be effected, while still more may be done for window jardinets, which are as yet far from being complete.

"WINDOW BOXES were of the usual ornamental type, and appeared to be composed of Staffordshire pottery; perhaps some were enamelled slabs, and possibly others of iron. A very prettily filled box obtained the first prize, the plants being Lobelia, Geranium, Calceolaria, Mignonette, &c., all well flowered. Those from the other competitors in this class were not so well managed; the box itself in the prize one was not the best, but its contents were exquisite.

"HANGING BASKETS were badly represented, and I do not wonder at it. Plants suitable for this purpose cannot be put in at the moment and made to look well—they must under any circumstances have a few days to re-arrange their foliage; so that to look well they ought to be carried to the Show intact, which is not easily accomplished. The baskets to which a second prize was awarded were not hung, and, consequently, could not be judged of properly. There was one exquisite basket of Maiden-hair Fern, but the conditions required three. Another set was entirely filled with *Draconas*, not by any means adapted to the purpose, for which, in part at least, pendent plants are indispensable.

"WEDDING BOUQUETS were rather numerous, but the make and material of one represented the many. Wedding bouquets as a whole are not showy, the absence of coloured flowers is against them. Camellias, Azaleas, Stephanotis, Roses, Orange blossom, with sprigs of Lycopodium, Ferns, and now and then Myrtle, formed the principal flowers used, not forgetting Lily of the Valley. Generally the bouquets presented the usual Mushroom shape, the flowers flat and formal, which was, however, relieved by a spray of Adiantum, or some other Fern overlying the mass. One or two exhibitors had attempted to modify the stiff Mushroom-headed outline by inserting sprigs of *Spiraea japonica* and other flowers of like character; but the misfortune is, that such bouquets will not bear the ordinary usage of being held horizontally

and obliquely, in which ways, as a matter of necessity, they must be held. Doubtless, it was for this reason that the prizes were awarded to bouquets of the ordinary form, as practice has found out that they endure the wear of use best. I was, however, glad to see, that the largest of these monotonous objects were passed by, and I hope to see a further reform in these monsters. Much allowance, however, must be made for these things, as the public are very jealous of any innovation, and I noticed one very nice bouquet to which no card of approbation was affixed. Its flowers and arrangement were faultless, but it had in addition a few sprigs of "Forget-me-not," which, independent of the poetic feeling attaching to the name, improved the appearance of the bouquet very much; but I suppose it was not held orthodox, and if allowed, Roses of colour, Heartsease, and many other plants alike poetical and emblematical might claim a place, so that, perhaps, it was best to exclude it.

"BOUQUETS FOR BALLS were in great force, but did not present anything remarkable in outline. I have for some time regarded these objects in much the same light as if they were made of wax or artificial work, so truly mechanical are they in their make, and when dissected it will be seen that wire forms a very important item in their construction. Generally on passing through the middle row of Covent Garden, one may see some examples of the class of bouquets here described, and quite as good. As a whole they were much too large, but the flowers were good.

"HEAD DRESSES OR WREATHS were shown only by one exhibitor, and I think such ornaments cannot well be exhibited without something else with them. The foundation of the flower-wreaths I think ought to be defined by something which the merchant of finery can enter more fully into than I can do; at the same time natural flowers as objects of ornament cannot be too strongly advocated, but let moderation guide the manufacturer. The example at the Show was certainly too bulky."

THE following is an approximation to the number of visitors to the Exhibition during the past week—viz., Monday, 16,000; Tuesday, 30,000; Wednesday, 25,000; and Thursday, 11,000.

In giving an account of an Exhibition so extensive as that which has just closed, where the subjects numbered thousands and covered acres, many omissions have occurred, and these, as well as a *resumé* of the papers read at the Botanical Congress, we purpose to supply in future Numbers.

ON Friday and Saturday last Mr. J. C. Stevens, the well-known Auctioneer of King Street, Covent Garden, held a sale of plants exhibited by Messrs. Bull, Lee, Standish, Turner, Lane, W. Paul, Fraser, Ivery & Son, Jackman & Son, Osborn, J. Verschaffelt, and others. The following are the prices realised by some of the lots:—Three specimen *Hollies* from Mr. W. Paul, £2 8s. and £2 10s.; a specimen *Taxus cheshuntensis* and *T. Dovastoni*, £3; *Thuja gigantea aurea*, £4. From Mr. Fraser, *Lea Bridge*, *Azalea Etoile de Gand*, 2½ feet by 2, and *A. Lateritia*, 4 feet by 2½, £3; *A. Perryana*, 4 feet by 2½, and *A. Lateritia*, 3½ feet by 2½, £3; *Pteroma elegans*, 4 feet by 3½, £1 11s. From Mr. Turner, *Slough*, *Thujopsis borealis*, £1 16s.; *Picea Nordmanniana*, £4; *Pseudolarix Kämpferi* and *Retinospora obtusa*, £3 17s. 6d. From Mr. Watson, *St. Albans*, *Dicksonia squarrosa*, £5; *Cyathea dealbata*, £8 10s.; *C. Smithii*, £4; *Hymenophyllum cristatum*, £5; *H. dilatatum*, £4 4s.; *H. scabrum*, £5 5s.; *H. demissum*, £5; *H. flexuosum*, £5 10s. From Messrs. Jackman & Son, *Ilex dipyrrena*, 3½ feet, and *I. Wateriana*, 5 feet, £3 12s. 6d.; *Phillyrea angustifolia*, 3½ feet, and *P. ilicifolia*, 5 feet, £1 12s.; *Arbutus unedo*, 5 feet, £1 14s.; and lots of twenty-five choice *Rhododendrons* from £2 10s. to £3 5s. From Mr. Blew, *Caladium Imperatrice Eugénie*, £12 12s. From Mr. Standish, *Ascot*, *Rhododendrons* Nelsoni and Prince Arthur, £5 10s.; General Cabrera and Star of England, £3 5s.; other lots of two, £1 12s. to £1 17s. From Messrs. Lane a large specimen *Azalea Alba melior*, £2 6s.; *Criterion*, 4 feet high, and *Chelsoni*, £2; two *Chelsoni*, £2 10s.; two *Madame A. Verschaffelt*, £2; standards of *Chelsoni* and *Roi Leopold*, £1 10s. each. From Mr. Jean Verschaffelt, *Ghent*, *Agave Ousselghemiana*, £2; *A. americana medio-pieta*, £1 10s.; *A. univittata*, £1 12s.; *A. Schidigera*, £1; *A. coccinea*, £1 16s.; *A. filifera longifolia*, £2; *A. Ghiesbreghtii*, £2 2s.; *A. species jalapa*, £2 4s.; *A. filifera*, £1 10s.; *A. chloracantha*, £1 5s.; *A. americana* fol. var., £1 10s.; *A. Xalapensis*, £1 5s.; *A. virginica*, £2; *A. stenophylla*, £2; *Dasylium serratum*, £1 10s.; *Bonaparte gracilis*, £1 10s.;

a fine specimen *Yucca aloifolia variegata*, £2 8s. From Messrs. Ivery & Son, *Azalea petuniæflora*, £3; *Empress Eugénie* and *Madame Michel*, £2 each.

GARDENING PROGRESS IN NEW ZEALAND.

To the French settlers of Akaroa we, the residents in Canterbury, are indebted for the introduction of *Salix balybnica* in 1840. Upon their way from France they put into the island of St. Helena for the purpose of testifying their veneration for the memory of Napoleon Buonaparte, and they brought thence some cuttings of the Weeping Willow. We now have very large Weeping Willow trees on the plains, and find their shade very agreeable during the oppressive heat we experience at the present time; thermometer in the shade 88°, and in the sun 118°, hotter than ever previously known in Christchurch within the memory of "that extraordinary individual" the oldest inhabitant. On the 9th of January, at 12 p.m., the thermometer stood at 83° in the shade.

Akaroa, by us of the plains, is called, on account of its near approach to the sea, its beautiful climate, and beautiful woodland scenery—"our Brighton." Its romantic scenery is beyond description, and it is considered to be very salubrious for sick invalids.

We are now raising seedling *Rhododendrons* by the thousand, but it is only recently that we have been successful, after repeated trials year after year of imported seed. At last, I am happy to state, we have succeeded in obtaining seedlings an inch high, and others far beyond the seed-leaf. I look upon these seedlings as a great boon to Canterbury at large; they will, no doubt, in course of time be sold like the Oak, Ash, and Elm by the thousand, instead of one solitary plant of the common *R. ponticum* for 5s. as at present. This is a very unfavourable climate for the germinating of small seeds like those of the *Rhododendron* family, owing to the continued power and intensity of the solar rays during summer. Evaporation from the soil is so susceptible of change that it almost baffles the skill of man here to retain a uniform moisture for seedlings. —WILLIAM SWALE, *Avonside Botanic Garden, New Zealand.*

WORK FOR THE WEEK.

KITCHEN GARDEN.

LET the gravel walks be occasionally gone over with the weeding-knife, and keep them constantly rolled; the best time is after rain, when they are dry enough to bear the roller. Detached leaves from Cabbage-beds in bearing to be removed to some vacant quarter to be trenched in, and not left to wither and rot amongst growing crops, forming a harbour for slugs and other vermin. Every spare piece of ground should be now trenched up in readiness for planting early Savoys and Brussels Sprouts. *Beet*, the full crops to be thinned out to about 9 inches apart. Bear in mind our former remarks on transplanting, if vacancies occur. *Broccoli*, a few drills of Cape may be sown in light rich ground, to be thinned out and kept standing. *Cucumbers*, thin out the young seedlings on ridges, and see that the transplanted ones do not want for water. Tilt the glasses for the admission of air, and shut down close in the evening. *Cauliflowers*, liberal applications of liquid manure must be given to them, if you would have them fine. *Celery*, prick out the late-sown, and keep the young advancing crops well supplied with water. Prepare the trenches, and, when fit, lift the plants with a good ball of earth, and plant them at a foot apart, using a trowel or small fork in preference to a dibble. Give a liberal application of water, and after they have started into growth plenty of liquid manure poured on the soil from the spout of a watering-pot without the rose. If from drought the tops want refreshing, a sprinkling of pure water is best. *Lettuce*, continue at regular and short intervals to tie them up for blanching, and thin out all advancing crops of the Cabbage varieties, which are always best left to perfect themselves where sown, and if small sowings are kept up at short intervals transplanting will be superfluous. *Peas* and *Beans*, continue to keep the surface well forked amongst the growing crops; this is at all times attended with the most beneficial results, as it increases their productiveness, and, by keeping them in a vigorous growing state, assists greatly in warding off the injurious effects of mildew, which often attacks the later-sown ones. Pulverising the soil, besides exposing it more to atmospheric influences, greatly assists in retaining moisture about the roots during dry weather, and drought,

together with hardness of surface, is, in our opinion, favourable to the production of mildew. If this begin to show itself, a very weak solution of salt and water sprinkled over the tops will keep it in check. *Turnips*, continue to make successional sowings, and dress both these and other crops likely to be infested with the fly with charcoal dust when they are in a wet state. Keep up successional sowings of Radishes, Lettuces, and salads, which require to be sown often now, in quantities proportioned to the demand; the north side of a sloping bank is the best situation for these sowings. *Vegetable Marrows* on ridges to be treated as advised for Cucumbers.

FRUIT GARDEN.

Great activity is necessary in this department, as the rapid growth of the trees will require constant attention in stopping, removing superfluous shoots, and nailing in. Peaches may now have their final disbudding; let every shoot not required be removed with a sharp knife, and nail in the remainder carefully; if any of the extreme shoots are growing out of bounds, they may be stopped within a few eyes of the base in order to preserve the fruit, but take care to train up another shoot to succeed. Apricots to be thinned. Keep the lateral shoots of Vines closely stopped at the first joint. We do not approve of the practice of removing them entirely. By retaining the joint we preserve them for whatever purpose they may serve in the economy of the Vine. We should always endeavour to assist the operations of Nature, as well as judiciously check over-luxuriance, and in this respect we know of no tree more tractable than the Vine.

FLOWER GARDEN.

The directions given for the past two weeks are still applicable to operations going on here, and which should be brought to a close this week. Persevere till every vacant bed is filled. Summer climbers will now be in fine condition for planting out, if directions as regards growing, potting, and staking have been attended to. See that they are properly secured from high winds as soon as the operation of planting is finished. Heliotropes and tender annuals may now be planted out with safety. Choose the warmest and best-protected parts of the flower garden for these tender things. As soon as the beds are all filled and finished off, plant out in the flower-borders the odds and ends which are left. Attend to the staking of Carnations, Picotees, and Pinks as they grow; this will greatly improve their appearance when in bloom. Put in large quantities of different varieties of double Wallflowers in rows behind a north wall or hedge. Alyssums, Iberises, and similar plants should be increased by cuttings for another season. Cut the old plants back as soon as they have done flowering, and they may remain among some of the grouping plants in the borders during the summer months.

GREENHOUSE AND CONSERVATORY.

The turning out of house plants is a proceeding which requires some forethought. Although it may not be desirable to turn out some of the tribes so early in the season on their own account, it is at least so in many garden establishments in the country, in order to carry out without impediment the forcing of fruits and other matters necessary for the supply of a family. In this respect country gardens differ much from the gardens around the metropolis. In the latter, display is the principal point; in the former, display, although not unheeded, is sometimes obliged to give way to more substantial matters. The first step is to provide a proper situation, and one, scarcely secondary, is to secure a good sound bottom on which to place the pots. When the least suspicion of water-lodgements exist drainage should in the first place be secured, and the pots be elevated above the ground level. We do not mean to assert that house plants must be turned out, we are merely advising it on the score of expediency. Plunging, we should say, should in most cases be resorted to, provided the plunging material is above the ground level. All plants with fine hair-like roots, as the *Ericas* and *Epaerises*, should certainly either be plunged or double-potted—that is, inserted within an empty pot. Another great point is to classify the plants with regard to their general habits and character. No plant-cultivator would think of mixing Heaths with Pelargoniums or Cacti. After the bedding-out is accomplished a reserved stock should be immediately taken in hand, and should receive high cultivation in order to fill up blanks the moment they occur either in the houses or in the borders. Some of the hardier stock in the conservatory, such as hybrid *Rhododendrons*, *Camellias* forming buds, and *Orange trees* in tubs or pots, may soon be set out of doors. This will give more room to the plants which must

remain either on account of their tenderness or the display which they make. A sheltered spot should be selected out of doors, but by no means under the drip of trees. A temporary awning, but of a very thin character, should be suspended over them for a week or two at first. All young or other stock growing forward for specimens of high cultivation must now have much room. Make it a rule to let no two specimens touch. Very young stock of *Ericas*, *Epaerises*, or small fancy New Holland plants will be best in a pit or frame, placing the lights to the north. Pinch off the decaying blossom of hybrid *Rhododendrons*; give liquid manure, and if wanted for early work endeavour to force them slightly into wood. Get some young *Thunbergias* put into their final pots for trellising; these are useful, and keep up a late display. Look to the runners of the tree Violet, also the Neapolitan, and do not delay any longer with the *Chrysanthemums*.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

NEVER was better weather for the keeping down and cutting up weeds, and, therefore, took the opportunity to run the Dutch hoe through all growing crops, as even if the weeds are scarcely to be seen, they would soon show themselves if a showery day or two were to come. The bright sun and the cold nights, with east and north winds, are very trying to many things. Corn fields, as yet, look well; but grass grows but slowly, and some of the tender points on our lawn are browned as if frosted. On Wednesday morning early, in a shallow earthenware vessel there was ice one-sixteenth of an inch in thickness.

Watered lots of Peas and garden Beans in tiles and boxes, for transplanting. Sowed several rows for succession, as pheasants are not now so keen after them. Removed a row of Tom Thumb from the orchard-house, where they had done good service, and would have done more, only there was plenty to succeed them. Dillistone's Early bears well under a glass case without any artificial heat; Sangster's does not do well for that purpose, but taken all in all, though not the earliest, it is the most profitable early Pea we have. Watered with sewage water Cauliflowers, Peas, Beans, &c., and pricked out young Cauliflowers. The fresh quarter, turned out eight days ago, was watered with clean water. Giving rich nourishment to such young plants is very injurious. Gave sewage water to a bank of Lettuces, to keep them from running prematurely. We use the sewage for these purposes, not only because we like it best, but also because it husbands so far our clear water, of which we have a fair supply as yet; but in this neighbourhood it is becoming scarce, and some are purchasing it at so much a-pail.

We have never had the fly worse on early Turnips; and as for Radishes, unless carefully netted, and the net kept far enough every way from the seeds, we would never see one. At less than a mile distant, cottagers can throw a dusting of seed into the ground, and every seed will produce a seedling. Here it is a constant contest with the birds, and they too often conquer at length, and obtain more than the lion's share. Pricked out lots of Celery of different sowings, the first being now strong plants, which we shall finally turn out as soon as there shall be a change in the weather.

Sowed Onions for salads, Spinach for succession; filled the vacancies in seed-beds of winter greens, and would prick out the same if we could find time. Dug up a good portion of the Broccoli stumps; this crop, though planted between Peas, and rather late, has done wonders, chiefly owing to giving it plenty of sewage water, until the long nights of last autumn came.

Pricked out young Cabbages, cleared away all the covering material from Sea-kale, and sent in the last dish; it will want all the summer now to grow. Pulled Rhubarb for preserving; the huge stalks would be better of a sewage-watering at the stools. That, and rich soil, will make it grow almost any size, and, unlike some other things, large stalks are tender enough, if from dryness and age they do not become too hard.

Potatoes that had been protected with old sashes are throwing their tubers quite near enough the surface. Instinct might have told them to go down after moisture in this parching weather; but as we cannot do anything in the way of earthing-up, as they are now so thick, and formerly had early Lettuces between the rows, we will water the beds over if we do not have rain soon, and then will cover the ground slightly with half-rotten leaves to keep the moisture in and to keep the light

of the sun from the tubers near the surface. A Potato at all greened, however useful for other purposes, is of small account when cooked. Hoed well between the earliest out of doors, and will earth-up or not earth-up afterwards, according as the tubers are apt to come or not to come to the surface. When planted in nice friable soil from 6 to 8 inches deep, earthing-up in general may be dispensed with. North borders, or the north side of sloping banks, will now be useful for Turnips, Radishes, and Lettuces, and a little Endive may be sown for those who like it early. Most people will care nothing about it so long as they can obtain good Lettuces; and these, too, always seem best in hot weather.

Cucumbers.—The parching weather has brought the green fly into our frames, and to this result no doubt a coolness at the roots has also contributed. We have, therefore, used tobacco paper for smoking them, and applied a lining to the front of the beds, and merely backed up against the boards behind. We intended giving this lining two or three weeks ago, but could not get at it, but we believe a little more heat to these shallow beds would have done much towards keeping the fly away, and here, as in most things, prevention is better than cure. We seldom use such linings for throwing heat into the bed at so early a period; but this season our beds were made much more shallow than usual, and a cold bottom with such a bright sun does not suit Cucumbers or Melons at this season. Took off cuttings of desirable kinds, and from plants quite clean, as these cuttings will fruit earlier than seedlings, and will do very well for summer and autumn work. We do not like plants from cuttings for standing the winter. Seedlings seem to have more stamina for contending with the dark days. Plants for ridges, Gherkins, Vegetable Marrows, &c., we have turned into rather large pots, under protection, as the place intended for them is not yet ready. We have never had them better than on a bank sloping to the south, and without any thing like a hotbed beneath them; but the soil was turned over after every sunny day, so as to turn the hottest soil down, and the plants were planted out in this heated, aired soil, in the first or second week in June.

FRUIT GARDEN.

Strawberries.—Hoed the Strawberry ground pretty deeply with the Dutch hoe, not only to destroy weeds, however small, but to fill all cracks and fissures produced by the dry heat in stiffish loamy soils. Followed with a good watering of house sewage, which will be farther washed in by the first rains. Noticed that previously to the watering the pollen dust was becoming poor and scanty, and setting was taking place but slowly; but after the watering the footstalks looked up more boldly. To enjoy a Strawberry it should be picked clean with clean hands, and be touched only by the stalk. To keep the fruit clean nothing is better than clean wheaten straw laid along each side of the row. Grass, if at all long, answers very well. We often use common litter from the stables, from which most of the droppings have been shaken. This, if applied early enough, will, in general, be washed clean by the rains before the fruit ripens. Spent hops and fresh tan are also good for the purpose, as it is but seldom that the tan is so fine as to rest on the fruit, and both hops and tan are generally disagreeable to slugs, snails, &c. Failing these, boards laid along the sides of the rows are very good—better than tiles or slates; and failing all such conveniences, if the plants are in rows, a string of small cord stretched on each side and twisted round a stick every 6 feet or so, will answer very well for keeping the fruit from the earth.

Some years ago we noticed a basket of nice Strawberries exposed thinly to be dried in the sun. They had been mud-encrusted by a thunder shower, had been washed in a pail, and were then preparing for the table. They looked better than could have been expected, but who could have eaten them with satisfaction if the treatment they had passed through had been known? In fact, the general system adopted for sending Strawberries to table wants a complete overhauling. It matters not how carefully the gardener may pick them by the stalk, not touching a berry with his hands, however clean they may be, instead of being sent in a basket, or just turned over on an elegant dish—and they never look better than when so done—they must be built into cones and pyramids and miniature-shaped baystacks, each berry being taken once or twice between the fingers to get it into the proper shape and form, making sure of a good deal of handling and touching, as if absolutely necessary preliminaries to the future eating and digesting. The time will come when those who grow and

gather fruit will also dish it and send it to table. A word to the wise ought to be enough. Lately we tried to show that the grower of fruit should be the gatherer, directly, or by his assistants, and stated good reasons why; but the good rule is, perhaps, more broken than observed, causing unpleasantness to many and benefit to none.

The young plants raised from the border, and planted out under frames, have set freely and are swelling fruit fast. We have now removed two out of the four rows in the Peach-house, and will take out another in ten days. On two or three of the plants removed there were traces of red spider, so that they were not moved at all too soon. The fruit has swelled very fast under glass lately, even without any artificial heat. Without bright sun the mere glass covering accelerates the ripening but little. The pit in which British Queens are ripening and swelling had a good washing against the back and end walls with sulphur and lime, and a little soot to tone down the colour.

In the orchard-house observed some fly on two or three small plants, and had them carefully washed with quassia water. The trees have had rather heavy syringings every afternoon in this hot weather, and to save watering we shall top-dress all the pots with a rough mixture of mushroom dung from an old bed, and fresher horse-droppings that have lain and heated long enough to kill the ants that might be in them. These materials had a little soot and lime mixed with them before being used for top-dressing the pots. The water question alone would make us seriously think of giving up fruit-tree culture in pots. Thinned a lot of the Peach trees of fruit, which comes in for tarts, &c., but no use can be made of Nectarines in the kitchen when in such a young state. In the Peach-house watered the Strawberries, and frequently twice a-day; in fact, watering and syringing have been our chief work of late, merely to keep things from going back with us. Syringed all the trees freely night and morning, except where the fruit was ripening. The house being about 50 feet in length, would be too long for a single comfortable establishment, as too many fruit would be apt to come in at a time. Our heating-pipes are badly placed, but they answer well in this respect, as the fruit near them comes in first, and long before those on the back wall, so that out of this house we have gathered for from ten to fourteen weeks. In general, however, smaller houses, or a range with divisions, are most suitable for moderate establishments. In addition to the syringing we gave the borders inside and outside a good watering with drainings from the farmyard manure. Though rather admirers of house sewage for common crops, we dislike to employ it much in close places under glass. A good watering when the fruit is swelling fast helps it very much, but it is as well not to soak all the ground occupied by the roots at once. We watered our border at three times, with an interval of from four to six days between each watering. Owing to this precaution we rarely have a fruit thrown off, even though self-preservation would often tempt the trees to do so, when very heavy crops are left.

Vineries.—Went over them in a dull morning and evening, nipping out a few more berries, and reducing laterals in the earliest house, which will succeed the little pit now nearly over; regulating shoots in the late vinery, and bringing the bunches coming into bloom down more into the house, and away from the glass to which they have a tendency to rise. Gave the earliest of these houses a little warmed water, the border being still covered with old sashes, and bedding plants beneath them. Gave the late vinery border a watering from a cistern in the open air, where the water had become warmed by several days' sun, a peck of superphosphate having been previously scattered over the border. In the earliest house, the Sweetwater Grapes were beginning to become transparent; we will now leave a little air on all night, say half an inch in two or three sashes at the top of the house. By-and-by we shall treat the second house in the same way. The late cool vinery we are now keeping the closest and the warmest, and will continue to do so until the fruit be set. Those at the top of the house are beginning to set freely. No moisture will be given except that from the watering of plants and the syringing of the pathways. Even in setting in such sunny weather, it is well not to have the atmosphere too dry, as it binds the capsule too tightly round the parts of fructification. A good temperature, with an atmosphere moist enough, will also help to draw out the bunch, so that the berries shall not be so densely clustered together. We often think that if many Vines had more of the habit of the Muscat, what a fine time we should

have in thinning. Often when not operated on, when the young fruit are not larger than bird shot, it is next to impossible to get the scissors into the bunch of close-setting kinds without injuring the berries that are left. Two things in thinning Grapes ought always to be avoided: First, using scissors after the points have become dirty or discoloured with the Vine juice, as the marks are so apt to be left—it is easy to keep them dry and clean; and the second is, to avoid oiled hair, or hair of any kind, or dirty hands, or clothes saturated with perspiration, coming in contact with the bunch. In thinning, those with moist hands should catch the bunch with a neat hooked stick or clean wire; but a stick is the better of the two. For air-giving, temperature, &c., see last and previous week's notices.

Fig-pit.—*Figs in Pots.*—Gave the trees a good watering with manure water, and syringed the tops frequently before shutting-up, about 4 P.M., so as to obtain a good amount of sun heat. This shutting-up in a moist atmosphere involves the necessity of giving air early in the morning, so that the fruit swelling fast may become dried, as, if the damp hang long on them, a spot will be formed at the point, and from thence it will spread and rot, instead of the fruit swelling and ripening. In dull weather, after such bright sunshine, there will be a necessity of having fire heat in early houses to permit of more air being given to neutralise this tendency towards damping. Except when the trees are in a state of rest, it is hardly possible to overdo Fig trees with moisture if the drainage is all right. Stagnant moisture is just as bad for throwing off a crop as great dryness; and let it not be forgotten, that whether growing in a pot or in a border, if the roots be too dry, they must not be saturated at once, but by degrees, say in four or five days' time. We have seen young trees well loaded throw off their crop from dryness; we have seen similar trees cast their crop when a copious watering was at once given. The stimulus was all right enough for growth, but it was more than the young fruit were prepared for, and off they dropped. It is the safest plan to have the soil rather moist before the buds swell much.

We must commence as soon as possible on the trees out of doors, which are showing plenty of fruit. We have merely stopped the terminal bud of the shoots showing fruit.

ORNAMENTAL DEPARTMENT.

Doing a good deal in the way of potting Balsams, Feathered Cockscombs, Geraniums, watering, and keeping plant-houses moist and shaded to save watering, even if not quite so good for the plants. Winter-flowering Heath, Epacris, &c., should now have a cold pit, to be kept rather close until growth is made, and then be hardened off to ripen the shoots. Camellias and Azaleas done blooming and allowed to stand a week or two after being trimmed, should have a close, warm, moist atmosphere to encourage growth, and that will also do much to check insects, the plants being gradually hardened off as the flower-buds are formed. Many of the hardier plants, as Cytisus, Acacias, &c., will stand in a sheltered place out of doors, where no other place can be given them. We were forced against our will to smoke Caladiums, on which we never saw green fly before. Gloxinias in bloom should have a shady place, as hot little sun spoils the delicate blossoms. Dahlias we must divide, for we are behind, having kept them in a cool place, and they are just moving. The frosty mornings have rather frightened us from bedding-out; but if we did not make a commencement we should never finish, and therefore we have begun, and most likely some thousands will be out before this appear in print. One reason why we do not hurry is, that most of our plants are growing now, planted out, in earth pits, Celery trenches, &c., so that they are not confined as if they stood in little pots. One chief object, however, in so treating them was to avoid the necessity of watering them often. Many beds have only been watered once since the plants were turned out in the beginning of April. Most of them lift well now for planting, and we generally carry them in little boxes, and this saves the ball of earth about the roots. The system would not answer so well where the plants must be carried some distance from the earth pit to the flower garden. Under such circumstances pots and boxes, where the roots are kept near at home, are best; but the keeping of thousands of plants in small pots is a serious matter, even as respects watering, where labour is rather scarce.—R. F.

CABBAGE AND DITTO.—"I love you like anything," said a young gardener to his sweetheart, pressing her hand. "Ditto," said she, returning the pressure. The ardent lover, who was

no scholar, was sorely puzzled to understand the meaning of "ditto." The next day, being at work with his father, he said, "Father, what is the meaning of ditto?" "Why," said the old man, "this here is one cabbage-head, and that ere's ditto." "Drat it!" ejaculated the indignant son, "then she called me a cabbage-head!"

COVENT GARDEN MARKET.—JUNE 2.

A WEEK'S fine sunny weather has greatly improved our supplies, both home-grown and otherwise, and the French fruit generally has been better. Prices have accordingly receded, and we may look for a greater reduction in the course of the week. Some open-air Strawberries have come to hand, and Green Peas in considerable quantities from Kent and the west of England.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes	each	0 3	to	0 6	
Asparagus	bundle	3 0		6 0	
Beans, Broad	bushel	0 0		0 0	
Kidney	100	2 0		2 6	
Beet, Red	doz.	2 0		3 0	
Broccoli	bundle	1 0		1 6	
Brus. Sprouts ½ sieve		0 0		0 0	
Cabbage	doz.	1 0		2 0	
Capsizeams	100	0 0		0 0	
Carrots	bunch	0 4		0 8	
Calliflower	doz.	2 0		6 0	
Celery	bundle	2 0		3 0	
Cucumbers	each	0 4		1 0	
pickling	doz.	0 0		0 0	
Endive	doz.	2 0		0 0	
Fennel	bunch	0 3		0 0	
Garlic	lb.	1 0		0 0	
Herbs	bunch	0 3		0 0	
Horseradish	bundle	2 6		4 0	
Leeks	bunch	0 3		0 0	
Lettuce	per doz.	1 0		1 6	
Mushrooms	pottle	2 0		3 0	
Must.& Cress, packet		0 2		0 0	
Onions	bushel	6 0		8 0	
Parsley	½ sieve	2 0		0 0	
Parsnips	doz.	0 9		1 6	
Peas	per quart	3 0		6 0	
Potatoes	bushel	2 6		4 0	
Kidney	do.	3 0		4 0	
Radishes	doz. hands	0 6		1 0	
Rhubarb	bundle	0 4		0 8	
Savoy	doz.	0 0		0 0	
Sea-Kale	basket	0 0		0 0	
Shallots	lb.	0 8		0 0	
Spinach	bushel	4 0		5 0	
Tomatoes	per doz.	3 0		6 0	
Turnips	bunch	0 9		1 0	
Vegetable Marrows dz.		0 0		0 0	

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples	½ sieve	4 0	to	8 0	
Apricots	doz.	4 0		6 0	
Cherries	lb.	2 0		3 0	
Chestnuts	bush.	0 0		0 0	
Currants, Red ½ sieve		0 0		0 0	
Black	do.	0 0		0 0	
Figs	doz.	8 0		15 0	
Filberts	lb.	0 0		0 0	
Gobs	100lbs.	0 0		0 0	
Gooseberries	quart	0 6		0 9	
Grapes, Hethouse	lb.	5 0		10 0	
Lemons	100	6 0		10 0	
Melons	each	4 0	to	8 0	
Nectarines	doz.	10 0		20 0	
Oranges	100	6 0		12 0	
Peaches	doz.	21 0		36 0	
Pears (dessert)	doz.	0 0		0 0	
kitchen	doz.	0 0		0 0	
Pine Apples	lb.	6 0		10 0	
Plums	½ sieve	0 0		0 0	
Quinces	½ sieve	0 0		0 0	
Raspberries	lb.	0 0		0 0	
Strawberries	lb.	5 0		10 0	
Walnuts	bush.	14 0		20 0	

TO CORRESPONDENTS.

•• We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

We also request that correspondents will not mix up on the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once

N.B.—Many questions must remain unanswered until next week.

Books (*Natural J. S. T.*)—We do not know whether you require books descriptive of Ferns, nor whether in botany you seek the elements of the science. You must be much more explicit.

HERBACEOUS CALCEOLARIAS (*R. N. R.*)—Your seedling Calceolarias are the very best we have ever seen, size, form, and colour being excellent. There is not an inferior flower among them. The bright spotted yellows and the dark browns, both spotted and striped, are first-rate. Had you exhibited them at the International Horticultural Exhibition, we venture to say that you would have had innumerable applications for seed. Pray inform us when you are prepared to send out packets of the seed of these splendid flowers.

PEACH TREE LEAVES BLISTERED (*An Irish Subscriber*).—The leaves have that blistered and distorted appearance caused, we think, by the sap vessels bursting through exposure to cold or frost. This condition is very common in the present season, and the leaves so affected are much infested with green aphid. In some instances mildew has also already shown itself on the blistered part. A good washing in the afternoon with a solution of 1 oz. of soft soap to a gallon of water is the best remedy for the fly or aphid, applying it forcibly with a syringe or garden engine every second day. Dusting the leaves with sulphur whilst wet will destroy the mildew.

AMMONIA WATER IN VINERY (*Idem*).—We recommend keeping the troughs full of liquid manure, or guano water of the strength of 2 ozs. to the gallon, from the time the berries have set up to their changing colour for ripening, but we do not recommend manure water formed of other substances containing ammonia, except soot.

INTERNATIONAL HORTICULTURAL EXHIBITION.—The third prize for six standard Roses (Class 115) was not awarded to Messrs. Paul and Son, as stated at page 391, but for the following varieties:—Adam, Paul Ricart, Madame St. Joseph, Anna Alexieff, Gloire de Dijon, and Jules Margottin; exhibited by William Earley, gardener to F. Pryor, Esq., Digswell, Welwyn.

SEEDLING TULIPS (H. H. H.).—Your Tulips are large in size and bright in colour, but there is a coarseness about them which is a decided objection. There are many bright-coloured varieties of Tulips imported every year, which are equally effective and much more perfect in form.

PEACH TREE LEAVES FALLING (Anxious).—The leaf sent is certainly perforated by some insect, but such perforations would not cause the leaves to fall. The leaf sent was very thin, and would seem to have been formed in a close moist atmosphere, and if you had not stated that the trees were well attended to, we should have said that the leaves fell in consequence of want of water. Have you been using any solution to free the trees of insects? If not, then we think the fault rests with the roots. If the trees have been neglected in respect to water, then well watering them now will not keep on leaves like that sent. It was ripe.

KEENS' SEEDLING STRAWBERRY BARREN (J. Mackenzie).—Allowing the plants to grow too close may have made them barren, or the soil may be too rich. If you thin out the plants so that they may be 18 inches or 2 feet apart every way, and keep all runners cut off as they appear, we have no doubt your fine plants will have by autumn very fine well-ripened crowns, calculated to produce a good crop another year. We find that most of the plants in our beds of Keens' Seedling have this year gone off in consequence of canker, and though those which remained have shown well for bloom they have failed in throwing up the trusses well, and the flowers are very imperfect. We have some beds in another garden about two miles off, and the plants are there remarkably healthy, and promise an abundant crop. We think that our Strawberry plantations have been injured by the late frosts, especially those of Keens' Seedling and British Queen. Black Prince and La Constante are fine, but the first two will be next to failures.

MULBERRY PROPAGATION (A. B.).—The cuttings are best selected from the bearing wood, for the trees thus obtained fruit when much smaller than those propagated from any other part of the tree. The cuttings should be taken from the wood of the previous year in the same manner as for Currants and Gooseberries, and may be 6 or 8 inches in length, cutting them transversely below the lowest joint or eye. Insert them about 4 inches, or two-thirds of their length, into the soil. They require to be put in early in spring, the end of February or beginning of March being a good time. A good, rich, and rather light soil is all that is required. If two or three shoots appear, rob off two and leave the strongest if you wish for standards; for bushes leave all the shoots and stop them; and for fan-trained trees for walls or espaliers if two shoots are produced disbud to one, and cut it back in the following season, but if three buds grow retain one as a leader, and train the others right and left. The Mulberry may also be increased by layers, in which way trees may be obtained of a larger size than by cuttings. It may also be raised from seed.

PANSIES DETERIORATING AND CHANGING COLOUR (C. R. H.).—We think that the Pansies have deteriorated from long continuance in the same place, and that neglecting to take cuttings and make fresh plantations has caused them to change colour. The late dry and cold weather has been unfavourable to Pansies, and unless well watered in such weather, the blooms soon fade or rust. You are correct in saying "that to have Pansies up to the mark in size, colour, and shape, it is necessary to take cuttings annually, and to throw away the old plants, making new beds in a different place." Pansies like a good, rich, and rather strong soil, with good drainage, and abundant supplies of water when in flower. The soil required should be deeply and well worked. No blooms came in the letter.

DISEASED CUCUMBERS (W. S. C.).—Gardeners call the disease which affects your Cucumbers "gumming." The cause is obscure, but a remedy is using for the soil in which the plants are grown a rather poor loam, such as the surface of a pasture after the turf has been removed, and tramping to top-dressing and liquid manure for nourishing the plants. This is the plan recommended by Mr. Fish.

GREENHOUSE MANAGEMENT (Miss E. J.).—Keane's "In-door Gardening" is the work you probably refer to. It contains what you mention, and can be had free by post from our office if you enclose twenty postage stamps with your direction, stating the name of the book.

SPOTTED LEAVES (Rustic).—Watering the trees in your orchard-house daily, and then suddenly reducing the watering to once a week, is the probable cause of the black spots. The supply of sap must have been extraordinarily changed by such a transition. When you reduced the watering it should have been gradually, and the surface over the roots should have been mulched.

FILICITS STRONG (Bang).—You are rightly informed. The ants should not be gathered until fully ripe, should not be taken out of the husks, and should be placed in stone jars having lids, burying the jars in sand in a cellar. They keep firm for a long time, but they shrivel considerably if kept in a cupboard. If the cellar is damp, it will suffice if the nuts are put in stone jars, and the jars buried to the rim in sand.

FRUIT STORING (Idem).—The difficulty in keeping fruit is a suitable place, and knowing the kinds, for many decay because their season is past. The floor of the store-room would do for Apples, placing them on clean wheat straw, and covering them with a thin layer of the same. We presume that the store-room is not heated, that it is not wet, that frost can be kept out, and that air can be given. If it offers these conditions, then it will do for Apples, but if very dry it will not suit them; for, though keeping well in such a place, they will be apt to shrivel, and it is desirable to have them firm, crisp, and juicy. The fruit must not be laid thickly or in heaps, but should, on gathering, be spread out thinly for a few days. Afterwards they should be carefully stored away in single layers, keeping them from light either by having shutters to the windows, or covering with a thin layer of dry clean straw. It is not necessary to turn the fruit, for the handling in doing so causes bruises, and the Apples spot; but it is desirable to have them so laid thinly that they can be examined, and those which are decayed picked out. Apples will do well enough in this way, but Pears require a drier place, and do not keep at all well where Apples will do so. They require more care, and for them shelves of some non-resinous wood are required, as Elm, Beech, &c. Deal gives a taint of turpentine to the fruit. In your store-room you may have Pears on the shelves, nailing a strip of wood, 2 inches deep, on the edge, and placing on the shelf an inch of sand dried in an oven. The fruit should be gathered on a dry day, and with great care, so as to prevent bruising. It should be laid on the shelves for a few days before being finally stored away, and the room should be opened on fine dry days. The Pears will part with some moisture, and in ten days or a fortnight should be placed very carefully in a single layer on their sides on the sand; they will thus rest more easily than if laid on the bare wood. This mode of treatment will do for those that are not expected to keep long, but the late kinds should be covered with dry sand. On dry days air may be admitted to dispel damp, if the room be at all damp; otherwise keep it close and dark, and go over the fruit occasionally in order to remove any that may be decaying. Avoid handling the Pears to ascertain when they will be ripe, for that can be much better determined by their changing colour, and immediately they are fit for table commence to use them, for no fruit will keep for any length of time afterwards. In frosty weather, the windows should be covered with some protecting material. We fear, from your having no fruit at Christmas, that your Apples and Pears are early autumn kinds, as many of the autumn kinds will keep till Christmas, when the winter fruits come in. Surely you have Apples that will keep over Christmas. We had Pears this year in April and Apples in May, and yet we thought they ought to have kept longer.

MR. NEWTON'S MODELS.—Mr. Newton has written to us as follows:—"I desire to correct an error in your report of my exhibition of models in the International Horticultural Exhibition. You state that no one was there to explain them, and that that was the reason the Jurors did not seem to appreciate them. I had an attendant there from the opening of the Exhibition, and he attended there every day, to explain the working of my models for warming and ventilating by warm air in connection with hot-water pipes, &c.; also to explain the collection of working plans for laying out grounds to scale, which I have exhibited. I am the only landscaper gardener who has exhibited plans at the International Horticultural Exhibition without competing for prizes, and although catered in the catalogue, no notice was taken of them."

HEAVY MARLY SOIL (Julia M.).—To render it fitter for a garden, we would remove the surface soil, and burn 9 inches in depth of the subsoil of the whole space. Mix the burnt earth with the removed surface soil, spread it over the entire area, and manure as needed.

IRISH PLANTS (G. Smith).—The "Bell Heather" you enclosed is usually called *Menziesia polifolia*, or Irish Worts. The shrub is *Juniperus sabina*, or common Savia. They are not marketable, nor is *Osmunda regalis*.

ONION (K. O. T.).—The Onion which you received from Brussels under the name of *Oignon jaune plat* we think is the Welsh Onion (*Allium fistulosum*). At least, in its present state it entirely corresponds with that kind.

NAMES OF PLANTS (X. O. F.).—You must send better specimens of the coniferous plants. It is almost impossible to identify small scraps, and to do so costs more time than we can afford. (*Baroko*).—1, *Bellis perennis*, destitute of ray florets; 2, *Euphorbia platyphyla*. (*Cotford House, Sidmouth*).—*Cheilanthes fragrans*; *Aristotelia Menziesii*. (*John Riddell*). *Amygdalus nana*; *Polypodium colopodes*. (*C. C.*)—*Aotus gracillimus*. (*T. R. Drake*).—1, *Polystichum aculeatum*; and 2, *Cystopteris fragilis*, as nearly as we can tell from the very young fronds sent.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 2nd.

DATE.	THERMOMETER.						Wind.	Rain in inches.	GENERAL REMARKS.
	BAROMETER.		Air.						
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 27	29.727	29.662	75	34	55.4	53	E.	.00	Fine; densely clouded; overcast and cold.
Mon... 28	29.814	29.774	70	32	57	53	S.W.	.00	Very fine throughout; at freezing in the night.
Tues... 29	29.898	29.752	73	29	57	54	S.E.	.00	Very fine throughout the day; below freezing at night.
Wed... 30	29.932	29.788	70	43	57	54	S.E.	.00	Very fine; dry air; overcast at night; lightning.
Thurs. 31	29.693	29.631	69	50	57	54	S.E.	1.35	Overcast; shower in the evening; very heavy and constant rain
Fri... 1	29.770	29.626	74	42	58	54	S.E.	.00	Fine; partially clouded; very fine throughout. (at night)
Sat... 2	29.848	29.810	80	40	58	54	S.	.02	Very fine; masses of snow-white clouds, in bright blue sky; hot; (slight rain)
Mean	29.811	29.721	73.00	38.57	57.07	53.71	..	1.37	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

MY HAMBURGH CHICKENS.

It has often been remarked by foreigners, that Englishmen are always talking about the weather, the said foreigners implying, perhaps, by this remark, that we have nothing else to talk about. I hold that this is not true in the least degree; we have many things to talk about; but why should we not talk about the weather? It is always changing, so that weather news is often the latest news, and it is good manners to speak about the most recent intelligence—nay, instructive too. I intend, then, to talk about the weather as long as I live, unless the climate alter and we have six months winter and then six months summer, when, save twice a-year, there would be no weather news at all. Well, we have now beautiful spring weather with us, though frosts at night somewhat retard the progress of vegetation. However, let that pass; the days are lovely, so we will be content. Now, do the good people in Madeira or Italy, who have continuous settled weather, enjoy a fine day as much as we do, to whom it is but a passing guest? I doubt if they do. So give me for this and a thousand other reasons showery, changeable, chilly England. Oh, the intense delight that a warm spring day affords me! The east wind gone at last, and again I dare to stroll; again the sun warms me as I walk leisurely, very leisurely, among my roses, picking the grubs out of the delicate rolled-up leaves. I regard a rose grub, or caterpillar, of whatever colour, a monster of no ordinary kind—a very fiend, a Satan in Paradise. My roses! I like to have a specimen glass on either side of me as I write, with, say, a Charles Lefebvre in one, and a Senateur Vaisse in the other, or a Cloth of Gold and a Jules Margottin—and these beauties attacked by grubs! But to return to the weather subject, and the intense pleasure given to us this glorious springtide. I hear again the soft twitter of the little birds, the cawing of the rooks. There, yes, there is the blackcap back again in the shrubberies near me, and I hear the cheery note of the linnets just beyond my hedge. But not alone is the ear filled with delights. There is the world of eye as well as ear. Oh, the delicate green of the hedges, the stately horse chestnuts with their fan-like leaves and candelabra-like blossoms! Then there is the brown-green of the half-opened oak leaves; but I saw a rarer sight to-day—it was a walnut tree of many years' growth, consequently of great size, the half-opened leaves abundant and of a darker brown, far darker than that of the oak, and two finer elms stood behind it; and how the two varieties of trees showed off the beauty of each other! Much pleasure may be had from watching varieties of foliage. Thus my walnut will presently delight me from the yellow tint of its leaves. Every tree has blossomed well here—crabs in this part one mass of bloom; apple trees with leaves hidden by blossom. Everything is looking spring-like except a wicked-looking old ash at the back of my church, which does not yet show a leaf. Why should not the ash be exterminated where better trees will grow?

But what about my chickens? Why it was on my way to visit that I made all these remarks to myself. But for those Hamburg chickens of mine, I should not have got up from my desk while in the middle of my next Sunday's sermon. An old clergyman fond of his garden used to say, "I thin my Grapes between the heads of my sermon." Can you not fancy him doing it?—the deeper the subject, the deeper would go the scissors. Well, I like to have a stroll among my chickens when the text is awkward to handle. But I ask myself, Why do I take such pleasure in chickens year after year? "Wretched little half-clad birds," says one who only likes chickens nicely browned, or white and soft, with a pink tongue between them. Scoffer! thou art ignorant on the subject, so be silent. But I have not answered my own question, let me try to answer it.

My pleasure has nothing to do with exhibition ambition, for I never exhibit. Perhaps there is something in it of habit and association, for I think of past years; but I think there is more from the pleasure which looking at young things always gives us. Thus, take the case of a boy going out in life for the first time. How kind eyes watch him with interest, and moist eyes look on him—not of relatives only and near friends, when he bids good-bye, and is away into the great world. Yes, it is the youth, the fact of youth and the hopes connected with youth, that charm us. We were once young,

we had high hopes. But, then, how uninteresting I fear we middle-aged folks must be. There is poetry in the youthful locks, and in the silver beard; but only very plain prose in the grizzled or semi-bald head. And so, very philosophically, I have settled the point that I like chickens, because we are all fond of young things, and we love to watch them, being hopeful of their future. To come now to lower things, and to adopt most properly a lower tone. I like to have each year at least one brood of a variety of fowls which I have not had before as chickens, or have not kept for a good many years. I look at them with the eye of a naturalist as well as of a poultry-lover. I love to watch habits and mark differences of character in different varieties—*c. g.*, how different is the Spring chicken from the Cochin.

This spring I am watching, thanks to Miss Emily Beldon's kindness, a brood of Silver-spangled Hamburgs. By-the-way, let me observe that the sitting of eggs, thirteen in number, came rattling by rail all the way from Yorkshire to Wilts, a distance by said rail of at least two hundred miles. When I unpacked them and put them under one of my kind, tame, Cochin hens, my man remarked—"Well! purty lucky you'll be if you get half on 'em to hatch!" "What!" said I, "do you mean six chickens and a half?" "I mean six," said he stolidly, not hurt the least by my quizzing his mistake in calculation. Well, I had eleven hatched, and all doing well—one of the largest broods I was ever master of. So, my friends, never fear having eggs from a distance. At first my Hamburg chickens were little balls of fluffy, smudgy white, patey and indistinct in colour; but now, at a month's end, how the spangles are coming out! I admire the activity of the chickens, and the Hamburg symmetry is beginning to be seen—that neat active form and Partridge-like head. See them lying down in the sun by threes together, then on a sudden up go their heads, and up and away they go. I think the little pullets are handsomer than the cockerels. Query, Is it not so with Hamburgs through life? I like my brood hen to be happy, and I pity hens straining their necks through a wooden-barred coop while the chickens are sporting afar; in that case the poor hen is, by change of hours, either too hot or too cold, panting with open beak, or chilly in the shade, so I enclose a manure heap with wire-netting. There is a hedge all round which affords shade, and, therefore, all are happy, hen and chicks, the mother not able by wandering to tire out the chickens, but able to be with them and scratch for and protect them. Then, being a Cochin, she does not fly over the low fence. Through or under the wire the chickens get into the garden, playing bo-peep under the rhubarb leaves, tearing at the weeds; and how they like the pull at the grass! new-cut grass is not half so agreeable to them. They appear to be kindly enough, honest, respectable little birds, unless bits of meat are given them; then how they steal, how they pilfer, how they run and hide, and swallow gluttonously and half choke themselves! yet as all are guilty in turn none can upbraid another. To my calm Cochins they are a capital contrast, being so active and full of life. The other day down had come a young rook from the rookery near, and squatting on his haunches he sat near the chickens. What a child of wickedness he looked, blinking in the sun—a sort of Nicholas the younger. I thought of Milton, who describes Satan on the wall of Paradise, and says of him, "He sat like a cormorant;" but like good Christians with easy consciences, my Hamburg chickens did not seem to fear him.—WILTSHIRE RECTOR.

BEVERLEY EXHIBITION OF POULTRY AND PIGEONS.

FOR very many years past the repute of the Beverley Show has been great among poultry amateurs, and it undoubtedly well deserves their good opinion. The members of the Committee are mostly men of great experience in all matters appertaining to poultry, and uniting in their efforts to fulfil to the very letter every duty connected with the management of a poultry show. The Show continues open only for a single day, the birds are well cared for, and all are returned with the most unvarying punctuality by the first train on the following morning. Again, the plate prizes are most unquestionably of the absolute value they are represented to be, and the cups of this year are of as beautiful design as we have seen for many years past. The Norfolk Rooms are all that could be wished for as regards the accommodation which they afford a poultry show; the pens are those of Turner, of Sheffield, and the exhibition of plants and flowers, held on the adjacent grounds of Charles Reynard, Esq., all aid in enlisting public favour. In this portion of the Show the bouquets of flowers were an object of general admiration.

This period of the year is not, as a rule, a favourable one for the exhibition of adult fowls; the breeding season being far advanced, the plumage begins to look somewhat shabby, but not a few of the best hens are just now wisely permitted by their owners to enjoy the rest consequent on incubation. There was, nevertheless, as little to complain of on this point as could be expected, for most of those fowls entered for competition, being the property of experienced exhibitors, were shown in good feather. The *Game* classes were especially praiseworthy; Mr. Boyes, of Beverley, winning the silver cup for the best pen of *Gamo* with a pair of extraordinarily well-conditioned *Duckings*, pressed closely, however, by Mr. Mathew, of Stowmarket, Sir St. George Gore, and Mr. Fletcher, of Manchester. The silver cup for the best single *Game* cock fell to the lot of Mr. Brierley, of Middleton, but this prize was equally well contested with those in the former *Game* classes. In *Spanish* fowls the Exhibition at Beverley was numerous as to the entries, and the quality was far beyond what is generally to be met with. In fact, many of the highly commended birds were of great excellence. In this class, as also in the following one, *Grey Dorkings*, the remarkably excellent condition of Viscountess Holmesdale's pens decided the victory, and added still another couple of silver cups to former successes. It is but justice to Mr. Martin, who has the care of her ladyship's poultry, to add that we never saw any birds sent out displaying better management. The *Buff Cochins*, and the *Partridge-coloured* also, were of great merit, the competition, though large as to the number of entries, being excellent throughout. Mr. Jennison, of Belle Vue, Manchester, obtained the silver cup for the best pen of *Cochins*, and reference to the prize list will show that most of our noted breeders competed. The class for *Partridge-coloured Cochins* was good throughout. The *Lambrugh* classes were far better than we anticipated, as so late in the season tells, especially against those varieties. Messrs. Beldon and Wood were the principal prize-takers. It is rarely that so good a class of *Polands* is found at any show. The *White-crested* were the victors.

Some especially good *Sultans* were exhibited in the *Variety* class; they were the property of Mr. Zurhorst, of Donnybrook. Their long journey from Ireland seemed not to have affected them in the least. Sir St. George Gore seemed to monopolise all the principal *Game Bantam* prizes with light-feathered, really "gamy"-looking birds in all points. The show of *Sebright Bantams* was unusually good, and the *Blacks* and *Whites* were also excellent.

The *Ducks* were good, more especially the *Variety* class, in which many of the rarest and most beautiful-plumaged birds were well shown. The *Pigeons* were so perfect that almost every pen obtained a place in the prize list.

The day was most favourable.

GAME (Black-breasted and other Red).—First, S. Mathew, Stowmarket. Second, J. Fletcher, Stoneclogh, Manchester. Highly Commended, Sir St. G. Gore, Bart., Hopton Hall, Wirksworth. Commended, F. Sales, Crowle.

GAME (Any other variety).—First and Silver Cup, W. Boyes, Beverley. Second, J. Fletcher. Commended, Sir St. G. Gore, Bart.

GAME COCK.—First, C. W. Brierley, Middleton, Manchester. Second, Sir St. G. Gore, Bart. Highly Commended, W. Boyes; J. Fletcher; S. Mathew; M. W. Stobart, Darlington; C. W. Brierley; H. M. Julian, Hull.

SPANISH.—First and Cup, The Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, H. Beldon, Goitstock, Bingley. Highly Commended, E. Jones, Clifton, Bristol; Mrs. A. M. Holmes, Hotham; C. T. Bishop, Birmingham; J. Marchant, Halifax; J. T. Bottom, Bradford; H. Beldon. Commended, The Viscountess Holmesdale.

DORKING.—Cup, First and Second, The Viscountess Holmesdale. Highly Commended, M. Hunter, Green Hamerton; Sir St. G. Gore, Bart.; T. Burgess; J. Rolandson, Hawkhead, Laneaster; F. Smith, Driffield. Commended, C. Pease, Darlington.

COCHINS (Cinnamon or Buff).—First and *Cochin Cup*, C. Jennison, Belle Vue, Manchester. Second, Capt. Henton, Lower Broughton, Manchester. Highly Commended, Rev. T. H. Barker, Hovingham; C. W. Brierley, Middleton, Manchester; H. Tomlinson, Balsal Heath Road, Birmingham.

COCHINS (Any other variety).—First, Capt. Heaton. Second, J. Stephens, Walsall. Commended, J. E. Greenhaigh, Harwich; E. Tudman, Whitechurch.

HAMBURGH (Gold-spangled).—First and Cup, H. Beldon. Second, Sir St. G. Gore, Bart. Highly Commended, G. Sutton, York; A. K. Wood; J. Newton, Silsden, Leeds.

HAMBURGH (Silver-spangled).—First, A. K. Wood. Second, H. Beldon. Highly Commended, J. Fielding, Newchurch; Sir St. G. Gore, Bart.; A. K. Wood.

HAMBURGH (Gold-pencilled).—First, H. Beldon. Second, S. Smith, Northwam, Halifax. Commended, T. Wrigley, jun., Tonge, Middleton.

HAMBURGH (Silver-pencilled).—First, A. K. Wood. Second, H. Beldon. Commended, E. Yeardeley, Wisewood, Sheffield.

POLISH.—First, H. Carter, Uppertong. Second, H. Beldon. Highly Commended, Mrs. Procter, Hull; H. Beldon.

ANY OTHER VARIETY.—First, F. W. Zurhorst, Donnybrook (Sultans). Second, Sir St. G. Gore, Bart. (Black Hamburg). Highly Commended, J. H. Pickles, Todmorden (Brahmas); Hy. Beldon (Black Hamburg).

BANTAMS (Game).—First, Sir St. G. Gore, Bart. Second, Messrs. L. & E. Toder, Little Carlton, Newark. Highly Commended, C. Ashworth, Halifax.

BANTAMS (Any other variety).—First, F. L. Roy, Kelso, N.E. (Silver-laced). Second, J. W. Morris, Rochdale. Highly Commended, T. C. Harrison, Hull (Silver-laced); Sir St. G. Gore, Bart. (White); Messrs. S. & R. Ashton, Mottram, Manchester (Silver-laced); F. L. Roy (Silver-laced). Commended, Sir St. G. Gore, Bart. (Blacks); G. Manning, Springfield, Essex (Gold-laced).

BANTAM COCK (Game).—First and *Bantam Cup*, Sir St. G. Gore, Bart. **DUCKS** (Aylesbury).—First, J. K. Fowler, Aylesbury. Second, J. Storey, Warter, York. Commended, M. Harrison, Wabury.

DUCKS (Rouen).—First, J. K. Fowler. Second, S. Stott, Rochdale. **DUCKS** (Any other variety).—First, T. Harrison, Hull. Second, Sir St. G. Gore, Bart. Highly Commended, J. R. Jessop, Hull.

PIGEONS.

CARRIERS.—*Cock*: First, F. Elsc, Bayswater, London. Second, J. Firth, jun., Webster Hill, Dewsbury. Third, E. Horner, Harewood, Leeds. Fourth, J. Thackray, York. Very Highly Commended, F. C. Bradley, Hall Cross House, Doncaster; J. Firth, jun.; H. Yardley, Market Hall, Birmingham; C. Cowburn, Leeds; K. Fulton, Deptford. Commended, H. Simpson, Whitby. *Hen*: First, H. Fulton. Second, H. Simpson. Third, H. Yardley. Fourth, J. Thackray. Very Highly Commended, R. Bellamy, Leven; F. C. Bradley, Doncaster; H. Yardley; C. Cowburn; E. Yeardeley, Sheffield; F. Elsc, Bayswater. Highly Commended, J. Firth, jun. Commended, J. Firth, jun.

POWTERS.—*Cock*: First, K. Fulton. Second and Third, W. Watson, Beverley. Fourth, J. Thackray. Highly Commended, T. Knowles, Aberdeen; F. Key, Beverley. Commended, T. Knowles. *Hen*: First, R. Fulton. Second, F. Key. Third, J. Thackray. Fourth, Master J. Key, Beverley. Commended, W. Watson.

ALMONDS.—First, R. Fulton. Second, F. Elsc. Third, C. Cowburn. Fourth, J. Thackray. Very Highly Commended, H. Yardley; J. G. Gowan, Beverley; E. Yeardeley. Highly Commended, R. Bellamy; C. Lythe, Cottingham.

TUMBLERS (Any other variety).—First, R. Fulton. Second, C. Cowburn. Third, G. Wostenholme, Sheffield. Fourth, J. Campey. Very Highly Commended, H. Yardley; C. Lythe; E. Horner. Highly Commended, R. Bell, Beverley. Commended, J. W. Thompson, Hull.

BARBS.—First, J. Thackray. Second, H. Beldon. Third, H. Yardley. Very Highly Commended, J. Firth, jun.; H. Yardley. Highly Commended, H. Simpson, Whitby; J. Firth, jun.

OWLS.—First, F. Fielding, jun., Rochdale. Second, H. Yardley. Third, F. C. Bradley, Doncaster.

FANTAILS.—First, F. Elsc. Second, T. Ellington, Woodmansey. Third, F. Key. Highly Commended, H. Yardley.

JACOBS.—First, E. Horner, Harewood. Second, F. Elsc. Third, H. Yardley. Commended, H. Beldon; W. Charter, Driffield.

TRUMPETERS.—First, F. Elsc. Second, H. Simpson, Whitby. Third, F. Key. Commended, H. Yardley.

TORBITS.—First, A. Middleton, Newport. Second, J. Gawan. Third, H. Yardley. Very Highly Commended, H. Yardley. Highly Commended, W. W. Bielby, Beverley; E. Horner; H. Beldon. Commended, O. Brown, Regent's Park, London; T. Knowles, Aberdeen.

NUSS.—First, Messrs. T. C. & E. Newbitt, Epworth. Second, B. Leason, Driffield. Third, F. Key. Highly Commended, J. Thackray, York; F. Elsc.

DRAGONS.—First, W. Watson, Beverley. Second and Third, H. Yardley. Very Highly Commended, H. Yardley. Highly Commended, H. Simpson; T. Statters, Hull.

ANY OTHER VARIETY.—First, G. Pickering, Driffield (Black Magpies). Second and Fourth, H. Yardley (Spots and Brunwicks). Third, J. R. Jessop, Hull (Black Magpies). Very Highly Commended, H. Yardley (Isabels). Highly Commended, C. Cowburn, Leeds (Archangels); J. Thackray (Spots).

SELLING CLASS.—First, T. Knowles. Second, H. Yardley. Third, Messrs. T. C. & E. Newbitt, Epworth. Very Highly Commended, B. Leason, Driffield. Highly Commended, R. Bellamy, Leven. Commended, H. Yardley.

Mr. Challoner, of Workop, and Mr. Hewitt, of Birmingham, were the Judges of poultry; and W. W. Boulton, Esq., of Beverley, officiated among the Pigeons.

A TALKING BLACKBIRD.

ALTHOUGH from early childhood a great admirer of living birds, and having kept nearly every variety of song birds, an incident has just come to my knowledge for which I was not by any means prepared. A tenant of mine, one of a number of cottagers in my neighbourhood, reared a Blackbird last season, and his wife has taught it to whistle throughout perfectly "Pop Goes the Weasel," "The Chimes," and it will also call distinctly their dog by its name "Viper," and repeat a few other short words. Starlings I have repeatedly myself taught to whistle tunes and speak short sentences distinctly, but Blackbirds I imagined incapable of such tuition as singing tunes and talking. This particular Blackbird whistles in a very distinct undertone similar to the piping Bullfinch or the sound of a flageolet, and I should be glad to know from any of your readers whether its performances are as really unique as I suppose them to be.—EDWARD HEWITT, *Sparkbrook, Birmingham.*

P.S.—On my return from Woodbridge, on looking over the *Birmingham Daily Gazette*, I found the circumstance detailed in the paragraph enclosed; and as this poor animal was so very generally known for many years back as the first-prize winner in every case in which he competed, its reproduction would, I think, be interesting to many of your readers—more especially as "King Dick" was the size of "Remainie," the bull-dog, mentioned in your Sheffield report as being suffocated during its transit to the Sheffield Show. The end of poor "King Dick" forcibly brings to mind an epitaph on a bull-dog I once read many years back in a friend's garden. "Here lies Invincible, a noted bull-dog, but an uncompromising friend." "His heart was honest, though his face belied it."

"DEATH OF THE CHAMPION BULL DOG.—The well-known

champion bull-dog "King Dick" has paid the debt of nature under rather peculiar and interesting circumstances. On Easter Tuesday Mr. Lamphier, of Handsworth, the owner of the dog, died. After that event "Dick" exhibited the most profound grief for the loss of his master. He would not rest anywhere except on the chair upon which his master used to sit; and whenever he could get into the room in which he died he gave expression to his feelings in the most vehement howlings, broken by low growls and other vocal signs of sorrow. He refused his food, and on Sunday last he followed his much-loved master. In fact, the faithful animal may be said to have died of grief. A rarer instance of canine affection and fidelity has seldom if ever been recorded."

ARTIFICIAL SWARMS.

HAVING some bees, I wish to increase them. One hive I have had eight years; the other two years. Now, I have been very unfortunate in my bee management, or, rather say, mismanagement, not to have more than one addition in eight years. Sometimes I do catch a swarm, and lose it in the winter, but generally the swarms go off when they like, and I see them no more.

Late last season some one wrote of artificial swarms, and referred to a back Number. On turning to that Number I was not much enlightened, for it only stated that the mode of proceeding was fully described in some remote Number, and not having that Number by me, I did not obtain the information, so I lost my bees.

As swarming season is at hand, will you detail the process of getting the swarms from the old cottage hive, without risk of loss? The information may suit some one else, as well as—
JOHN EVERGREEN.

[Having two stocks you cannot do better than follow the instructions already given by Mr. Woodbury, the substance of which we now repeat for your information. "Selecting the forenoon of a fine day, the whole of the inhabitants of one hive should with their queen be driven into an empty skep. This exodus having been effected, the swarm is formed, and the bees in their new and unfurnished domicile should at once take the place of the old stock. The original hive should also at once take the place of the second stock, which must be removed to a little distance, not necessarily beyond the limits of the apiary, but so far as to prevent absentees from readily discovering it; and it is well at the same time to disguise its outward appearance as much as possible. In its new position the stock will remain apparently dormant for a few days, but in about a fortnight will probably so far recover itself as to admit of being again employed in a similar manner. The bees returning to the old spot and missing their queen, will at first be in some confusion, but will ultimately settle down to their task of forming royal cells to supply her place."]

HARDINESS OF LIGURIAN BEES.

I AM pleased to say that my twenty-six stocks of pure Ligurian bees here have all passed through the winter in the best of health. Some of them were swarms made late in the season, and had only artificial food in the hive to live upon. None of the stocks had an ounce of food given to them from September to March. I did not lose a single stock here or in either of my other apiaries, nor did I in the previous winter lose one stock out of twenty which I then had here; so I begin to think that the Ligurian bees can stand our changeable winters better than the common black bees. I had my first two swarms on May 23rd, which is very early with us, as I never had more than one swarm of black bees in May in this locality.

The very severe frost (8°) we had on the night of the 29th of April threw the bees backwards a fortnight, and on the nights of May 14th and 15th we had 5° of frost.—WM. CARR, near Manchester.

EARLY SWARMS—BLACK BEES VERSUS LIGURIANS.—In the kitchen garden of E. Royd Rice, Esq., of Dane Court, in the parish of Tilmanstone, near Sandwich, Kent, there are three stocks of bees, one of which sent out a swarm on the 8th of last month, another on the 14th, and the third on or before the 19th. In my own, and the neighbouring parishes several

swarms issued on the 16th, 17th, 18th, and 19th, and again on the 23rd, but the weather during the whole month has been most unfavourable for swarming, a strong easterly wind prevailing, which occasionally reduces the thermometer to 32° at night.—SIBERT-ON-THE-WOLD.

A TREBLE SWARM OF BEES.

ON the 20th of May, three first swarms belonging to a cottage in this neighbourhood (Taunton), all came off, pitched together, and were all put into a large ordinary straw hive, with a hole in the top. Upon lifting the hive in the evening we found it more than full of bees, so that in placing it on the stand, many were compelled to crawl outside. The owner was much alarmed, and knew not what steps to take; but after a little persuasion, I induced him to dress another hive, remove the stopper from the other, and place the newly-dressed hive upon it. I visited them on the following day, and several times since, when I fully expected to have seen large numbers killed, instead of which I have not been able to discover one dead bee, but find them all working well together, and in a few weeks hope to remove the super well filled with new honey.—LUKE TILLEY.

TOMTITS EATERS OF BEES.

THE question as to whether the tomtit, *alias* the "Hampshire bee-eater," is an eater of bees or not, having been discussed for some weeks in your columns, I beg to submit to your notice my own experience. In the beginning of the present spring, or rather when the weather became hot enough for the working of the bees, a tomtit was constantly lurking about the bee-hives, and feeding upon those unfortunates which had become entangled in some old spider webs, or from some accident were lying on the ground. It is, therefore, my opinion that the tomtit is only an eater of bees while they are in a helpless state.—WILLIAM C. ANDERSON.

OUR LETTER BOX.

WINE FROM UNRIPE GRAPES (W.B.).—Bruise and press the Grapes. To every gallon of the grape juice add a gallon of pure water. Take the bruised grapes from the press and restore them to the mash-tub, and bruise thoroughly again; then add as much water as you got pure juice from it at the first pressing; let it stand for an hour or two and press again; then put the liquid into your cask with the first pressing and the water which you have added to it. To every gallon of this mixture add three pounds of the best white sugar; let this be dissolved in the water before you add it to the grape juice, and give it a thorough fermentation. Keep your cask full, if possible, and let the yeasty substance work over at the bung, for this is the best way to get rid of the excess of mucilage, taking care to fill up the cask frequently with the must saved for that purpose. If, however, you have not a sufficient quantity of must to fill your cask and supply the waste from the bung, the following method may be adopted:—Take strips of cotton cloth, half an inch wide and 12 or 15 inches long, wet them and dip them in flowers of sulphur, light them at one end and put them into the cask, one end being secured at the bung; when the cask is filled with the vapours of the sulphur, pour in the must until the cask is about one-third full; put in the bung and roll the cask until the vapour is thoroughly mixed with the wine; repeat the process until all the must is in the cask; this will throw down the mucilage and colouring matter in which is contained the offensive taste and odour; as soon as this takes place, which will be in two or three days, draw off the must carefully, clean out the cask, replace the wine, and proceed with the fermentation as above.

UNFERTILE SPANISH EGGS (*A Daunted Beginner*).—You are having neighbours' fare. We have twenty instances of the same failure, and cannot account for it. There is nothing wrong in the ages of your fowls. Spanish have done worse than any other fowls this year; but as one egg of your hens was good, others should have been the same. They may have been chilled. Your fowls which peck off each other's feathers are feverish. Give them lettuce leaves, and remove for a time the cock whose face is pecked. The size of the egg has nothing to do with the size of the chicken.

POULTRY MARKET.—JUNE 4.

We have lately had the worst trade on record; and although the supply is by no means large, prices are hardly maintained. Our young poultry is evidently all suffering from the cold easterly wind.

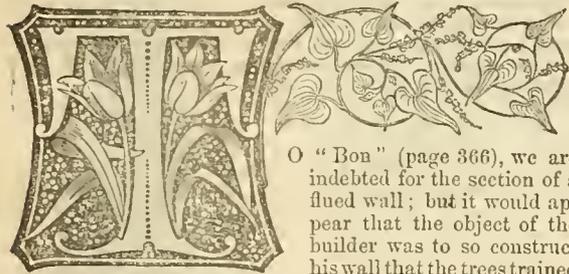
	s.	d.	s.	d.		s.	d.	s.	d.		
Large Fowls.....	4	0	to	4	6	Guinea Fowls	0	6	to	0	0
Smaller do.....	3	0	to	3	6	Partridges	0	0	to	0	0
Fowls	0	0	to	0	0	Hares	0	0	to	0	0
Chickens	1	9	to	2	0	Rabbits	1	4	to	1	5
Goslings.....	6	0	to	6	6	Wild do.....	0	8	to	0	9
Ducklings.....	2	0	to	2	6	Pigeons	0	8	to	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 12—18, 1866.	Average Temperature near London.			Rain in last 30 years.	Sun Rises.	Sun Sets.	Moon. Rises.	Moon Sets.	Moon's Age.	Clock after Sun.	Day of Year.
			Day.	Night.	Mean.								
12	TU	Allamanda Schottii.	70.9	46.4	58.6	39	m. h.	m. h.	m. h.	m. h.	Days	m. s.	
13	W	Apelexis macrantha rosea.	71.7	48.1	59.9	19	45 af 3	14 af 8	45 af 8	29 af 7	●	0 92	163
14	TH	Apelexis purpurea.	72.3	48.6	60.4	18	41 3	15 8	41 4	30 8	1	0 19	164
15	F	Beanfortia latifolia.	72.9	48.5	60.7	17	41 3	16 8	44 5	22 9	2	0 7	165
16	S	Erica tricolor.	72.5	48.9	60.7	17	44 3	17 8	54 6	5 10	3	0bef6	166
17	SUN	3 SUNDAY AFTER TRINITY.	73.0	47.9	60.5	22	44 3	17 8	6 8	33 10	4	0 19	167
18	M	Phanocoma prolifera.	72.4	49.8	61.1	20	44 3	17 8	17 9	33 11	5	0 82	168
											6	0 45	169

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 72.9°; and its night temperature 48° 3. The greatest heat was 90°, on the 12th and 13th, 1812; and the lowest cold 30°, on the 15th, 1850. The greatest fall of rain was 0.84 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

FLUED WALLS—PROTECTING FRUIT TREES.



O "Bon" (page 366), we are indebted for the section of a flued wall; but it would appear that the object of the builder was to so construct his wall that the trees trained

over it would be roasted in some parts and starved in others—at all events, the wall when heated would have the effect of subjecting the trees to extremes of heat and cold.

We may not unreasonably conclude that the effects of these extremes were disastrous; and "Bon" informs us that "the Peach wall, 290 feet long, which had, some years ago, been artificially heated at no little expense and trouble by keeping sixteen furnaces going," has been "left unheated for years," though he assigns no reason for the disuse of the means for heating.

I can confirm your correspondent's statement as to the use of fires for heating Peach walls having been discontinued in certain cases for years; and having seen the effects of walls artificially heated in the manner described by him, I am enabled to state that the results were far from gratifying. I have also seen hot walls on which Peaches, Nectarines, and Apricots were grown satisfactorily, and ripened from a fortnight to three weeks earlier than on an unheated wall. That a heated wall should, in the majority of instances, be so injurious to the Peach trees trained upon it as to completely spoil the trees in a very short time, and on the other hand be so conducive to certainty and earliness of crop, I hope to be able to show is not due so much to the greater pains taken by those who are successful, but mainly to the construction of the wall not being such as to insure great extremes of heat and cold being avoided, and the wall not being so heated by the flues that a gentle warmth may be afforded from the bottom to the top. In building such walls a total disregard of the principle that an equal distribution of the heat to every part should be as far as possible secured, has led to the conclusion that flued walls are practically more injurious than beneficial to the trees trained on them. This I readily admit is true of the majority of hot walls as constructed, and of which "Bon's" section affords an example; but I differ from those who, because they see one or many hot walls so constructed that the fires cannot be lighted without proving injurious to the trees, come to the conclusion that Peaches, Nectarines, and Apricots have not been and cannot be grown on hot walls with a certainty of a crop.

It was not till 1851 that I saw Apricots, Peaches, and Nectarines grown on a hot or flued wall good as respects both crop and quality, and from a fortnight to three weeks earlier than from unheated walls. At the time named I was serving at a place where the garden was bounded on

the north by a wall 150 yards long and 13 feet high; the garden was a parallelogram 150 yards long by 100 yards wide, enclosed by walls 10 feet high, divided in the centre into two parallelograms 75 yards one way and 100 yards the other by means of a cross wall from north to south. There were the usual slips outside the walls. Now the north wall was a hot or flued wall, and the furnaces were to the north of this wall; one half the length of the south wall, or 75 yards, being occupied by Peaches and Nectarines, and the other half by Apricot trees. This wall, as well as the others, was rebuilt in the years 1830 and 1831, and in order to have the best walls and fruit-tree borders the gardener visited, through the kindness and liberality of his employers, the most noted places in the kingdom, and he gleaned this very important fact—viz., "No hot wall that I saw at any of the places visited, having the fires lighted, had a tree upon it worth looking at, or fruit on it worth naming; but though I saw hot walls in most of the gardens visited, the majority of them were not heated, the trees being protected by netting, which was found sufficient." It had been decided to flue the whole of the walls to protect the blossom of the trees from spring frosts, but so convinced was the gardener of the practical inutility and injurious effects of a flued wall to the trees upon it, that all the walls were built solid, except the wall already alluded to, and of that one half was flued after the manner described at page 366, and the other half in the way which I shall shortly describe. The part of wall flued after the manner described at page 366 was devoted exclusively to Peaches and Nectarines, and the other to Apricots, except two trees, which were Peaches. They were the original trees that were upon the Apricot wall, and the whole extent of the wall was covered; but the trees on that part of the wall occupied by Peaches were not the original trees, but a second planting, nine years old, and covering the wall entirely.

At the time mentioned I had the care of these walls and gardens, under the gardener (who lived to serve the family of his employer fifty years), and it was a rule to heat one-half of the Apricot wall in order to obtain fruit earlier than on the unheated part, the fires being lighted on cold frosty nights after the white of the blossom was generally distinguishable, and fires were continued on cold nights and days until danger from frost was over. In 1851 the fires were first lighted on the 21st of February, the netting having been on a fortnight earlier. On the 1st of March the protective netting was put on the Peaches and Nectarines, and the blossoms were so far advanced that I considered it desirable to light the fires belonging to the half of the Peach wall in order to have Peaches, as I thought, earlier than on the unheated wall, and I therefore had four furnaces set to work; but not knowing whether I was doing right or wrong, having no orders on the matter, I took the opinion of the gardener, then ill, and his answer was "Not to heat the Peach wall under any circumstances," but to keep the netting on day and night until the flowers opened, and to keep it on during frosty days afterwards.

The fires were discontinued for the Apricots after the third week in May until the fruit began to swell for ripening.

when they were relighted and continued day and night until the fruit was ripe. The Apricots were fine, and came in a fortnight or three weeks earlier than those on the unheated wall. I was only sorry that I had not treated the Peaches in the same way, and had them a fortnight or three weeks earlier than they were likely to be ripe. In the following year, however, I was to be gratified, for on that part of the wall to be heated were the two Peach trees, and I was eager to try the effect of heat on them. It was a rule to heat one half of the Apricot wall one year, and the other half in the next, and this year it came to the turn of the wall having the two Peach trees to be heated. This was in 1852; the nets were put on the Apricots in that year on the 1st of March, and on the Peaches on the 19th of March, and the fires were lighted when the days and nights were cold. The crop was again good, the fruit ripe on the side next the wall equally with that next the sun, and, much to my satisfaction, the two Peach trees bore a good crop and fully a fortnight earlier than on the unheated wall. One of these trees was a Royal George, and on it I first saw downy and smooth-skinned fruit—that is, Peaches and Nectarines on the same tree. Why not have heated the half of the Peach wall, and have had Peaches earlier and thus prolonged their season?

The garden changed managers, the new manager did heat the Peach wall. (The trees had been eleven years planted, and with the ridgers or standards covered the wall.) The result was a fair crop, and some days earlier than on the unheated wall, but the trees were smothered with aphid and eaten up by red spider, and there was no fruit in the following year. In that year the other half of the wall was heated, and fruit was ripened some days earlier, but they were few. The heating of the wall was persisted in, and though I did not see the death of the trees, I saw fresh trees had been planted in their place in 1856. The Apricots still covered the wall, and the south wall (not flued), was still occupied by the original Peach trees producing a heavy crop of fruit.

Since that time, as well as before it, I have examined many flued walls, but have not seen any of them in use; and though I have a heated wall at present, I have not the courage to have a fire put in the furnaces, for I have tried a fire on cold frosty nights, and the only benefit I could ever perceive was that the fruit set with greater certainty; but whatever good the heating might effect was more than counterbalanced by the plague of insects that followed, and so sucked out the juices of the young shoots that the fruit fell before stoning.

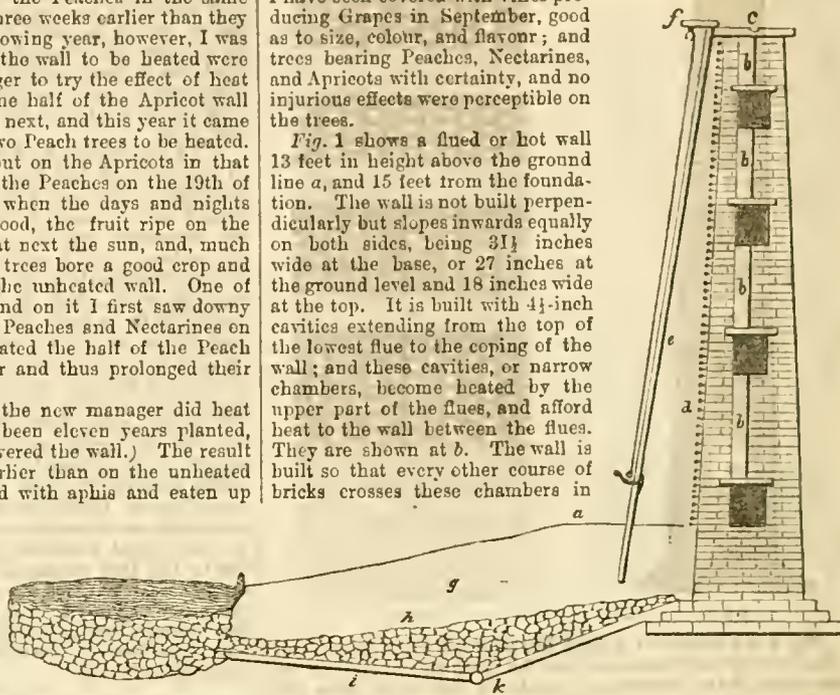
For Peaches I am certain that no flued wall is necessary to secure a crop on south aspects on this side of the border, for they produce good crops without flued walls if due care is taken to retard the blossom, and to protect it and the young fruit up to the third week in May from wet and cold, by a covering of canvas or fine-meshed netting. Except in elevated and cold localities Peaches can be ripened in our climate without the aid of flued walls or glass coverings, and the former are prejudicial rather than conducive to certainty of crop and improved quality of fruit. The Peach, I am certain, does not require any artificial roasting and starving to induce it to set its fruit; but, on the contrary, extremes of heat and cold during the setting and swelling of the fruit are injurious.

The effects of a heated wall appear to be very different as regards the Apricot; and as the radiation of heat from the bricks prevents the deposition of moisture on the blossoms, I think a hot wall does materially aid in the preservation of the future crop, besides saving from frost the setting and swelling young fruit, more tender than that of the Peach tree. The Apricot suffers but little from frost so long as the blossoms remain dry, but a very few degrees of frost will bring down the fruit in a few days afterwards like a shower of hail. If there is a fruit tree that flued walls can in the least assist in producing a crop, I think it is the Apricot, for it is not injuriously affected by a dry atmosphere, nor by one warmer in some parts than others, only it must have air. In a close moist atmosphere it will not fruit, hence the failures with the Apricot under glass, but having grown it on heated walls satisfactorily I can speak favourably of them. I have attempted to cultivate Apricots under glass and failed. I have seen others try to do so and they have failed likewise, and yet

we have it for certain that Messrs. Rivers and Pearson always obtain good crops.*

The following section is that of a flued or hot wall, such as I have seen covered with Vines producing Grapes in September, good as to size, colour, and flavour; and trees bearing Peaches, Nectarines, and Apricots with certainty, and no injurious effects were perceptible on the trees.

Fig. 1 shows a flued or hot wall 13 feet in height above the ground line *a*, and 15 feet from the foundation. The wall is not built perpendicularly but slopes inwards equally on both sides, being 31½ inches wide at the base, or 27 inches at the ground level and 18 inches wide at the top. It is built with 4½-inch cavities extending from the top of the lowest flue to the coping of the wall; and these cavities, or narrow chambers, become heated by the upper part of the flues, and afford heat to the wall between the flues. They are shown at *b*. The wall is built so that every other course of bricks crosses these chambers in



the manner of headers, every alternate brick being left out. The wall is equal to two bricks and a half thick. The chambers and flues render less bricks necessary. Its cost per superficial yard, including materials and labour, is 10s. Presuming that we had an acre to enclose in the form of a parallelogram, 272½ feet from east to west, and 160 feet from north to south, the cost of a flued wall of this kind for the northern boundary (there should be slips beyond the walls), will be £225. The coping projects over the wall 3 inches on each side, and there is no drip from it, as there is a groove in the centre of the coping at *c*. The joints are cemented, and there are gutters or grooves from the centre of the coping to the back (north side), at every 2½ feet, the grooves in the coping being cut deeper at the "run off" to give the necessary fall. The wall is furnished with wires (one-eighth inch), 4½ inches apart, as shown at *d*, the wires being passed through holes in holdfasts driven into the wall 2 inches, and projecting 1 inch. The wires when strained have a neat appearance; and the trees do equally well, if not better, trained in this way than when fastened close to the wall with shreds and nails, and the wall is no worse. Some walls that have been wired in this manner thirty-eight years have as good a face as when first erected, for the mortar has not been knocked and hammered out by the continual driving in and drawing out of nails.

In front of the wall, *e* is intended to show a pole 2 inches square, placed 18 inches from the wall at bottom, and let into the ground, that part being charred and dipped in coal tar whilst hot. The upper end of the pole rests against the coping, and under an inch-deal board 11 inches wide, fixed to the coping by means of iron plates let into the coping and leaded in. This board, *f*, serves to exclude rain and to keep the canvas dry when rolled up, it being fixed to a roller, and drawn up or down by a cord and pulley. *g* is the border, *h* drainage, and *i* concrete; *k* is a drain. The netting used to protect the trees from frost is of wool, and has a quarter-of-an-inch mesh.

Fig. 2 is a similar wall, only part of the flues are pigeon-holed instead of chambered, which gives heat equally to the wall, and avoids excessive heat in some parts and coldness in others. The spaces, *a*, are flues, and the pigeon-holes are represented by the white spaces over them. This will be best

* In an orchard-house, of course unheated, we never failed to ripen Moorpark Apricots grown in pots.—Eds.

understood by *fig. 3*, which is an interior elevation of the wall, the shaded part being the flues and the black the brickwork. The white spaces show the openings left in the brickwork.

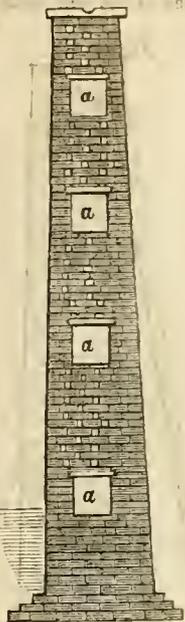


Fig. 2.

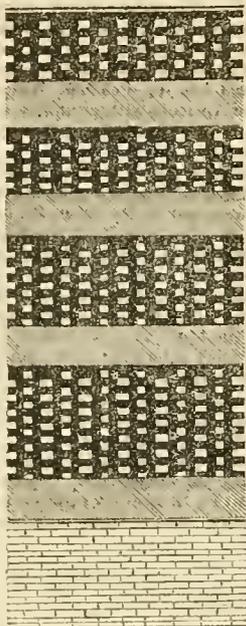


Fig. 3.

Fig. 4 is a section of a flued wall built solid, the flues being placed at different distances from the south side of the wall (on the right of the engraving),—greater at bottom, as there will be the most heat, and nearer at top, and correspondingly nearer between, as the heat will be less upwards.

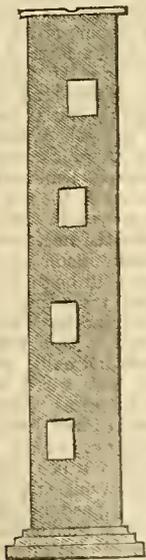


Fig. 4.



Fig. 5.

These are the only descriptions of hot walls that I have seen used advantageously; and those I have worked built in accordance with "Bob's" section I have found more injurious than serviceable in any way. The cost of these walls is about equal, the latter, *fig. 4*, being the most expensive of the three. It is built plumb. The two first slope inwards; and in this I see an advantage, as the trees get many a refreshing shower, whilst those on a perpendicular wall get little rain, and are, besides, often surmounted by a coping projecting several inches, the utility of which I have striven to discern and have not been able.

Whilst writing about walls I will take the opportunity of saying, that of all the walls I have had to deal with none surpassed that shown in *fig. 5*, it being 12 feet above the ground level, and built pigeon-holed from top to bottom, which is a great saving of material; and an equally strong wall is secured as if built solid, and not so liable to give way as a narrower one, though taking the same quantity of bricks. Such a wall for the southern wall of a garden is desirable. It should be 18 inches thick and 14 feet 6 inches high, including foundation, and its cost about 4s. per superficial yard; so that a wall of this description 272½ feet long will cost £110.

Fig. 6 is a brick-and-a-half or 14-inch wall, 12 feet from the foundation and 10 feet from the ground level. On solid ground the foundation may be nearer the surface, and the wall have 12 feet of available surface for training trees; and its cost would be for a wall 160 feet long £50, at 4s. 9d. per superficial yard. Such a wall is suitable for the east and west sides. To enclose a garden, therefore, with walls is a very costly affair. Suppose the garden were two acres in extent, it would be best disposed of in the form of a parallelogram, having an equal area within as without the walls. To wall round a garden 272½ feet by 160, thus containing exactly an acre, and this is a nice proportion, giving a large extent of south wall, or walls running from east to west, consequently facing south, the cost would be as follows:—

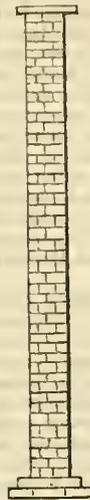


Fig. 6.



Fig. 7.

North wall, flued as <i>fig. 1, 2, or 4</i>	£225
South wall, as <i>fig. 5</i>	110
West and east walls, as <i>fig. 6</i>	100
	£435

If the east and west walls were built the same as the south wall, then the cost would be £22 more, or £457; and if instead of a flued wall to the north, one the same as *fig. 5* were built and continued all round, the cost would be reduced to £342 for the enclosing of a garden containing an acre within the walls. This may seem a very large sum; but it is not so large by £95 as Mr. Thompson states in the "Gardener's Assistant" by the most expensive plan here given, nor so much by £210 according to the last (all built like *fig. 5*), plan. The prices are those of work done, but the price varies with the expense of materials, distance of cartage, and the rate of wages.

I have known instances of the east and west walls being flued, which to me seems a waste of material and labour, a thicker wall being necessary. With glass so cheap as it is, it really seems a waste of money to build walls, and especially flued walls, beyond those necessary for protection; and for this 14-inch walls and 12 feet high above the ground are as thick and as high as need be. More money has been often wasted on hot walls and thick walls than would have built a very nice range of forcing-houses; and fruit can be grown with much greater certainty in them than on walls however artificially heated. I am no advocate of flued walls, but I have seen finer and heavier crops of fruit—Peaches, Nectarines, and Apricots, on them than in all the unheated detached houses I have yet seen.

Another subject I should like to branch, and that is, the devoting of south walls exclusively to Peaches, Nectarines, and Apricots; or, where there is a large extent of wall, one or two Plums and Cherries may be planted, but this is the exception. It seems strange that the best aspect should be exclusively devoted to that which lasts in season but a short time, some having a notion that any aspect is good enough for Pears and Plums. I confess most Pears and Plums do fairly on west aspects; but I must say that the finer kinds, fine as they are on west aspects, are much finer when grown on a south aspect. If we are to derive any benefit from cheap glass, it must be in employing it for the growth of these fruits that are not unexceptional grown on walls; but though the fact is, that those fruits not bearing with certainty and to perfection on walls will do so if the wall be covered with glass, it really gives no one

credit to cover a wall because there are trees upon it, for it does not follow if the trees upon it do ill other kinds would be subject to like imperfections. I am mindful of what I have before written on this subject; and though I see nothing to retract, I certainly think that half of the Peaches, Nectarines, and Apricots at present grown on walls would be better grown under glass. They come in from a fortnight to three weeks sooner, and those on walls make a nice succession. If I see the necessity of occupying less wall with Peaches, I do not see the necessity of covering it with glass, but of erecting a large, wide, lofty span-roof house, and growing the fruit in it instead of on the wall, for I see Pears that are cracked, pitted, and spotted on west walls much larger, much finer, and far better coloured on south walls. The best Pears we have are grown on a south wall, though we have two west walls, one 12 feet and the other 20 feet high, not a foot of which is left bare, but is so thickly covered with foliage as to resemble an Ivy-covered wall, and yet though the fruit is large and fine, the best is from trees on the south wall, and the worst from espaliers and bushes, or pyramids. I only want more south or south-west wall for some Pears which do not arrive at that perfection on espaliers and west walls, that I think they would on south or south-west aspects. Aspect has a great effect on the size and colour of Pears, and exerts an influence on their ripening. A south aspect gives fruit ripening ten days sooner than a west aspect, and a fortnight or three weeks earlier than trees as bushes, pyramids, or on espaliers.

The cost of enclosing a garden with walls may seem heavy. Where high walls are out of the question on the score of expense, a wall or walls of less height and thickness may be advantageously employed as a protection to the garden from the north, which will give an available surface for the growth of Apricots, Peaches, and Nectarines. Fig. 7 is a section of a nine-inch wall 10 feet high from the foundation. A wall of this height and thickness will not stand unless supported by buttresses or piers of a thickness equal to that of the wall, and nearly twice that in length. They should be 9 inches one way and 14 inches the other, built up with and tied into the wall, and not more than 6 feet between. They, of course, must be to the north so that the plain surface may be southwards. Its cost is 3s. 9d. per superficial yard, or 12s. 6d. lineal. It is desirable to have wings at each end, so that the violence of the west wind and cold of the east may be broken and lessened. These may be 10 or 12 feet long, and the same height as the wall. The wall may be lower, but one 7 feet in height is quite low enough for Peaches and Nectarines, and I do not care about walls so low for Apricots and Plums.—G. ABBEY.

THOMSON'S STYPTIC.

This production of Mr. Thomson's will be found very useful for many purposes, besides preventing the bleeding of the Vine. One of such purposes is healing the wounds of succulent plants, and it will be found invaluable to the Pelargonium-grower. After a new variety has been purchased, most people are anxious to propagate it as rapidly as possible; hence it often happens, that many of the plants, as soon as their heads are taken off, dwindle away and die. This is almost sure to happen with the more delicate kinds, especially if they have been subjected to the high-pressure system of propagation, which is usually the case before they leave the nurseryman's hands. In many cases they are sent off direct from the propagating-house without being properly hardened off. The check they consequently receive during their journey very much injures them, and then, as soon as the purchaser gets hold of them he is very desirous of increasing their number as soon as possible. The work of decapitation is too quickly performed for the well-being of the plant, and it often happens that the plant and the cutting die in consequence. If proper care is taken in the management of the plant after it is received, if it has been packed several days, it should be gradually inured to the light. Great care should also be observed in watering it. Water should be used only in sufficient quantity over the foliage to prevent the plant from flagging; and as soon as the plant has commenced its root-action, water may be applied to its roots. These points having been carefully attended to, and a reasonable time allowed for the subject to recruit itself, it may have its head taken off, when Thomson's styptic steps in to its aid to prevent the wounded plant from taking injury, and the cutting from decaying.

As soon as the cutting is taken off, spread a thin coat of the

styptic over the wound; this will prevent any water penetrating by the wound, and allow the sap to perform its proper functions over the remaining portion of the plant. Water should, however, be withheld for two days; after that time the sap will have commenced circulating in its proper channels, and the general work of the plant will be commenced by its rapidly pushing out several young shoots below the cut. After the wounded plant has been properly cared for, the cutting may be operated on. Two or more of the leaves should be cut clean off close to the stem of the cutting, then spread a thin coat of the styptic over each of the wounds, and if a little of it is carefully spread over the centre of the base of the cutting, it will make all secure. Care must, however, be taken not to spread it beyond the ring of the woody part of the cutting, otherwise that part of it where the roots are emitted will be completely sealed up, as it is just between the bark and the wood where the cutting emits its roots. This will prevent the water from soaking into the cutting, and ensure its striking freely. It will also cause it to strike much more quickly, because the sap is prevented from escaping, and being sealed up, as it were, in the cutting, it commences circulating over the latter almost directly after it is put in, providing the cutting is not allowed to become exhausted by flagging. A great number of cuttings of the delicate kinds of Pelargoniums, such as Mrs. Pollock, are sure to be sacrificed in the early spring months; for, when the cuttings are taken off at that time, the plants do not possess sufficient vigour to heal their wounds quickly. The smallest amount of moisture that comes in contact with the wound will cause it to decay. I have often seen the shoots decay as much as 2 and 3 inches below the point where the cutting was taken off. Here, then, is a loss of from five to fifty per cent. of cuttings, according to the size of the plant. By a judicious use of Thomson's styptic this loss may be avoided, and the work of propagation may be carried on at an earlier period in the season. For young seedling plants it is very effective in preventing their decay after they have been beheaded. It will also prove a good substitute for grafting-wax, only in this case it will require two or three layers to be put one over the other as they become dry. Grafting will be much more easily done, and more effectually, with the styptic than it would be with wax. I mean, of course, for all kinds of small pot plants, such as Roses, Azaleas, Camellias, &c.

The styptic will also prove an excellent remedy for preventing the bleeding of all kinds of Ficus; in fact, it would be highly desirable to use it for covering the cuts whenever any are made on any kind of plant. Some of our great Geranium-growers would find it very advantageous if they used it for large specimen plants when they are cut down after their season of rest. By taking this extra trouble they would save the very topmost break, and very much improve the constitution of their plants.—J. WILLS.

MR. JOHN WATERER'S EXHIBITION OF AMERICAN PLANTS.

THE Exhibition of Rhododendrons and other American plants at the Royal Botanic Society's gardens, furnished by Mr. John Waterer, of Bagshot, is this year fully equal to what it usually is. Not only are the plants in profuse bloom, but they are massed in such a manner, and the ground is so well laid out for displaying the beauties of the various groups, that the effect of the whole is most excellent. The older varieties are here well represented by hundreds, we believe thousands, of plants; and of the newer kinds there is no lack. Some of these, however, at the date of our visit were not fully in bloom. Of those that were we remarked Alexander Adie, rosy scarlet; Raphael and Sir William Armstrong, crimson; Joseph Whitworth, lake, with dark spots; Mrs. Fitzgerald, rosy scarlet; and Duchess of Sutherland, white, bordered with lilac. Of varieties noticed as new last year, Earl of Shannon, Warrior, Sidney Herbert, and Lady Emily Peel again attracted attention.

TOBACCO-GROWING IN ENGLAND.

"I HAVE not the Acts of Parliament at hand to which the communication of "X." (page 416), refers; but if the reference to the Acts by "W. C." as to the penalties be correct, I imagine that unless at least one rod or pole were planted no penalty could be enforced.

If the Act prohibits the growth of Tobacco, and then goes on to affix a penalty of £12 for every rod or pole of ground planted,

but says nothing about any less quantity, it is perfectly clear that no penalty could be enforced for planting a less quantity than a rod. The Act being a penal Act must be construed strictly. By "strictly," I mean strictly as against the makers, not the breakers, of the law.—P.

ROYAL HORTICULTURAL SOCIETY.

JUNE 5TH.

FLORAL COMMITTEE.—The great and leading interest of this meeting was occasioned by the circumstance of the Messrs. Veitch, of Chelsea, publicly receiving the challenge Orchid gold medal, value £20, offered and given by James Bateman, Esq. The Messrs. Veitch won this medal by obtaining the greatest number of certificates for Orchids exhibited at the Tuesday meetings during the years 1864 and 1865. Mr. Bateman remarked, when presenting the medal, that Messrs. Veitch had very far exceeded any other competitor in number of certificates. The splendid collections of Orchids which have been brought from the Royal Exotic Nursery on so many occasions for exhibition at the Tuesday meetings, have tended greatly to increase their interest; and every Fellow present on this day must have felt gratified at seeing the award so nobly contested for given to its worthy winners.

The Messrs. Veitch on this occasion sent twelve exquisite specimens of Orchids, which received a special certificate. First-class certificates were awarded to the following plants from the same firm:—*Nepenthes hybrida*; *Maranta tubispatha*, a very handsome spotted-foliage plant; *Maranta roseo-picta*; *Kamperija Roscoeana*; *Amaranthus* species, a very promising plant for bedding-purposes, with long, narrow leaves, with golden and deep red variegation—it was supposed that it would prove a *Celosia*; *Areca Verschaffelti*, a beautiful Palm; three distinct *Acers*, marked *b, c, d*, the last a very fine variety, with broad serrated foliage bordered by a delicate silver line; *Retinospora plumosa*; *Retinospora Veitchii*; *Retinospora* sp., with flat mossy-like branches; *Lycopodium* sp., an interesting plant, in appearance resembling a small Conifer; *Gymnogramma Lanchiana* Thompsoni, a crested variety. In addition to these were several interesting plants—those marked with an asterisk have received first-class certificates on other occasions:—A new *Coleus* (Gibsoni), which was requested to be sent again; *Palcourea discolor*; *Acinetia* sp., a very beautiful Orchid, spikes of pale flesh flowers, with minute spots; **Acer polymorphum foliis dissectis roseo-marginatis*; **Darwinia fimbriata*; **Gycerium argenteum variegatum*; three seedling *Amaryllis*—*Belle Blanchicuse*, Queen of the Netherlands, and *Belladonna*, pale-striped varieties; and **Retinospora obtusa areo-variegata*.

Mr. Bull exhibited *Terminalia elegans*, three seedling *Nephrodium* from *N. multifidum*—*melle densum*, confluent, and *ramosissimum*, and *Eranthemum argyrocœrum*, all of which were awarded first-class certificates. *Athyrium Filix-fœmina pulchrum* was awarded a second-class certificate; and from the same exhibitor came also *Lomaria falcata*; and *Cyrtanthus obliquus* (?)

Messrs. Osborn, Fulham, exhibited cut specimens of *Prunus lusitanica* var. *azorica*, a very handsome hardy-flowering shrub, very superior to the common Portugal Laurel. A first-class certificate was awarded for it. From the same firm came also *Cotoneaster* sp. from Nepal, with pale red flowers, and a collection of cut hardy shrubs and plants. Mr. Munro, Lyme Regis, sent a fine tree of *Rhododendron Falconeri*, one of the beautiful Sikkim varieties, a very delicate bell-shaped flower. Mr. Green, gardener to W. W. Saunders, Esq., brought a fine collection of *Arads* and a specimen *Saurumatum asperum*. A special certificate was awarded this curious collection of plants. From the Rev. G. Cheere, Papworth Hall, came seedling *Pelargonium* Huntsman, foliage broadly zoned; the flowers had suffered from the journey, but it appeared a promising variety; also four fine plants of the large-flowering *Mignonne*, specimens of which have been so often exhibited and admired this spring. Mr. Turner, West Derby, sent cut specimens of four seedling *Pelargoniums* of the Dr. André section, with crimped edges to the petals; and the Rev. T. Medland, the Rectory, Steyning, sent a large box of cut spikes of flowers of *Panlowmia imperialis*, which were awarded a special certificate. James Bateman, Esq., exhibited a cut specimen of the superb *Dendrobium Wardianum*, the most beautiful of the family: a first-class certificate was awarded it. Mr. Bateman likewise sent several other beautiful cut specimens of Orchids; Mr. Butley, a seedling *Gymnogramma chrysophylla*; Mr. Taplin, the Gardens, Chatsworth, cut specimens of *Jonesia asoca*, a curious Leguminous plant, which has rarely been seen in flower in this country. From the Society's gardens came several pots of an old and pretty favourite annual, *Oxalis rosea*; also a plant of one of Mr. Weir's *Dieffenbachius* with mottled foliage.

FRUIT COMMITTEE.—Mr. Bradley, gardener to Mrs. F. Norton, Elton Manor, Notts, exhibited some remarkably fine fruit of Sir Joseph Paxton Strawberry, each berry weighing at least an ounce, finely coloured, and excellent in flavour. These were intended to show how well the variety is adapted for moderate forcing. A dozen pots of Sir Charles Napier, the plants bearing freely, were also sent from the Society's garden at Chiswick. Two Queen Pineæ, exhibited by Mr. Miller, gardener to Lord Craven, Combe Abbey, Coventry, weighing almost 5 lbs., and the produce of plants nineteen months old, excited

much admiration; but fine as this exhibition of Mr. Miller's was, it was surpassed by that which he produced at the Regent's Park on the following day. The only other fruit exhibited were well-coloured *Elrège Nectarines*, shown by Mr. Sherratt, gardener to J. Bateman, Esq., Knypersley, but which were not brought before the Committee.

FORTNIGHTLY MEETING.—The Bishop of Winchester in the chair. After the election of sixteen new Fellows, the awards of the Floral Committee were announced by the Rev. Joshua Dix, and Dr. Hogg offered some remarks on the subjects brought before the Fruit Committee. Mr. Andrew Murray then brought under the notice of the meeting part of a branch of the common Laurel sent by Mr. Pearson, gardener to W. Childe, Esq., Kinlet, near Bewdley, from which the bark had been peeled four years ago for a distance of upwards of 2 feet in length. Contrary to the opinion of Thomas Andrew Knight, Esq., and other vegetable physiologists, who consider that the bark when once wholly destroyed cannot be reproduced, new bark was formed. This result was attributed to the fact that the Laurel was in a thicket, and, therefore, not fully exposed to the drying influence of the air; had it been so, and had the season been dry instead of wet, no new bark would, probably, have been formed.

Mr. Bateman then presented his challenge medal to Mr. Veitch, as being the exhibitor who had in two consecutive years gained the greatest number of marks for Orchids at the fortnightly meetings. Each year, Mr. Bateman remarked, Mr. Veitch had gained an overwhelming majority of marks; but one of the conditions on which the medal was offered having been that the same person would not be allowed to compete till some else had won a medal, Mr. Veitch would, for a time at least, be prevented from entering the field, and then, Mr. Bateman remarked, it might, probably, be necessary to make him carry weight. Mr. Veitch in returning thanks alluded to the good which had been done by the Regent Street meetings in days gone by, and expressed his gratification at their revival in the present fortnightly meetings. The establishment of these had been of the greatest benefit to the Society—had done more to benefit it than, perhaps, any other act of the Council, and though debarred from competing for Mr. Bateman's challenge medal for at least two years, he would always have the greatest pleasure in giving these meetings his hearty support by sending to them his plants, and when again eligible he would be the first to contest it.

The Rev. M. J. Berkeley remarked, in allusion to the ease of the peeled Laurel reproducing bark, that a similar instance had occurred in his own neighbourhood in the case of an Oak tree, which had been deprived of its bark for a distance of 3 feet, but had formed fresh bark and new wood from the ends of the medullary rays. A Sikkim *Rhododendron* sent to the last meeting to be named, was then stated to be *R. Blandfordianum*, of Hooker, a species of which the seedlings are extremely variable in their flowers, and it was further remarked that it, as well as *R. cinabarinum*, is poisonous to animals, and that the smoke from the wood when burning causes inflammation of the eyes. *Marantas* were next alluded to, particularly *M. roseo-picta* and *M. tubispatha*, which was stated to be the *Calathea tubispatha* of the "Botanical Magazine." The *Cyrtanthus* shown by Mr. Bull was also said to be a variety of *C. obliquus*, which was figured many years ago in the same publication. Attention was also directed to *Areca Verschaffelti*, a dwarf hybrid *Nepenthes*, and an orange and red-leaved plant belonging to the natural order *Amaranthaceæ*, raised from seed sent home from the New Hebrides by Mr. J. G. Veitch, all of which were exhibited by Messrs. Veitch. The last, it was remarked, was probably a *Celosia*. The next subject which occupied attention was a handsome Laurel, exhibited by Messrs. Osborn under the name of *Prunus lusitanica* var. *azorica*, and which, combined with great hardiness, has the merit of producing larger and finer flowers than the Portugal Laurel, and that when the bushes are but small. A small *Cotoneaster*, and the beautiful Japanese Maple exhibited by Messrs. Veitch, were then noticed; and in connection with Maples it was observed that they were not so much cultivated as they should be, and that many fine species exist in the garden at Chiswick. These it had been determined to propagate for distribution, as they would certainly not be less prized by the Fellows of the Society than tender plants, which comparatively few could grow. A branch of Silver Fir, from Major Pench, of Bristol, next came under notice. In this foliage had assumed an entirely different character from that which it usually presents, and had, moreover, become deciduous. This result was ascribed to a minute parasitic fungus on the under side of the leaves, which had only once before been observed in England, but is common in the Black Forest. A curious monstrosity in a Cabbage leaf was then referred to. In this instance, from the upper side of the midrib several distinct pairs of small blades had been produced, as if several leaves had become confluent; but on examination it was found that there was no fusion of vascular bundles, the number of these being the same as in normal leaves, and it was further found that every rib was inclined to become proliferous. This monstrosity Mr. Berkeley considered likely to throw light on the production of double flowers. A somewhat analogous case was recorded by M. De Candolle in the fifth volume of the *Old Series of the Society's Transactions*.

Mr. Bateman then drew attention to several photographs of *Wellingtonia gigantea*, as seen in its native valleys in California, and to a section of the bark upwards of a foot in thickness, brought to the

meeting by Mr. Veitch. The appearance of this was not inaptly compared to that of a large cake of gingerbread. *Jonesia asaca*, of which flowering shoots were exhibited by Mr. Tuplin, gardener to the Duke of Devonshire at Chatsworth, and who, it will be remembered, also exhibited *Amherstia noliis* in flower, was the next subject brought under notice. The *Jonesia*, Mr. Bateman remarked, was named after Sir William Jones, the celebrated oriental scholar and linguist, and belonged to the great family of Leguminosæ, like the *Amherstia*, in company with which it was found by Dr. Wallich, who considered it almost equal in beauty to that tree. The *Jonesia* was figured in the "Botanical Magazine," t. 3018, and described as having large, glossy, pinnated leaves, with from three to five pairs of leaflets. The flowers, which are in terminal clusters, are not unlike those of an *Ixora*, and according to their age are pale yellow, bright orange, or orange scarlet, growing denser in colour every day. They are fragrant just after sunset and before sunrise. The plant was also described by Dr. Roxburgh, and is figured in Rheede's "Hortus Malabaricus," and "Paxton's Flower Garden;" the plate in the latter work having been taken from specimens flowered at Chatsworth. Seeds of it were first sent to the Liverpool Botanic Garden by Dr. Carey. As the *Jonesia* and *Amherstia* were two of the most magnificent of Asiatic flowers, Mr. Bateman said that he would next allude to one found by Dr. Welwitsch in Africa, and which was reported to transcend all other African flowers. It was a species of *Camoensia*, and was figured in the "Transactions" of the Linnæan Society, where the flowers are described as being nearly a foot long, and in colour milk white, edged with gold. The plant producing them was stated to be a climber of most vigorous growth, and therefore no difficulty need be apprehended in its cultivation if it be but once introduced into this country, and Mr. Bateman expressed a hope that some enterprising nurseryman would take steps to import it. Passing on to the Orchids, Mr. Bateman said that his remarks on these must be brief; he would, however, draw attention to *Angulos Clowesii* with two flowers on the same spike, exhibited by Mr. Anderson, of Meadow Bank, near Glasgow, who, it was stated, considers that all that is necessary to increase the numbers of flowers on the spikes of Orchids is cultivation. Among other Orchids noticed were the charming *Dendrobium infundibulum* with paper-white flowers, stained in the throat with Roman red; *D. Wardianum*, which had been erroneously supposed to be the same as *D. Falconeri*; and *Odontoglossum Kleibenhaimii*. Though Orchids had done so much to please the eye, remarked Mr. Bateman, they had as yet done little for the palate, but on this occasion the Fellows and their friends would have an opportunity of tasting Orchid tea, and this he assured them from personal experience they might do with perfect safety. It was made from the leaves of *Angraecum fragrans* imported by Bousquin, of Paris, from Réunion, where it goes by the name of Faham. It is described by its importer as being much esteemed in that island and in Mauritius as a beverage, and, as such, to have some advantages over tea, an opinion, however, in which those who tasted it did not appear to coincide. Cigars made of Orchid leaves, eased in Tobacco leaves, also came from the Museum at Kew.

Five Societies were on this occasion admitted into union.

MESSRS. WATERER AND GODFREY'S RHODODENDRON SHOW.

ATTENTION was directed last week to the fine display made by the Knap Hill plants at South Kensington, and some further remarks promised. Though there are several seedlings in or coming into bloom, these for the most part are as yet unnamed; mention of them must therefore be deferred till another occasion. Among the newer named kinds we remarked H. H. Hunnewell, Charles Dickens, Stella, Mrs. W. Bovill, Lady Clermont, Alexander Dancer, and Mrs. John Clutton, all of which were noticed last year as striking varieties. In addition to these, H. W. Sargent, Francis Dickson, and Lady Armstrong, are brilliant varieties, the latter with very large trusses. *Caractacus*, Charles Bagley, Mrs. R. S. Holford, a salmon rose, and Mrs. Milner, are also especially noteworthy.

ROYAL BOTANIC SOCIETY'S SHOW.

JUNE 6TH.

Nor a few predicted that this would be merely a repetition of the International Horticultural Exhibition on a limited scale, that the interest would be gone and the flowers faded; but it was not so, for in most cases the plants were not the same, and the flowers were not faded, but exhibiting a freshness and brightness only surpassed in May. Moreover, that the interest was not gone, the numerous attendance of visitors, the length of time that they lingered before favourite objects, and the consequent difficulty which there was at all times during the afternoon in approaching the plants, constituted, we think, a sufficient proof.

STOVE AND GREENHOUSE PLANTS.—The collections of these were numerous and in excellent condition, both as regards health and bloom.

From Mr. Peed, gardener to Mrs. Tredwell, Lower Norwood, came a fine collection of tea, including *Allamanda grandiflora* in remarkably fine bloom; a splendid specimen of *Pimela decussata*, densely covered with rosy blooms; *Polygala acuminata*, producing its purple flowers very freely; and *Acrophyllum venosum*, small but in great perfection. The white-flowered *Eparis pulchellum*, and *Chorozebra Heuchmanni* and varium nanum were shown in excellent condition by Mr. J. Wheeler, gardener to J. Philpott, Esq., Stamford Hill; and in a beautiful collection from Mr. Rhodes a fine *Allamanda grandiflora*, producing numbers of its large clear yellow flowers, was very effective. This plant, we believe, was raised from Mr. Peed's, and though not equalling it in the number of flowers, was a handsome vigorous specimen. From the same exhibitor there were also large admirably bloomed plants of *Adenandra fragrans*, *Erica Cavendishii*, *Erica Kingseottiana*, one of the tricolor race, the deep crimson *Phenacoma prolifera*, *Genethyllis Hookeri*, and the finest *Dracophyllum gracile* in the Show. Messrs. Lee sent, among others, fine specimens of *Pimela Hendersonii*, *Adenandra fragrans*, *Ixora coccinea*, and *Acrophyllum venosum* with large spikes of bloom. *Rhynchospermum jasminoides*, trained in a free, easy style, and in fine bloom, was shown by Mr. Donald, gardener to J. G. Barclay, Esq., Leyton; and very good specimens of the same plant came from Mr. Kemp, Mr. Williams, Mr. Kaile, Mrs. Glendinning and Sons, and others. Mr. Donald and Mr. Williams also exhibited *Clerodendron Thomsoni*, bearing a profusion of its beautiful scarlet and white blossoms; and its variety *Balfourii*, with larger flowers, and which will probably prove more effective as an exhibition plant, came from Mr. Parker, of Tooting.

In other collections besides the plants above named we noticed *Boronia tetrandra*, *Tetratheca verticillata*, covered with its pendulous purplish violet flowers, the lilac *Tetratheca ericaefolia*, *Combretum purpureum*, *Coleonema rubra*, the brilliant scarlet *Erica westphalingia*, *Medinilla magnifica*, *Stephanotis floribunda*, *Allamanda cathartica*, *Statice Holfordi* and profusa, *Eriostemons*, *Hoyn bella*, which, however beautiful, is not very effective as an exhibition plant, owing to the drooping character of its blooms; *Aotus gracillima*, with long terminal spikes of yellow and brownish crimson flowers, *Aphelaxis*, *Vincas*, *Azaleas*, and various *Heaths*.

Awards—For ten: first, Mr. Peed; second, Mr. J. Wheeler, gardener to J. Philpott, Esq.; third, Mr. Kemp, gardener to Earl Percy, Albury Park; fourth, Mr. G. Wheeler, gardener to Sir F. Goldsmid, Burt. For eight (Nurserymen): first, Mr. Rhodes; second, Messrs. J. & C. Lee; third, Mrs. Glendinning & Sons; fourth, Mr. Williams. For eight (Amateurs): first, Mr. Donald; second, Mr. Carson, gardener to W. R. G. Farmer, Esq., Cheam; third, Mr. Kaile, gardener to Earl Lovelace, East Horsley Tower, Ripley; fourth, Mr. Coles, gardener to R. H. Page, Esq., Beckenham. For six: first, Mr. C. Smith, gardener to A. Anderson, Esq., Norwood; second, Mr. Wilkie; third, Mr. A. Ingram, gardener to J. J. Blandy, Esq.; fourth, Mr. Ward, gardener to F. G. Wilkins, Esq., Leyton.

FINE-FOLIAGED PLANTS AND FERNS.—Excellent collections of these were shown by Messrs. Williams, Barnard, Young, of Leigh Park, Taylor and Young, of Highgate. Among the fine-foliaged plants from Mr. Williams were *Alcaesia Lowii*, with its conspicuously veined deep green leaves more than 1½ foot long, and about a foot wide; one of the finest specimens of *A. metallica* ever exhibited, and measuring about 3 feet across; Variegated Aloe-leaved *Yucca*; noble specimens of *Latania borbonica*, *Chamærops humilis*, *Cycas circinalis*, and *Zamia pungens*; *Bion* edule, with fronds 5 feet long; *Dracaena lineata*, *Cyathea dealbata*, and the variegated New Zealand Flax, which, being distinctly striped with yellow, proves very effective. Other collections included *Encephalartos latifrons*, *Rhopala*, one or two remarkably fine *Theophrastus*, *Philodendron pertusum*; *Pandanus reflexus*, elegantissimus, and javanicus variegatus; Variegated *Crotons*, *Maranta zehriana*, *Aralia reticulata*, with prettily veined leaves; *Beaucarnea glauca elegans*, and *Billbergia zousta vittata*, with pale green leaves transversely barred with white. Among exotic Ferns were fine specimens of *Cibotium Schiede* and princeps; *Gleichenia semivittata* and *splanca*; *Dicksonia antarctica* and *squarrosa*; *Cyathea medullaris*, *Pteris argyrea*, Bird's-nest Fern, *Adiantum trapeziforme*, and *Woodwardia radicans*. In hardy Ferns, Messrs. Williams, as usual, took the lead in the class for twelve, besides contributing a numerous collection comprising many remarkable forms.

Awards—For ten fine-foliaged plants: first, Mr. Williams; second, Mr. Young, gardener to W. H. Stone, Esq., M.P., Leigh Park, Havant; third, Mr. Young, gardener to R. Barclay, Esq., Highgate. For six: first, Mr. Williams; second, Mr. Taylor, gardener to J. Yates, Esq., Highgate; third, Mr. Donald, gardener to J. G. Barclay, Esq. For twelve Exotic Ferns (Amateurs): first, Mr. Barnard, gardener to J. Taylor, Esq., Stoke Newington; equal second, Mr. Young, Havant, and Mr. Taylor; third, Mr. Young, gardener to R. Barclay, Esq. For twelve (Nurserymen): first, Mr. Williams. For twelve hardy Ferns: first, Messrs. Ivory; second, Mr. Kemp.

ORCHIDS, instead of being placed as heretofore on a turf bank in the large tent, were ranged in the narrow extension where the cut flowers and fruit are shown. In a collection of ten from Mr. Penny, gardener to H. H. Gibbs, Esq., Regent's Park, there were *Odontoglossum citrosomum* and *nevium*, the latter with seven spikes; the beautiful *Phalaenopsis Luddemanniana* with nine blooms; a fine *Cattleya Mossiae*, *Cypripedium levigatum*, and *Dendrobium Parishii*. From Mr. Wilson, gardener to W. Marshall, Esq., Enfield, came the

plant which excited the most interest among the Orchids—namely, a new *Oncidium* from the Organ Mountains, and named by M. Reichenbach O. Marshallianum. The flower measured quite $1\frac{1}{2}$ inch in diameter, and had a clear yellow lip and brown petals and sepals. From the large size of the flowers and their distinct colours it will, doubtless, prove an acquisition, especially as it may be expected to flower more freely in course of time. In the same collection were *Cypripedium caudatum* with six finely-coloured blooms, having the tail-like appendages 2 feet or more in length, and *Uropidium Lindenii* with three blooms. In other collections we noticed good examples of *Cattleya Acklandiae*, C. Mossie, *Lelia purpurata*, *Dendrobium formosum giganteum*, *Acridas*, *Saccolabium prunorum* and *curvifolium*, *Angaloa Clowesii* with four blooms, *Vanda suavis* and *insignis*, *Oncidium sessile*, *crispum*, a very long spike of *leucocentrum*, and *sphecelatum* in fine bloom, *Phajus Wallichii* flowering profusely, *Odontoglossum citrosum* and *Pescatorei*, *Cypripedium barbatum*, *Hookeri*, *Veitchii*, and *venustum*, and *Oreelis foliosa*.

Awards—For ten: first, Mr. Penny; second, Mr. Wilson; third, Mr. Bullen, gardener to A. Turner, Esq., Leicester; fourth, Mr. Robson, gardener to G. Cooper, Esq., Old Kent Road; fifth, Mr. Page, gardener to W. Leaf, Esq., Streatham. For six: first, Mr. Williams; second, Messrs. Lee; third, Messrs. Jackson & Sons; equal fourth, Mr. Parker, and Mr. Bull. For eight: first, Mr. Wiggins, gardener to W. Beck, Esq., Isleworth; second, Mr. Young, gardener to W. H. Stone, Esq.; third, Mr. Peed; fourth, Mr. Wilcock, gardener to Dr. Pattison, St. John's Wood.

AZALEAS.—Large specimens were past their best, but some of less size than at the earlier Shows were exhibited in excellent condition by Mrs. Glendinning & Sons and Mr. Carson.

Awards—For six (Amateurs): first, Mr. Carson; second, Mr. G. Wheeler. For six (Nurserymen): first, Mrs. Glendinning & Sons; second, Messrs. Lee; third, Mr. Rhodes; fourth, Messrs. Cutbush & Son.

HEATHS.—Of these there were several excellent collections, consisting of the same kinds as noticed in previous reports.

Awards—For nine: first, Mr. Rhodes; second, Messrs. Jackson. For eight: first, Mr. Peed; second, Mr. J. Wheeler; third, Mr. G. Wheeler; fourth, Mr. Kemp. For six: first, Mr. Ward; second, Mr. A. Ingram; third, Mr. Young, Havant; fourth, Messrs. F. & A. Smith.

ROSES.—Nice groups of pot plants were furnished by Messrs. Francis, of Hertford, and Messrs. Paul & Son, who were first and second in the Nurserymen's class, and by Mr. Terry, who received a first prize in the Amateurs' class. Of cut blooms there were beautiful examples of *Maréchal Niel* from Messrs. Paul & Son and Mr. Mitchell, of the Pitdown Nurseries, those from the former being especially fine. *Alba rosea*, *Gloire de Dijon*, *Louise de Savoie*, and *Senateur Vaise* in Messrs. Paul's boxes, and *Joséphine Malton*, *Madame Fillion*, *Centifolia rosea*, and *Marguerite Dombain* in Mr. Mitchell's, were conspicuous for their beauty. From J. Hollingworth, Esq., Maidstone, came excellent blooms grown out of doors.

Awards—For twenty-five (Nurserymen): first, Messrs. Paul & Son; second, Mr. Mitchell. For twenty-five (Amateurs): first, J. Hollingworth, Esq. For twenty-four: first, Mr. Mitchell; second, Messrs. Paul & Son; third, Mr. Turner.

PELARGONIUMS constituted one of the best features of the Show, and rarely have the show varieties been seen in greater perfection. Such plants as those exhibited by Mr. Bailey, gardener to T. T. Drake, Esq., Shardelose, measuring from 4 to 5 feet across, and withal in profuse bloom, were surprising even to those who had seen his fine exhibitions of former years, and equally so were Mr. Turner's plants, and some of Mr. Fraser's. In the Amateurs' class Mr. Bailey, who, it is scarcely necessary to remark, was first, had very large and fine plants of *Flora*, *Lord Clyde*, and *Spotted Gem*, *Lady Canning*, *Ariel*, *Middle Patti*, *Nestor*, *Desdemona*, and *Golden Hue*. Mr. Nye, gardener to E. B. Foster, Esq., who was second, had excellent plants of *Desdemona*, *Sir Colin Campbell*, and *Spotted Gem*, also *Lord Clyde*, *Gariibaldi*, and *Rose Celestial*. In the Nurserymen's class Mr. Turner was first with splendid plants of *Confagration*, *Lord Clyde*, *Desdemona*, *Fair Rosamond*, *Fairest of the Fair*, *Beacon*, *Pericles*, *Viola*, and *Middle Patti*; and Mr. Fraser second with, amongst others, remarkably fine examples of *Rose Celestial*, *Lord Clyde*, and *Sausparril*. Of fancy varieties Mr. Bailey, Mr. Turner and Mr. Donald exhibited very good specimens, consisting of *Crystal Beauty*, *Marionette*, *Lady Craven*, *Lucy*, *Delicatum*, *Edith*, *Roi des Fantaisies*, *Undine*, *Miss-in-her-Teens*, *Arabella Goddard*, &c.

Awards—For nine (Amateurs): first, Mr. Bailey; second, Mr. Nye; third, Mr. Ward; fourth, Mr. Wiggins. For nine (Nurserymen): first, Mr. Turner; second, Mr. Fraser. For six fancy (Amateurs): first, Mr. Bailey; second, Mr. Donald; third, Mr. Weir, gardener to Mrs. Hodgson, the Elms, Hampstead. For six (Nurserymen): first, Mr. Turner; second, Mr. Fraser.

NEW PLANTS, &c.—Large collections of new plants were exhibited by Messrs. Veitch and Mr. Ball, but nearly all have been noticed in our Floral Committee and other reports. From Mr. Parker, Tooting, came a *Silver Fern*, *Nothochlana cratacea*, and *Polypodium incurvatum* with large, bold fronds; and from Messrs. Ivery several new varieties of hardy *Ferus*, to which allusion has already been made. Messrs. Jackman contributed *Clematis Alexandra*, *Velutina purpurea*, very deep violet purple, and *Magnifica*, longitudinally banded with

collection, in which were several *Nosegays*; and St. George, Sir Joseph Paxton, and *Crimson Queen* received first-class certificates; and a like award was made to Mr. Watson, St. Albans, for *Excelsior*, a salmon-scarlet *Nosegay*. Mr. Turner, Slough, also received certificates for *Fancy Sylvia*, a pretty light variety; *Tormentor*; *Favourite*, with a dark top edged with crimson and a white throat; *Lord Lyon*, dark top, white throat, and lower petals rose, flushed with violet; *Rustic*, and *Nosegay Duchess of Sutherland*. *Negressa*, *Milton*, and *Unison* from Mr. Nye, also received first-class certificates; and a similar distinction was conferred on *Gloire de Nancy* from Messrs. E. G. Henderson and Co., a double scarlet, as well as on *Lady Callum*, a charming tricolor-leaved variety. By the same firm and Messrs. Carter & Co., excellent groups of similar kinds were also shown. *Petania Illuminator*, a showy variety in the way of Mrs. Ferguson, was exhibited by Mr. G. Clarke, Brixton Hill.

MISCELLANEOUS.—Among these subjects may be included *Pansies* from Messrs. Downie & Co.; *Hooper*, of Bath; *Fraser*, of Belmont, Edinburgh, and *Kingston*; and *Pinks* from the last named. Baskets of ornamental plants, came from Messrs. Cutbush, and *Camellia*-flowered *Balsams*, *Agaves*, and beautiful *Anætochilus*, from Mr. Williams. *Cytisus Laburnum Alkekengi*, with long racemes of yellow flowers, and blooms of *Paulownia imperialis* were shown by Messrs. Paul and Son; and a fine basketful of the same by Mr. Masters, gardener to the Earl of Macclesfield, Sherborne Castle, Oxfordshire. Several pots of the pretty hybrid *Aubrietia Campbelli*, the variegated *Crested Dog's-tail Grass*, which has before been noticed as extremely ornamental, *Blandfordia nobilis grandiflora* with showy orange blossoms, *Variegated Maize*, and a numerous and very fine collection of variegated and coloured-leaved herbaceous plants, were exhibited by Messrs. E. G. Henderson. *Variegated Maize* and *Ornithogalum thyrsoides album*, in addition to the variegated *Pelargoniums* already noticed, came from Messrs. Carter & Co.; and well-grown *Fuchsias* were shown by Mr. Weston, gardener to D. Martineau, Esq., Clapham Park, and Mr. Cannell, Woolwich.

FRUIT.

The show of fruit was good without being extensive, with the exception of *Grapes*, which were numerously exhibited and in great perfection.

PINES.—The only *Providence* shown was one of $7\frac{1}{2}$ lbs. from Mr. Westland, gardener to Lord Belper, Kingston Hall, to which a first prize was awarded. To make up for this deficiency *Queens* were well represented, and of a weight but rarely seen of late years. Mr. Miller, gardener to Lord Craven, Combe Abbey, was first with a handsome fruit of $5\frac{1}{2}$ lbs.; and he also exhibited, not for competition, half a dozen weighing 4 lbs., 4 lbs. 7 ozs., 4 lbs. 10 ozs., 5 lbs., 5 lbs. 3 ozs., and $5\frac{1}{2}$ lbs., thus showing that he was able not merely to produce one fruit of extraordinary weight, but many equally good. No better proof of good cultivation than this could have been afforded. Mr. Barnes, Bicton, was second with a fruit weighing $3\frac{3}{4}$ lbs., and Mr. Jones, gardener to Lady Mill, Ramsey, third. In the class for any other variety Mr. J. Douglas, gardener to F. Whitburn, Esq., Ilford, was first with a very good *Smooth-leaved Cayenne* of $5\frac{1}{2}$ lbs., and Mr. Powey, gardener to the Rev. J. Thorneycroft, Cogleton, second with a well-ripened *Black Prince* of 6 lbs. The same variety, weighing $7\frac{3}{4}$ lbs. from Mr. A. Taylor, gardener to H. E. M. Ingram, Esq., Temple Newsam, was third.

GRAPES.—*Black Hamburgs* were almost without exception very good, though in some instances somewhat lacking in that deep colour which is so pleasing to the eye but not inseparable from excellent flavour. Mr. Meredith and Mr. Clement, East Barret, were placed equal first with excellent bunches, those from Mr. Meredith being very perfect in colour. Mr. Allen, gardener to Capt. Glegg, Withington Hall, was second; and equal third prizes were awarded to Mr. Meads, gardener to R. Currie, Esq., Minley Manor, and Mr. Osborne, Finchley. Excellent bunches were exhibited in the same class by Mr. Turner, Mr. Miller, Mr. Wallis, Mr. Clement, and others. In *Black Prince* or *West's St. Peter's*, Mr. Meads and Mr. Hill, gardener to R. Sneyd, Esq., had, as usual, a close contest with the former variety, and an equal first prize was awarded to each; the bunches, however, though very fine, did not come up to the superb productions of the last and previous years. Mr. Allport was second with finely coloured bunches of *West's St. Peter's*; Mr. M. Henderson, gardener to Sir G. Beaumont, Bart., Cole Orton Hall, third with *Black Prince*. The same kind, but the bunches more resembling a *Hamburg* in their style of growth, was shown by Mr. Lynn.

Of other varieties there were several good bunches of *Blackland Sweetwater*, *Black and Grizzly Frontignan*, *Chasselas Musqué*, and excellent *Muscata* from Mr. Turner and Mr. Tansley, gardener to A. Moss, Esq., Chadwell Heath.

Awards—For *White Muscadine* or *Sweetwater*: first, Mr. Osborne; second, Mr. Hill; third, Mr. Bailey. For *Frontignans* or *Chasselas Musqué*: first, Mr. Allport; second, Mr. Bannerman, gardener to Lord Bagot, Rugeley; third, Mr. M. Henderson. For any other variety: first, Mr. Turner; second, Mr. Tansley; third, Mr. Coles.

MELONS.—Of the *Green-fleshed* varieties the best were *Meredith's Hybrid*, *Queen Emma*, a seedling from it, and *Heckfield Hybrid*; and of *Scarlet-fleshed* *Scarlet Gem* and *Tegg's Hybrid Scarlet*.

Awards—For *Green-fleshed*: equal first, Mr. Sage, gardener to Earl Howe, and Mr. Dwerrihouse; second, Mr. Carr. For *Scarlet-fleshed*: first, Mr. Togg, gardener to the Duke of Newcastle, Clumber; second, Mr. Bailey.

PEACHES AND NECTARINES were not numerous, but for the most part good. The former chiefly consisted of Royal George and Grosse Migoune; the latter of Violette Hâtive, Elrage, and Hunt's Tawny.

Awards—For Peaches: first, Mr. Taylor; second, Mr. Sage; equal third, Mr. Whittaker, gardener to Lord Crewe, and Mr. Tegg; fourth, Mr. Evans, gardener to C. N. Newdegate, Esq., M.P. For Nectarines: first, Mr. Turner; second, Mr. Lynn; third, Mr. Allen; equal fourth, Mr. Hill and Mr. Evans.

MISCELLANEOUS.—The remaining subjects were so few in number that they may all be included under this head, though for some classes were assigned. Of Cherries there were good dishes of May Duke from Messrs. Jackson, of Kingston, and Mr. Wilson, of Warwick. Black Tartarian and Frogmore Forcing, from an east wall, were also shown; and in the White class Governor Wood, pale yellow mottled with red, and Elton. Of Strawberries there were good dishes of Sir C. Napier, Sir J. Paxton, Empress Eugénie, Marguerite, and British Queen; and of Figs, fine fruit of the Castle Kennedy from Mr. Fowler of that place, and Brown Turkey from Mr. Jones. Good baskets of Black Hamburgh Grapes came from Mr. Clements, Mr. M. Henderson, and Mr. Wallis; Citrons from Mr. Elliott, gardener to Lady Palmer, Leicester; and boxes of Peaches and Nectarines respectively from Mr. Allen, gardener to E. Hopwood, Esq., and Mr. Allen, gardener to Capt. Glegg. A brace of a large Cucumber, called Lancashire Witch, was shown by Mr. Morris, gardener to Col. Clifton.

Awards—For Black Cherries: first, Messrs. Jackson; second, Mr. Wilson; third, Mr. Lynn. For White: first, withheld; second, Mr. Wilson. For Strawberries: first Mr. McIndoe, gardener to Coles Child, Esq.; second, Mr. Turner; third, Mr. Johnson, gardener to the Marquis of Ailesbury. For Figs: first, Mr. Fowler; second, Mr. Jones.

FRAGMENTS ABOUT THE INTERNATIONAL HORTICULTURAL EXHIBITION.

BEDDING GERANIUMS.

"TEMPORARILY suspended business," was the ominous notice I saw on the doors of many an establishment lately, and I suppose it was infectious, for I had fully made up my mind to give some further notes on the International last week; but many of our patient readers who know what travelling is, to be worried and jaded with journeying, and with the excitement inseparable from seeing strange sights and places, will, I am sure, take as a sufficient reason for my silence the excuse that our floral contributor has "bolted." I am really anxious to say a few words upon this great display, because there was one department which seemed to me to be as generally attractive as any, and which manifested as many points of interest, and that was the large and varied display of bedding Geraniums. Every one is on the lookout for them—they suit every one's pocket and most people's taste; and hence to admire what was new, and wonder what we should come to next, was the occupation and talk of many a demented horticulturist; and, in truth, there was enough to excite admiration, whether one regarded the fine plants exhibited by some growers, or the striking novelties brought forward by others. As to the general merits of these plants, I still maintain my "idiosyncrasy," that the true Zonales (although many of them have no *zone* at all), are preferable to the Nosegays; and this I say notwithstanding the beautiful varieties I saw there, for it is just as these hybrid Nosegays gain more of the Zonale character and lose the Nosegay, that they become more attractive. Thus, that very fine flower Rebecca approaches in its form and size very much more the Zonale than any I have yet seen; and, by-and-by, I think we shall see this hybridisation so carried out, that the colours of the one section will be combined with the round form and large petals of the other.

By far the finest group of Zonales was contributed by Mr. Fraser, of Lea Bridge. It contained fine plants and well named of Emile Lican, good salmon; Madame Werle; The Clipper, fine scarlet; Marie Virgo, Malakoff, Eugénie Mézard, Mons. Barré, Lord of the Isles, fine; Mons. G. Natchet, and Rosso Rendatler. The second collection was that of Mr. Bermitte, Finchley; the plants were not so large. The third was from Mr. Charles Turner. The only collection of Nosegay Geraniums was that of Mr. William Paul, Waltham Cross. It contained fine plants of Cybister, Amy Hogg, Rebecca, Glowworm, Crimson Queen, Dr. Hogg, Wood Nymph, Nosegay, Duchess, Scarlet Dwarf Tiara, and Waltham Seedling. In Variegated Geraniums a beautiful collection was shown by Messrs. E. G. Henderson & Co., containing Silver Nosegay, Snowflake, Lady Callum, very beautiful; Queen of Queens, one of Mr. Bull's fine seedlings; Countess of Tyrconnell, Oriana Improved, Meteor, Mrs. Pollock, Rosette, Mrs. Cashion, and Beauty of Guestwick. Messrs. Fraser had a good collection also, containing Gold Pleasant, Italia Unita, Mountain of Snow, Yellow Belt, Fontainebleau, Mrs. Pollock, Argus, Variegated Nosegay, Glowworm, Golden Vase, and Flower of Spring. Messrs. Saltmarsh, who took the third place, had smaller but well-done plants of Variegated Nosegay, Mrs. Pollock, Burning Bush, Variegated Tom Thumb, Mrs. Mildmay, Variegated Nosegay, Cloth of Gold, Alma, Bird of Paradise, Electric, and Countess. I think, however, that one may safely say that the chief interest connected with this part of the display was centered in the seedlings that were brought forward by several growers, conspicuous amongst whom were Messrs. F. & A. Smith, of

Dulwich; Messrs. E. G. Henderson & Co.; Messrs. Garaway, of Bristol; Saltmarsh, of Chelmsford; and Chater, of Braintree. These were mainly in the tricolor variegated class. Mr. Wm. Paul and others contributed also largely in the Zonale and Nosegay section. It is, indeed, hard to particularise where so many beautiful things were to be seen; but in Messrs. Smith's collection, Jetty Lacy, Souvenir de Sir Joseph Paxton, Aurora, L'Empereur, and Refulgens; these were all fine. Many others also were good, and I foresee the greatest difficulty will be, by-and-by, to select which are best to be grown. In Messrs. Henderson's collection, which was shown in a purple-coloured case covered with plate glass, were Lady Callum, good; Lucy Grieve, bright, but a shy grower; Saphia Cusack, good. Messrs. Saltmarsh had their fine variety Meteor, in Mrs. Pollock's style, and Queen of the Fairies, a charming little white-variegated kind with a salmon flower having a white centre, looking almost like a variegated Henri Desbois. Mr. Jabez Chater had a very fine seedling, Senior Wrangler, which in habit and colouring seemed to be all that could be desired. In Messrs. Garaway's set were Queen of Tricolors, good, and Princess Lichtenstein; while in the white tricolor section, Mr. Hally, of Blackheath, showed Sirius and Mirth. Mr. W. Paul was the chief contributor in seedling Zonale and Nosegays. Rebecca, of which I have already spoken, and Prince of Orange, seemed to be the best. Mr. Wm. Bull sent a very pretty variegated Ivy-leaf, called Silver Queen; and Messrs. Downie, Laird, & Laing contributed their fine pink-flowered variety, Wiltshire Lass. As I think over these, the instalments of yet greater numbers which will be brought forward from time to time, I seem to be bewildered at the notion, and although at present these variegated kinds are only sought after for their foliage, I believe that by-and-by the flowers, will form a very marked feature in them; and if we can get not only the scarlets, but the salmons, pinks, and whites amongst them, one cannot, I think, imagine anything more beautiful than a collection of such varieties would be.—D., Deal.

LIST OF THE PAPERS AND SUBJECTS PRESENTED TO THE BOTANICAL CONGRESS.*

MR. JAMES ANDERSON, Meadow Bank, Glasgow: Observations on the temperature of water, and its effects upon plant-cultivation.

Mr. Anderson considers that practical gardeners do not attach sufficient importance to the science of horticulture, but rely too much on routine, especially so with reference to the temperature of the air in plant-houses, and to that of the water supplied to the plants. He advocates the importance of employing water at least as warm as the air, or a little warmer, for watering tropical plants, especially Orchids.

M. ANDRÉ, Paris: On landscape gardening and garden architecture in Paris from ancient times to the present, with remarks on the present style.

M. BAUMANN, Ghent:

1. Eulogy on English exhibitions.
2. Critical observations on Belgian exhibitions.
3. Reply to the advocates of the superiority of Belgian arboriculture.

M. A. BLYERT, Christiana: On the geographical distribution of plants in the Sognefjord, west coast of Norway.

M. BOYMER, Ghent: On the variegation and colour of leaves.

M. BOSSIN, Paris:

1. Is there any constant external botanical character by which it may be possible to tell at a glance what seedlings will produce double flowers, from those which only produce single ones, and if such exist what is that character?

2. To facilitate intercommunication between the natives of different countries, should Latin adjectives be employed to designate kitchen garden plants? Supposing the use of such adjectives to be considered desirable, how should they be adapted to generic names?

3. Is the Pear known as the Belle Angevine, Royale d'Angleterre, &c. [Uvedale's St. Germain], French, Belgian, or English? Are the date and place of its origin, and the name of its raiser known?

MR. W. BULL, Chelsea: On the relation of horticulture and botany to mankind in general.

MR. CARROLL, Glasnevin: On garden drainage.

The author, after alluding to the necessity for, and the advantage to be derived from cleansing cultivated ground, goes on to state that no adequate provision is made to guard against drains being choked or stopped, and, in many cases, rendered quite useless, and even mischievous, by the intrusion of the roots of plants, and the deposit of

* These abstracts are only intended to convey an idea of the contents and object of the several papers, and are not to be considered as complete. In a few instances they have been supplied by the authors themselves; in others they have been drawn up by the Committee; while in those cases where no such *résumé* is given, it is to be understood that the authors have not sent in their communications or their abstracts in time for publication.

oxide of iron, carbonate of lime, &c. The evil in question he proposes to remedy by laying a body of porous material beneath the drainage-pipes instead of above them; and this, because he has observed that roots always descend by preference to the bottom of any such porous substratum as they may come in contact with.

Professor DE CANDOLLE, Geneva: On a recent and very exact measurement of the diameter of the trunk of one of the gigantic Sequoias of California.

M. De Candolle in this paper gave the measurements of one of the huge specimens of Sequoia (Wellingtonia) of California—viz., that known as the Old Maid. This tree has been broken off by a storm at a height of 128 feet, its base cut across now serves as a dancing-floor. M. de la Rue has recently measured the diameter of this tree in the following way. A slip of paper was stretched across the diameter of the trunk, the annual rings being marked off with a pencil on the paper, according to the convenient method originally proposed by Augustin Pyramus De Candolle. This paper was exhibited by M. De Candolle, and the following details were given. The diameter at about the height of 6 English feet was 26 feet 5 inches English. The entire height of the tree, before it was broken by the wind, was approximately 350 feet. The number of rings was counted by M. de la Rue and his assistant, one going from the circumference towards the centre, the other in the opposite direction. The one counted 1223 rings, the other 1245, which were marked on the slip exhibited by M. De Candolle. The mean of the two observations, which is no doubt nearly correct, gives the tree an age of 1234 years, which is not an extraordinary one for trees, especially Conifers; there are, for instance, Yew trees which date back from the Christian Era. The Sequoias grow in a deep and rich soil, and their rate of growth appears to have been very uniform; thus on the slip it may be seen that at the age of 400-500 years, the annual rings were still thick, while in ordinary trees the layers become thin at from 80 to 120 years, according to the kind of tree and other circumstances. Specimens of the wood were also exhibited.

Professor CASPARY, Königsberg: On the change in the direction of the branches of woody plants caused by low degrees of temperature.

The author, in this paper, gives with much elaboration the result of his observations on the motion observed in the branches of trees in frosty weather. He shows that there is in winter a movement of the branches to the left-hand side, the amount of which is in direct proportion to the intensity of the frost. 2ndly. There is in many cases, in addition to the lateral motion, a vertical one from above downwards, also in proportion to the intensity of the frost. 3rdly. In other cases the vertical motion takes place in the opposite direction—that is, the branches move upwards as soon as frost sets in, and rise proportionately to the severity of the cold—e.g., *Acer Negundo*, &c. 4thly. In other woody plants the branches are observed to rise in mild weather, and to droop during severe frost—e.g., *Æsculus hippocastanum*, &c.

Major TREVOR CLARKE, Daventry: On a certain phenomenon of hybridism in the genus *Mathiola*.

Mr. B. CLARKE, London: On the floral envelopes of *Lauraceæ*.

The author regards the floral envelopes of *Lauraceæ* as double, consisting of a trimerous calyx and corolla, and supports his views by a reference to those of *Laurus* itself, the fourth sepal of which he considers to be internal, and belonging to the petaline series, the other two divisions of that series being converted into stamens. He refers to the near affinity of *Hornandia* (recognised by all authors from Jussieu downwards), and of *Gyrocarpon* (pointed out by Robert Brown, and adopted by all subsequent writers), and to the evident relation of the last-named family to *Combrétaceæ* (of which indeed Lindley regarded them as merely a section), and derives, from a comparison with all these plants, further arguments in support of the correctness of his notion. Evidences of near relationship are also deduced from the structure of their ovaries and the attachment of their ovules, and the author finally arrives at the conclusion that *Lauraceæ* are "*Combrétaceæ*, with a superior ovary and sepaloid petals."

Dr. ALEXANDER DICKSON, Edinburgh: On the leaves of *Sciadopitys* and *Phyllocladus*.

Mr. W. EARLEY: On the preparatory formation of trained wall-fruit trees.

The writer sets forth that the present system of pruning trained trees in the nurseries is objectionable, on the ground that the too free use of the knife injures and often destroys the constitution of the tree when in a young state, and is one cause of wall-trees shrivelling and dying. It is also the cause of a too gross aftergrowth, and consequent unfruitfulness. He advocates, in place of the present system, summer pinching, which attains the end sought in less time, and produces a sounder tree, more favourable to removal.

Professor GOEPPERT, Breslau:

1. On the arrangement of Alpine Plants in our gardens.

The author condemns the indiscriminate planting, and total absence of order or arrangement of the alpine and arctic plants cultivated in our gardens, and considers that one object in our hotanic gardens should be the illustration of botanical geography. About 450 of the flowering plants of Germany and Switzerland may be looked on

as truly alpine, and of those about two-thirds are grown in the Breslau Botanic Garden; some in pots, others planted out in a space of about a Prussian acre in extent, planted out amongst various kinds of stone and rock in eight groups, as shown in the accompanying photographs. The red snow, *Protococcus nivalis*, grows here in a hollow slab of granite. The plants are arranged in groups according to the levels at which they grow in their native habitats. In this way the relation of vegetation to altitude may be seen at a glance.

2. Palæontology and our botanic gardens.

The author draws attention to the intimate connection between recent and fossil botany, and gives an account of the steps he has taken in the Breslau Botanic Garden to illustrate the latter, by forming a model section of the coal formation, with its characteristic plants. In a similar way the enormous trunk of the *Pinites Protolurix*, discovered and described by the author, serves as a representative of the tertiary formation. The paper is accompanied with photographs.

Mr. S. HIRBERD, London: On the naming of plants.

"The importance of botanical nomenclature to science, art, and literature.—Classical origin of many of the names of plants.—Names of plants divided into two classes, natural and artificial.—Prevalence of artificial names at the present time; objections to them.—Proposed revision of botanical lists.—Proposed establishment of a board of botanical nomenclature."

Dr. HILDEBRAND, Bonn: On the necessity of insect agency in the fertilisation of *Corydalis cava*.

Dr. Hildebrand concludes from his experiments, that the flowers of *Corydalis cava*, when protected from insects, and thus acted on by their own pollen, form no capsules. 2nd. That fruit is very seldom formed when the flowers of the same raceme are crossed with each other. 3rd. By the crossing of flowers on different individual plants alone, is perfect fertilisation insured.

Mr. J. E. HOWARD, London: Observations on the present state of our knowledge of the species of *Chinchona*.

"The chief cause of the confusion in our knowledge of the *Chinchonas* has been the tendency to systematise without a full acquaintance with the details. I entirely disbelieve in all the so-called typical forms, and in all the attempts to classify and arrange them. The very best of these attempts seems to me to break down (as shown by Karsten), even as regards the exact limits of the genus itself, which blends by intermediate links with the other *Chinchonaceæ* genera. I wish to direct especial attention to the spelling of the name of the genus, whether as *Cinchona* or as *Chinchona*; also to the name of an allied genus, whether as *Cascarilla* or as *Ladenbergia*. Nothing would tend so well to settle these questions as the free expression of opinion at a Botanical Congress. I would also point attention to the necessity of considering some as markedly distinct forms rather than as mere varieties having sub-varieties, until all ends in confusion. If this be admitted, the *Chinchona pitayensis*, *C. lancifolia*, *C. purpurea*, *C. erythroderma*, *C. Pelletierana*, &c., would take their legitimate place; and I propose, by the side of these, to place the *C. Bonplandiana* vars. *colorata* and *lutea*, as representing a distinct form of the Loja bark. I would confine the name *Chinchona Coudaminia* to the real *Quina primitiva* (if the having cured the Countess of Chinchon entitles it to this appellation), abolishing Pavin's barbarous name *Chahnargnera*. I have attempted to reduce into practical use Karsten's varieties of *C. lancifolia*—viz., *obtusifolia*, *obovata*, *tunila*? *angustifolia*? and *Almaguerensis*? The last three I venture myself to suggest. The varieties of *Chinchona Calisaya* I do not venture to do more than allude to, as, I hope, Dr. Waddell may farther elucidate this subject. In conclusion, I will express my opinion that every well-defined region of the Andes has its own prevalent and characteristic *Chinchonas*, which are incapable of being reduced to any one typical form; and I believe that no one species has been clearly proved to prevail unchanged from end to end of the *Chinchonaceous* region; and I think that the plants which resemble each other in distant parts will be found analogous rather than identical."

Mr. Howard has succeeded in obtaining quinine from the bark of *C. officinalis*, which he cultivated in his own stove, and procured very nearly as much quinine as is yielded by bark of the same age in its native country. This is probably the first time that quinine has been extracted from bark grown in Europe.

Mr. H. HOWLETT: On night-covering and shading of plant and forcing-houses.

The author's object is to combine shading with night covering by means of one contrivance fitted to the roof. He points out the necessity for the former, and the great advantages to be derived from the latter; and suggests that both may be secured, by fitting on the roof a series of louvre boards moved by levers. The suggestion is offered as affording ground for discussion, but has not been practically tested.

M. VAN HULLE, Ghent: Rational method of pruning.

The writer assumes that the fruits produced in England are abundant, but small, and usually produced by trees left to their natural growth, owing to which they are neither so handsome in form nor so productive as they might be. Their productiveness in England, such as it is, is due rather to the skill displayed and cost incurred in managing the ground than on the management of the trees. The

writer assumes that the English prune their trees to make them grow, without properly considering regularity of form or size of fruit.

He recommends pruning to obtain symmetrical trees and large fruit, by recognising the character of the different branches; as, for instance, whether fruit-bearing or wood-bearing, and treating them accordingly, in opposition to the system of treating all alike, which he calls the old system, and speaks of it rather as "pruning without system." The old plan leaves nature to form wood or fruit branches at will; he would so control nature, as to form either at pleasure.

Professor KARL KOCH, Berlin: Some propositions with respect to systematic botany.

Three especial sources of difficulty beset the systematic botanist of our day. 1st. The confused nomenclature. 2nd. The scattered literature. 3rd. The distribution of great numbers of plants by nurserymen under fanciful names. One man can do but very little to remove these obstacles, but a Congress of botanists and horticulturalists will be better able to effect the necessary changes and improvements.

Professor Koch proposes to obviate the confused synonymy by retaining the specific name first given; but as regards the generic name, to place that which recent investigation has adopted first, and the one by which it was first described afterwards, in a parenthesis. If an author's name be given, it should be that of him who first described the plant. Our nomenclature begins with Linnaeus, and hence all botanists prior to him are to be disregarded. Linnaeus, for instance, describes *Ornithogalum luteum*, but Salisbury discovered characters of sufficient importance in this plant to justify him in making a new genus, *Gagea*. Our plants should therefore be called *Gagea lutea* (*Ornithogalum*) Linn.

Secondly, the scattered literature. Botanists now-a-days write in German, French, English, Italian, &c., and in a large number of different periodicals, so that it becomes very difficult, or next to impossible, for a man to make himself thoroughly acquainted with the literature of the subject. Professor Koch proposes, therefore, to select a number of botanists from various countries to examine and collate the separate publications of their several countries. A general editor is to be appointed in a European town where there is a good library, and all extracts are to be sent to him at that place. The general editor is to arrange these extracts scientifically, and to publish them in the Latin language.

Thirdly, as to the importation of plants by nurserymen. No disadvantage would ensue if the horticulturist were to adopt a provisional name in the first instance, and then apply to a botanist for the correct name, which could then be published; but in adopting this plan, there are two difficulties to be encountered. Gardeners would seldom take the trouble to change the provisional for the scientific name; and they would not always know which botanists studied particular families, or would not venture to trouble them. This ought, therefore, to be the task of a Botanic-Horticultural Congress.

Fourthly, many botanists have already devoted themselves to particular families, and it is to be desired that others should do the same. Horticulturists might then apply to these botanists for information, &c. Professor Koch then points out several instances where he has succeeded in carrying out the proposed reforms.

Professor KICKX, Ghent: On the physiology of Cryptogsmic plants.

M. KRELAGH, Haarlem: On the names of garden varieties and their confused synonymy, with special reference to bulbous and tuberous rooted plants.

Mr. THOMAS LAXTON, Stamford: On the variations effected by crossing on the colour and character of the seeds of Peas.

The specimens exhibited were selected for the purpose of illustrating the variations produced by crossing, in the colour and character of the seed of Peas, in the second and succeeding generations.

The results of experiments in crossing the Pea tend to show that the colour of the immediate offspring seed or second generation, sometimes follows that of the female parent, is sometimes intermediate between that and the male parent, and sometimes distinct from both; and although at times it partakes of the colour of the male, it has not been ascertained by the experimenter ever to follow the exact colour of the male parent. In shape, the seed frequently has an intermediate character, but as often follows that of either parent. In the second generation, in a single pod, the result of a cross of Peas, different in shape and colour, the seeds therein are sometimes all intermediate, sometimes represent either or both parents in shape or colour, and sometimes both colours and characters with their intermediates appear. The results also appear to show that the third generation, or seed produced from the second generation, or immediate offspring of a cross, frequently varies from its parent in a limited manner—usually in one direction only, but that the fourth generation produces numerous and wider variations; the seed often reverting back partly to the colour and character of its ancestors of the first generation, partly partaking of the various intermediate colours and characters, and partly sporting distinctly from any of its ancestry. These sports appear to become fixed and permanent in the next and succeeding generations; and the tendency to revert and sport thenceforth seems to become checked if not determined.

The experiments also tend to show that the height of the plant is singularly influenced by crossing; a cross between two dwarf Peas

commonly producing some dwarf and some tall, but on the other hand, a cross between two tall Peas does not exhibit a tendency to diminution in height.

No perceptible difference appears to result from reversing the parents and applying the pollen of the female to the variety previously employed as the male flower.

Professor LECOQ, Clermont Ferrand:

1. On the cultivation of *Colchicum byzantinum*.

A description of the plant, and of the method of cultivating it, is here given. The author recommends it for use in greenhouses and living-rooms, its corms being concealed by *Lycopodium*.

2. On the migration of mountain plants.

The object of the author is to show that the mountains of Auvergne have received their Alpine plants by the agency of birds and of wind, and not by a gradual migration during a supposed glacial period, the existence of which he denies altogether.

This district, he says, was, at the tertiary period, a vast plateau, with a mean altitude of 8-900 feet. Volcanic eruptions then inundated it, altered its soil and climate, and raised it in some places 1000 metres. "Then," says he, "clouds began to settle on the heights and snow to accumulate, and innumerable streams flowed from its icy summits, and by their murmurs seemed to call to a foreign vegetation to come to enjoy these happy conditions. The hospitable appeal was heard." &c.

The boreal species, with which alone we are concerned, and a list of which, about 104 in number, he gives us, could not, he says, have arrived till after the volcanic elevation of the district, and they could only have come from the Alps, the Pyrenees, Lapland, or the mountains of Grenada. But as all these species are either Alpine or Pyrenean, with the one solitary exception of the *Arabis cebenensis*, we may assume that these two great chains were the homo from which they came as colonists to France.

The intermediate country is low and flat, and afforded them no resting place; Darwin's theory of their progress by means of a glacial period he rejects; and concludes that they must therefore have been transported thither through the air, and mainly by birds of passage, and violent storms of wind.

M. LAHAYE, Paris: On the preservation of fruits.

The author says it is impossible to preserve fruits out of their season if the trees which produce them are in bad health or condition.

M. MAS, Bourg: On the method to be followed in endeavouring to obtain new varieties of fruits.

Dr. MASTERS, London: Double flowers, &c.

Dr. DAVID MOORE and Mr. A. G. MOBE, Glasnevin: On the climate, flora, and crops of Ireland.

The authors remark upon the well-known humidity of the climate, and the singularly slight difference that there is between the summer and winter temperature; a difference that at Dublin is only 17½° Fahr., and on the west coast as small as 14°. Indeed, that of winter, they say, is as high as though the island lay 15° nearer the equator. Hence the peculiarity of the Irish flora, of which they give a list of the more interesting species, and an accompanying map to show their geographical distribution. The humidity of the climate and its low summer temperature they find to be unfavourable to the ripening of fruit and wheat, but such as to render Ireland the country of all Europe the best fitted for green crops and gentle-grazing.

Appended are some interesting returns sent in by gardeners in the counties of Cork, Kerry, Galway, Mayo, Sligo, and Fermanagh, in answers to queries as to their success with fruit trees, and half hardy shrubs and flowers. These returns agree in showing that the climate of the southern and western counties is ill adapted to the growth of fruit, but favourable to that of evergreens.

(To be continued.)

NOTES ON THE WAY TO THE HOLY SEPULCHRE.—No. 2.

It is a strange transition to pass from the rude Alexandrian vessel, shipwrecked in St. Paul's Bay at Melita, to the grand steamers of the Peninsular and Oriental Company, carrying out their living freight bent on business or pleasure. A greater transition still it is to turn from the low white coast which first greeted the Apostle's eyes to the harbour of Valetta, with its tremendous fortifications bristling with cannon, its wharves and quays, where representatives of every nation under heaven are congregated together, jostling each other in that weary struggle for "daily bread" that to the people of the nineteenth century seems to mean anything rather than the "food convenient for them."

Amongst this motley assemblage a few months ago was the tourist whose route I intend to follow in these notes, and whose collection of plants, together with a journal, has very

obligingly been placed at my disposal. Added to this there will be other material, true and lifelike, as every "note" should be that is struck on the sacred way that leads us to the Holy Sepulchre. Each flower we gather has an interest belonging to itself alone. We can cull them with no careless hand; for although they may be strewn around us in bounteous munificence, the thought will come that He who gives them all to us found an earthly grave at our "wicked hands," and that the only wreath we offered back to Him was the "crown of thorns" that encircled His bleeding brow on Calvary.

Following the route I have intimated, we may yet linger for a little while with the Apostle St. Paul as, sailing for Rome, he landed and remained three days at Syracuse in Sicily. After noting this visit, shall we be astonished to read in the ancient history of the island that "Christianity spread early into Sicily, and that a persecution of the Christians took place under Nero," the very Cæsar to whom St. Paul had appealed, and to whose "judgment seat" he was journeying when he was shipwrecked at Malta? Thus regarding Sicily it becomes like a faint reflection of the Holy Land; and as we coast its rocky shores and watch for the first glimpse of Mount Etna, which rises upwards of ten thousand feet above the sea level, our thoughts turn once and again to those bygone days, which have left their impress upon the earth as fixed and sure as is that of the "everlasting hills."

Sometimes at daybreak the old mountain will show itself forth in all its glory, occasionally puffing out a volume of smoke as a sort of credential of what is going on within. The entire group of Etna occupies about ninety miles in circumference, and the sides of the mountains are covered with forests of Oak, Beech, Maple, Birch, Fir, and magnificent Chestnut trees, varied by occasional streams of lava, which have run down even to the seaport of Catania, carrying devastation and misery along with them.

The Wheat in the province of Catania is very bad; and corn is brought from Egypt and sold at a cheaper rate than that which is of home growth, owing to the difficulty of land carriage in so mountainous a region, while Indian corn, together with barley and beans, is converted into bread.

High up, on the mountain near Zafarana, there are extensive vineyards, from which delicious wines are made, Bronte, or, as it is also called, Etna wine, being largely exported. The white wines of Marsala and Catania, with the muscat of Syracuse, have almost a world-wide name. Besides the vineyards on Etna there are orchards of Lemons and Oranges, which are both plentiful and fine, Sicily being famed for its essences of Lemon, Citron, Orange, Aniseed, Lavender, Rosemary, and Bergamot.

From such a land of flowers those collected during one short visit must necessarily form but a very small proportion; and yet, gathered as they were in spring, they speak as heralds speak of something still greater being at hand. The most noticeable of the spring flowers are the Cyclamens, which grow in large masses, their darkly veined leaves contrasting so beautifully with their delicate bloom. The Cyclamen repandum is found near Messina. There also grows the *Mathiola tricuspidata*, and there the *Erica vagans*, which is found in our own Cornish land. Another familiar friend, but grown considerably larger by Sicilian diet, is the *Trichonema bulbocodium*. This tiny Crocus-like plant grows plentifully by the seashore between Dawlish and Starcross in Devonshire, and also in Jersey; but the Sicilian specimen is brighter in colouring, and at least four times the size of the English plant. I should like to claim acquaintance with yet one other Sicilian flower—the *Phlomis fruticosa*, with its soft glaucous leaves and yellow whorl of blossoms, which I have found growing wild in Devonshire. But alas! I am bound to confess that, on mentioning my find to a botanist, I was met with "escaped from a garden," and with this dictum I had to be content.

Allied to the *Phlomis* is the *Teucrium fruticans*, which is commonly to be met with, as is also the *Viola tricolor?* which I have so often gathered in country walks both in England and Scotland. Of the wild *Geraniums*, *G. molle* is the only specimen I have from Sicily, while Dr. Deakin gives four—*dissectum*, *molle*, *Robertianum*, and *rotundifolium*, as growing on the Colosseum alone.

Specimens of *Psoralea bituminosa*, *Lathyrus ochrus*, *Centranthus calcitrapa*, *Passerina*, *Euphorbia dendroides*, and *Orchis undulatifolia*, together with a pretty *Senecio* and *Linaris*, were sent to me. There was but one solitary Fern—*Polypodium vulgare* (var. *acutum?*) which brought back to

my memory the plant I found on the Colosseum, where it grows for the most part high up and safe from the merciless grasp of Fern-collectors, who show no pity to bare ruins if only they can add to their collection.

Amongst the Sicilian plants, and having written upon it the word "introduced," was a lovely spray of *Bougainvillea spectabilis*, its purplish rose-coloured bracts answering for flowers, the real flower being very insignificant. I have lately seen a fine specimen of this beautiful plant in full bloom in a garden in Devonshire; and shortly afterwards I saw a spray which had arrived in a letter from India, having on it this notice, "The *Bougainvillea* grows very commonly here." In Madeira the plant grows profusely trailing up the houses, and its colouring is rich and vivid; but the same species introduced into the Cape de Verdes is still more vivid in colouring, showing plainly the intensifying power of the sun's rays when brought to bear on colours predisposed to receive them. It is not long since it was supposed almost an impossibility to flower the *Bougainvillea* in England. It is pleasant to know that this horticultural difficulty has passed away.

But I must return to the mountains and valleys of Sicily, so rich in natural productions, where the Olive tree gives its olive oil, the Carob its sustenance for cattle, the *Ornus* its manna; while the products of these trees, together with Rice, Pistachia nuts, Walnuts, dried Figs, Almonds, honey, wax, gum, soda, and cotton are exported in great quantities. On one of the Trapani Islands—Maretimo—wild Thyme (*Thymus fruticosus?*) grows in such quantities that it makes the district like one vast bee-hive, so many bees are attracted to and nourished upon it. The liquorice juice that is used for brewing in England is made at Palermo, while Messina is a great mart for a common kind of silk.

Sicily abounds in magnificent scenery—mountain, rock, and ocean appearing and disappearing in mingled grandeur and beauty; and to natural objects are added ruins of Greek and Roman architecture, amongst the most remarkable of which is the vast theatre erected near the town of Taormina, and said to have been capable of holding forty thousand people. The seats are partly formed by the hillside, and command the most glorious views, on the one side of the Straits of Messina and Italy, and on the other of Etna and the Mediterranean.

The drive from Catania to Taormina, inland by Zafarana, forms a beautiful introduction to the yet grander scenes that await the traveller as he winds up the steep hill to the theatre, and then onwards and upwards to the ancient fortification called La Mola, the ascent to which is precipitous in the extreme, catching first glimpses and then bolder revelations of glory. Beneath his feet is a robe of many-coloured flowers; lifting up his eyes they rest on mountains glittering with snow, while the vault of heaven is one impenetrable sea of blue. The road from Taormina to Messina is hewn out of the cliffs overhanging the seashore, and commands an ever-varied succession of sea views.

From this land of beauty and plenty we must sail away to a far different scene, to a dreary, monotonous old town of Egypt, where the narrow streets rejoice in alternate changes between mud and dust, where good water is scarce, and vegetation—as Englishmen count vegetation—a thing to dream of, but never to be realised. Yet what varied associations does the very name of Alexandria recall! What visions of regal splendour when it was the residence of the Ptolemies! What dreams of learning and scientific research during the collecting together of that vast library, which was said at one time to contain 700,000 unprinted volumes. It was great in splendour, for we read of it as being the rival of Rome; great in commerce, for it succeeded Tyre in commercial importance; great in learning, for its library and schools were renowned all over the world. We are not surprised to find that Christianity took an early and firm hold in Alexandria, for its great library contained many a copy of the Scriptures, and its schools many an eloquent "Apollos mighty in the Scriptures," and who, by the very persuasiveness of intellect "mightily convinced the Jews, and that publicly, showing by the Scriptures that Jesus was Christ." We find Alexandrians amongst those who disputed with Stephen, so that we may infer that Christianity was not blindly accepted at Alexandria, but rather that it was the deliberate choice of men famed throughout the world for their intellectual capacities. That the choice was not made without some resistance from old prejudices we find from the fact of the Alexandrians, when not able to resist St. Stephen's wisdom, having had recourse to the common eastern practice of aborning men to give lying witness against him.

Alexandria does not seem to possess many natural advantages. Its shores are bordered with reefs; its soil, for the most part, a mixture of sand and rock. The town has no fresh water, but there are huge cisterns filled partly by rain and partly by water from the Nile; during the present century more than two hundred of these tanks were still in use. There are Fig trees and Palms, and in the gardens there are Mandarin Oranges, while agriculturists are doing what they can to bring the land under cultivation. Some wild flowers grow by the seashore, amongst them the small lilac *Mathiola oxyeras* and the *Anchusa strigosa*, which, but for its hue of bright blue, would remind one of the *Daphne cneorum*. On the calcareous rocks by the shore at Rambla, about five miles from Alexandria, there grows a very small variety (?) of *Adiantum capillus-Veneris*; it is compact and neat-looking, and hardly appears to be of the same species as the common *A. capillus-Veneris*, which was gathered by a garden fountain in Alexandria on the same day. But the prettiest of all the wild flowers growing by that far-off shore is the *Dorycnium argenteum*, the leaf and petals being like silver hair, the blossom yellow. Besides these there are the *Ornithogalum* (exscapum?), the *Ononis natrix*, *Geranium molle*, and the *Bucus hypophyllum*. This last I had never before seen, and its tiny leaf growing out of the large leaf's heart and concealing the little flower beneath its sheltering fold, rendered it very interesting. There is yet one more wild flower to be mentioned, a strange-looking *Orobancha*, said by the Arabs to be very destructive to Bean crops.

I cannot leave Alexandria without a passing recognition of the two vast granite obelisks, which once formed the entrance to Cæsar's palace, but which are now known to us as "Cleopatra's Needles." One of these obelisks is still standing, and measures nearly 80 feet from the ground.—*FILIX-FEMINA*.

NEW BOOK.

Pinacæ: being a Handbook of the Firs and Pines. By SENILIS. London: Hatchard & Co.

Among the characteristics of old age we too often find a proneness to egotism, and it is not absent from the author of the volume before us; moreover, it appears in the worst of combinations, for it is egotism united to a proneness to depreciate other labourers in the same field. Thus "Senilis" ventures to publish this as his opinion: "The laudable attempts of most modern writers [on Firs and Pines] to remove obscurity have, in good sooth, only added to its shade." We need not ask him if he remembered Gordon's "Pinetum" when he wrote that sentence, for every page of "Pinacæ" shows that he was familiar with it; but we may observe, for he probably does not know, that there is a splendid work on Conifers now publishing by Messrs. Lawson.

We pass by all the "senility" manifest in the attempt to alter the classification and nomenclature, and the sneers at "theoretical botanists" and "literary pedants;" and we pause over the better, because the really useful, portion of the volume—we mean the information relative to the qualities of the timber produced by various species, their degrees of hardness, the soils they prefer, and such like practical knowledge. One extract will suffice to show this:—

"*ABIES DOUGLASHI* (Douglas's Columbian Fir).—This Fir is one of the most distinct, beautiful, and valuable ever introduced into Britain. It is thoroughly hardy, sound in constitution, of large dimensions, and very rapid in its growth; not particularly fastidious as to soil or situation, provided always the soil be in a sweet and healthy condition, and the subsoil cool and porous; for even now we have it growing, nay luxuriating, alike in the forests and parks of England, in the alluvial vales and humid clime of Hibernia, in the romantic glens and mountain dells of old Scotland, and in the debris of the slate rocks of Wales; and in its native habitats in the north-west it is equally as accommodating, for it is to be found on the highest peaks of the Rocky Mountains, a knarled bush about a yard high, while along the river's banks, and in the Columbian valleys, and at the mountain bases, it produces trunks of timber 200 feet in length and 10 feet in diameter at base. But much larger logs have been obtained from it when grown under very favourable conditions, for the tree from which the specimens of its wood were exhibited at our International Exhibition (1862), in the British Columbian Court, was over 300 feet in height; and, judging from its concentric ring-growth, its age was computed as approximating to a dozen-and-a-half score years. Amongst the specimens shown of its converted timber were a six-foot diameter of a horizontal section, as sound at its circumference as at its centre. The heavy planks, quartering, and flooring, were, indeed, admirable examples of valuable timber; and the split pales and shingles most clearly proved the fact,

that for ease in splitting, freedom from loss in the process, and loss of strength in proportion to the dimensions split, if for such a purpose it has equals, it has indeed but few superiors. In common parlance it may be said to rend like a ribbon; and this every one engaged in the growth of timber, and more particularly those who have to convert it, will admit is a most valuable quality in a good and generally useful wood.

"Its timber may truly be termed first-class, A1; being, as it is, fine-grained, elastic, heavy, strong, free from knots, easily wrought, and capable of receiving a high polish; not very resinous, yet very durable, not subject to warp or splinter; and its only defect is that in trees which may be felled ere they have become aged and thoroughly matured, or have stopped growing, as we phrase it, it will be found that about one-third of its outer or circumference wood is more white, porous, and tough, and consequently less durable; while about two-thirds of its diameter, the centre or spine wood, is reddish in colour and most excellent in quality. Our best recommendation of this Fir is to state the fact that we are now cultivating and planting it in thousands annually, as a general forest tree; confident it will never disappoint us, although the opinion we have formed of it is indeed a high one. As an ornamental tree it only requires to be seen to be appreciated, and much more extensively planted, both for use and beauty, whether for profit or pleasure."

PORTRAITS OF PLANTS, FLOWERS, AND FRUITS.

EULOPHIA VIRENS (Greenish Eulophia).—*Nat. ord.*, Orchidacæe. *Linn.*, Gynandria Monandria. Native of the Neilgherry Hills and Ceylon. Flowers greenish yellow with slight purplish streaks, not at all showy.—(*Bot. Mag.*, t. 5579.)

SCILLA COOPERI (Cooper's Squill).—*Nat. ord.*, Liliacæe. *Linn.*, Hexandria Monogynia. Native of the Cape of Good Hope. Flowers purple.—(*Ibid.*, t. 5580.)

CUPRESSUS LAWSONIANA (Lawson's Cypress).—*Nat. ord.*, Conifere. *Linn.*, Monocia Monandria. Native of valleys in the mountains of North California.—(*Ibid.*, t. 5581.)

WARSEWIZELLA VELATA (Veiled Warszewizella).—*Nat. ord.*, Orchidacæe. *Linn.*, Gynandria Monandria. Requires only a moderately warm house and shading. Introduced by Messrs. Low & Co., Clapton Nurseries. Native of New Grenada. Flowers yellowish white, lip edged with lilac; fragrant.—(*Ibid.*, t. 5582.)

BEGONIA GERANIODES (Geranium-leaved Begonia).—*Nat. ord.*, Begoniacæe. *Linn.*, Monocia Polyandria. Imported from Port Natal by Messrs. Backhouse, York. Small species. Flowers white.—(*Ibid.*, t. 5583.)

MYRSIPHYLLUM ASPARAGOIDES (Asparagus-leaved Myrsiphyllum).—*Nat. ord.*, Liliacæe. *Linn.*, Hexandria Monogynia. Introduced by the Duchess of Beaufort in 1702. Native of Cape of Good Hope. Flowers pearly white, tinged outside with green.—(*Ibid.*, t. 5584.)

TROPEOLUMS.—*Beauty*, sulphur-yellow, with crimson spot. *Attraction*, orange, with crimson spot. Exhibited by Mr. Williams, Fortis Green Nursery.—(*Floral Mag.*, pl. 293.)

OPONTOGLOSSUM CERVANTESII.—Native of Mexico. Flowers pinkish white, marked with lines in broken circles.—(*Ibid.*, pl. 294.)

CAMELLIA.—*Nonpareil*, pale rose colour, regularly striped with dark rose. Brought out by Mr. W. Bull, Chelsea.—(*Ibid.*, pl. 295.)

KERRIA JAPONICA VARIEGATA.—Flowers single, yellow; leaves with broad white margin. Introduced by Mr. C. Turner, Slough.—(*Ibid.*, pl. 296.)

AURICULAS.—*Gem*, shaded purple with yellow paste. *King of the Crimson*, shaded crimson with yellow paste. Introduced by Mr. C. Turner, Slough.—(*Florist and Pomologist*, v., 113.)

A PEEP AT THE WOODS IN ODD PLACES.—No. 6.

CUBA.

It was on a beautiful sunny day about noon that the passengers on board of a large screw-steamer sighted the coast of the lovely island of Cuba. The vessel was one of a line trading between Liverpool, Havana, and New Orleans. The passengers were, as is generally the case, of various nations and various interests, comprising British, French, Germans, Spaniards, Mexicans, and Americans (North and South), but chiefly of Southern tendency, or, as it would now jokingly be said, of Southern persuasion. I must not, however, digress, for I am keeping all the passengers standing still whilst I explain their nationalities.

As I have mentioned, Cuba was sighted, but we had what sailors term a dead head-wind; and as we were a long way from the harbour of Havanna, it was nightfall before we passed the Moro Castle at the entrance, and, therefore, in accordance with the rules of the port, we were compelled to drop anchor for the night at the entrance abreast of the hulk—that is, a worn-out old tub, without masts, which does duty as a guard ship. Here we remained for the best of all reasons—namely, because the authorities would not allow us to proceed before morning; but we were not without amusement, as we had several good singers on board, and they made a very merry night of it. Most of the passengers were leaving us at the Havanna, and they seemed determined to take poor General Wolfe's advice, and sing with him, as he did on the night before the battle of Quebec—

"Why stands the glass around?
For shame! Ye take no care, my boys.
Why stands the glass around?
Let wine and mirth abound."

Or, to act in accordance with the words of that exquisitely plaintive song, "The Deserter's Meditation"—

"If sadly thinking, and spirits sinking,
Could more than drinking my grief forego?
Then for that reason, and for a season,
Let us be merry before we go."

The night was brilliant, warm, and pleasant; and as the melodious tones of several rich and powerful voices, sometimes in unison, at others joining in parts, were borne away before a gentle breeze, they were thrown back, mellowed and reiterated, from the high rocks and headlands around; so that, what between the gentle ripple of the water of the bay, the striking beauty of the shores of which were dimly perceptible by the soft doubtful light of a young moon, aided in her endeavours to illuminate by thousands of stars—all this, taken in conjunction with a thorough harmony of feeling amongst those present, and a delicious balmy flower-scented air, made the scene one of those of which the remembrance cannot be forgotten in a lifetime.

The night being gone and the morning came, our forced delay was ended; so we hoisted anchor, and proceeded on our way to our wharf, it being somewhere about a mile farther up the bay, which I may here notice is one of the greatest beauty. Having at length moored or made fast alongside the jetty, I, in company with three of the gentlemen passengers, started to walk along the shore, or rather side of the hill, on the opposite side of the harbour to that on which the city stands, being that on which our wharf was situated.

The heat was intense, yet still I enjoyed the short ramble of about a mile very greatly, since, though so late in the year, some of the wild flowers were most beautiful. One attracted my attention in particular, it was a small flower of the *Convolvulus* tribe, pure white on the external part of the corolla, and most delicately tinted with pink internally, deepening in shade towards the centre, the flower itself at once catching the eye, nestling, as it did in clusters, amongst the deep, dark, shining green leaves of its elegant intertwining tendrils; the plant growing in great luxuriance and in large patches, but so closely were the sprays interwoven, that it was difficult to pluck one of any length without damaging it. This plant, or one of the same genus, and very similar to it, is known in the southern portion of the United States of America by the pretty soubriquet of "Morning Glory," on account of its opening and displaying its full beauty in the morning, whilst it closes in the afternoon and evening. Another flower which attracted my notice was a most exquisite yellow *Cistus*, the beauty of the foliage of which could only be equalled by the brilliancy of its petals, which, from their colour, forcibly recalled to my mind a tale I have often heard of an old servant of my grandmother who was promised a new gown, and when asked what colour she would prefer, remarked that she did not like showy colours, but she should like a bit of good plain yellow; and if the hue of her dress at all corresponded with that of this lovely flower, although I am afraid I could not agree with her in not considering it showy, still I must acknowledge that I should very greatly have admired its hue, especially had it been toned down in brilliancy, as it was in this plant, by the delicate tinge of pale green leaves.

The next flower that I noticed was a bright scarlet Broom; then a species of *Heliotrope*, which, though very similar in appearance, was not that sweet-scented flower so justly prized by us, and which children delight to call "Cherry-pie;" next was a pure white flower, one of the *Umbelliferae*, and, of course, from its position on a dry hillside, an aromatic, but not poison-

ous. All these were growing in the rankest luxuriance, interspersed with Cacti, many of them of very large size, and bearing most formidable spines of great length and acute sharpness, as one of my companions found to his sorrow; for in walking up the hill his foot slipped, and in saving himself from falling he struck his arm rather violently against a large plant of this description, the thorns of which, to teach him better manners and a proper amount of respect to the family of the Cacti, ran through his clothing, and deeply into his arm. In a few minutes he complained of great pain, and on baring his arm he showed me half a dozen pretty deep punctures all bleeding tolerably freely, and likewise a portion of a spine broken off into the flesh, which, having extracted for him, I found of the comfortable length of more than an inch. The wounded part swelled a good deal, but soon recovered under proper treatment.

The Aloe again here shows itself, and of all sizes from the pygmy with leaves scarcely longer than one's finger to the giant, each leaf of which will measure from 8 to 10 feet or more, and armed at the apex with an awful spike, and having its edges serrated somewhat after the manner of a shark's teeth.

Now, imagine to yourself all these beautiful plants, with here and there a few Cocoa-nut Palma singly or in clumps towering above all the rest, and spreading abroad their long, feathery, elegantly drooping leaves, growing on a rapidly rising hillside, with a bright semi-tropical sun pouring its clear rays down upon this really lovely spot, where not a breath of air was to be felt, and even Zephyr seemed asleep, and some notion may be formed of the amount of comfort we experienced as, just having arrived from the cool breezes of the sea, we slowly mounted the hillside, for road it cannot be called, that leads to Castle Blanco.

Castle Blanco is a small village or hamlet chiefly inhabited by poor creoles and Chinese, with a large mixture of negroes, who are employed in coaling the steamers which lie at the adjacent wharves. The appearance of this place is not prepossessing, for it presents to view all the mixture of squalor and miserable pretension common to all the Spanish and Portuguese colonies I have ever visited or read of—viz., gross superstition and rank blasphemy; dirt and discomfort, verandahs and mud floors, shaky doors and trembling wooden steps; wretched, untidy, half-breed women; filthy, unkempt, nearly, often entirely, nude children; and decidedly last, though not least, lazy, scowling, truculent men, whose whole life seems made up of Water Melons, cigarritas, low gambling, and loitering; gossip and scandal being, apparently, too great exertion for them.

Another noticeable species of animal to be found here I must not pass over without some remark—I refer to dogs, for the amount of canine creation found here is perfectly marvellous; but do not imagine that the dog aristocracy demean themselves by appearing here, for they would be out of place, but mongrels of every description have their representatives in this dog assembly, from the mongrel Cuban bloodhound, mangy and covered with scars, to the mongrel little white curly Havanna poodle, the true breed of which will often sell for as much as five ounces—that is, about £18 sterling.

Having passed through this delectable abode of dogs and of men, we at length reached the quay, and at once looked out for a boat to ferry us over the harbour, and after some bargaining we agreed with a sturdy little creole Spaniard to land us on the Havanna side for half a dollar, and accordingly, entering a queer small tub of a boat, with an awning over the after-part, the shade of which was very grateful, although it was then December, we were soon landed at the custom-house quay; and after just arriving from New Orleans, and calling to mind the magnificent quays of Liverpool, it certainly did appear a curiously insignificant affair, although guarded by a most splendid array of uniformed custom-house officers. Crossing this quay we passed through a short street, and came at once into the grand square, and a real beautifully square it is; on one side occupied by the palace of the Captain-General or Viceroy of Cuba, on another by shops, and on two others by fine buildings with cool massive piazzas, and built in the old Moorish style. In the centre of this square stands a fine statue on a pedestal, surrounded by iron railings, and a large space around is beautifully paved with squares of black and white marble, and here in the evening a military band plays for some time before the Captain's palace by lamplight for the amusement of the people; and very pleasant it is to hear this band, and sit (for even here chairs can be hired by those who wish them at the rate of 2½d. per evening), in the cool after the heat of the day, amidst the

delicious perfume of the plants and flowers which are grown and flourish with true semi-tropical luxuriance around the paved space occupied by the band and the pleasure-seekers. Here by day may be seen many flowers of lovely form and delicious scent little, if at all, known to the generality of Europeans, together with Aloes and Palms of several kinds, and the elegant Plantain and Banana, the fruit of which seems to melt in one's mouth rather than be vulgarly bitten and eaten; lastly, giving forth its delicious fragrance is the sweet juicy Orange common to the island.—A SUREON.

ANNIVERSARY DINNER OF THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—This takes place at the London Tavern, Bishopsgate Street, on the 27th inst., and Sir Wentworth Dilke, Bart., will preside. The Society is now relieving fifty-seven old gardeners, and would be able to assist as many more equally deserving if its funds permitted. We hope our readers will strengthen the subscription list to the utmost of their power. Mr. Cutler, the Secretary, will gladly hear from them at 14, Tavistock Row, Covent Garden.

WORK FOR THE WEEK.

KITCHEN GARDEN.

EMBRACE the present favourable opportunity of the ground being moist, for thinning Beet, Carrots, Onions, Parsnips, and succession crops of Turnips; and as it is presumed that the majority of these have been sown in drills, let the hoe be run through between the drills, not merely skimming the surface of the soil, but moving it an inch or two in depth; this, while it roots out the weeds, at the same time checks rapid evaporation, and pulverises the soil. Make a small sowing of *Red Beet* and *Horn Carrot*. The former when sown early on rich soil becomes too large and coarse, and does not retain its colour in boiling, nor does it look so well in salads as that which is smaller. *Dwarf Kidney Beans*, the south border, where the early Peas have grown, may have a light dressing of manure, and should be well broken with the spade while being dug ready to receive the late crop, for which draw drills 2 feet apart, and before planting water the drills, by passing the spout of the water-pot along each. Give recently-planted *Celery* copious waterings once or twice a-week. The method frequently pursued of giving plants in the open ground a small drop of water every evening or morning cannot be too much deprecated; such sprinklings cake the ground, and lower the temperature of the soil, without affording any corresponding benefit to the plants. Pay constant attention to the watering and shading of all advancing crops recently pricked out. Get in succession sowings of Lettuces, Radishes, and salad generally. *Scarlet Runners*, stake after drawing a little earth to them with the hoe; where it is intended to keep them dwarf, and not to stake them, let the leaders be pinched off. By constant attention to this stopping of the leaders as they advance above three or four joints in length, they will be induced to bear well; the latter mode of culture should only be resorted to where stakes cannot easily be procured. Attend to Tomatoes, sweet herbs, Cucumbers on ridges, Strawberries that have been turned out of pots, and Vegetable Marrows, and see that they have liberal supplies of water alternately with liquid manure.

FRUIT GARDEN.

Still continue active operations against aphides and other pests to fruit trees, or their ravages will spoil your best hopes of a crop. The shoots of Cherry trees infested with the black fly should be dipped in tobacco water immediately they are detected, to prevent the shoots from curling, which would stop their growth. Either pick with the hand, or apply a wash of lime or clear foot water to Gooseberries and Currants infested with the caterpillar, which increases so fast that a constant watch must be kept up for some time. Pinch back all the shoots of the latter not wanted for wood. The fruit of Gooseberries, &c., like those of more value, will be considerably improved by summer-stopping of the young wood, a fact well known to those who have paid attention to this mode of pruning. Pinch the points out of the young shoots of Fig trees when they have made five or six joints; by this means you will secure more stocky and fruitful wood for next crop than if they were allowed to grow on. Where Strawberries are set, a few of the finest may have the fruit thinned, and unless the ground is rich it should have a good soaking with liquid manure. Those that are not for dessert will not repay the

trouble of thinning, as small and middle-sized berries are preferred by most housekeepers for preserving.

FLOWER GARDEN.

The newly-planted things will require constant watching, as under the best management failures will sometimes occur; these should instantly be made good, and the tying and staking of everything requiring support on no account delayed. Where an immediate display of flowers is not wanted, the buds may be pinched off for a week or two, to encourage the plants to cover the ground. Remove Anemones, Wallflowers, and other spring plants as they go out of bloom, to make room for autumn-flowering ones. Put in cuttings of double Wallflowers, Pansies, Pinks, &c., for next spring's blooming. A shady piece of ground on the north side of a wall or hedge should be appropriated for the above. In addition, a stock of the more showy herbaceous plants should be always kept on hand, as well as the spare bedding-out plants, so that in case of failures or alterations, a supply may always be ready for immediate planting. Creepers against walls or trellises should be constantly gone over to tie or nail them in. Standard and pillar Roses should likewise be looked over, to see that they are properly secured to their stakes. Take every means to eradicate the broad-leaved plants and coarse-growing Grasses from the lawns, which they much disfigure, and keep them closely cut with the scythe or machine. The principal operations are now completed for the summer months, and it is presumed that all beds are filled with plants for summer decoration. Next to planting succeed the tying and pegging of the plants, and a copious supply of water is of the utmost importance. We advise thorough soakings in dull days, or late in the evening; at such times exhalation is at its minimum, and the moisture is not given off as soon as supplied.

GREENHOUSE AND CONSERVATORY.

While out-of-door flowers may soon be expected in abundance, nothing should be brought into the conservatory but what is well grown and bloomed, nor should any plants be allowed to remain that are at all shabby. It is not desirable, however, to crowd the house with flowering plants; the aim should rather be to have a moderate number of handsome specimens effectively arranged, which will yield more solid interest and pleasure than a greater amount of floral display from plants of no individual merit. A thin arrangement will also be advisable, on account of the permanent occupants of the beds or borders, which at this season should be allowed plenty of space, in order to secure strong and well-ripened wood, without which they need not be expected to bloom freely. Give clear weak manure water to young-growing specimens, and repot any that are intended to have another shift this season, so as to have the pots well filled with roots before winter. Maintain a moist growing atmosphere, and syringe vigorously any plant at all infested with red spider. The main stock of Azaleas will now be getting out of bloom, and after the gorgeous display which we have seen at the International Horticultural Exhibition this season, we think they will be likely to become very general favourites. The first thing to be done with them now will be to remove their flowers and seed-pods as quickly as possible, and to place them in a house or pit where they can be properly shaded, and where a moist atmosphere can be maintained at all times. Pot such plants as require it, using plenty of sand and a little three-year-old cowdung with the peat; but as they will thrive for a long time in small pots, do not overpot them. Keep up a brisk growing temperature during the day, and syringe copiously, and shut up closely every afternoon just before the sun leaves the pit or house; air to be admitted about nine o'clock. Prune any straggling shoots, and endeavour to form nice, compact plants.

STOVE.

If among the plants there are any sickly or badly-rooted specimens, they should be frequently examined for red spider, otherwise they will become a nursery for this pest, and from them it will soon spread to adjoining plants. See that young growing stock is not allowed to suffer for want of pot room. Attend carefully to watering, giving manure water to all plants in free growth that require it. Continue to shift all such Orchids as require it. Now is a good time to pot *Peristerias*, *Phajus*, and *Cymbidiums*, that are starting into growth. The best time for shifting *Saccolabiums*, *Vandas*, *Camarotia*, *Aërides*, and all similar-habited plants, is as soon as they have done blooming. In giving them new baskets, afford them plenty of room, and good open materials, as recommended in former calendars. Now that fires are discontinued here, water must

be used cautiously, but watering must be thoroughly attended to, and all plants swelling off their bulbs must be watered at least two or three times overhead, in order to make the pseudo-bulbs as large as possible. Shade with care, and give air freely, leaving a little on all night, this will in a great measure prevent the blossoms from spotting through condensation.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

Just the wet, showery weather to suit all established plants, and give them a good start. Pricked out Celery, and prepared trenches, or rather beds, for strong plants, to be turned out as soon as we can find time. Just now we could employ for some time double our labour power, and then hardly have all straight. We have long held the belief that no man can be happy that is not fully employed either as respects head, or hands, or feet, or rather all united. However much there may be to be done, a man of energy will apply himself to the work and get it done, so long as he sees that his activity and hard work will be available for securing the desired object; but let the work be so extensive that the idea of accomplishing it in a definite time becomes associated with the impossible, and then, instead of a spur to activity, it insensibly acts as a damper to exertion. We say insensibly, for the workman may work faithfully without a spice even of eye-service, and yet the keen observer will see a vast difference in the results. Employers in general, and the proprietors of gardens in particular, are, as classes, not yet sufficiently impressed with the difference as respects the quality and the quantity of labour that a workman will perform when influenced merely by a sense of duty, as contrasted with a spirit of enthusiasm and a desire to please those whom he heartily respects. On this principle alone some explanation may be easily given of the seeming anomaly, irrespective of the peculiar characteristics of the different superintendents. Why, in two gardens not far from each other the workmen in one move about as if their feet spurned the ground, and in the other as if the soles of their shoes were covered with thick heavy plates of lead. We have often noticed that this latter peculiarity is most observable in large, unwieldy places, where the limited labour power strives vainly to master the work, and hence a lethargic apathy insensibly creeps over the workman. Though a man should be the master of circumstances, there can be no doubt that circumstances do greatly mould conduct and influence character. However much we rejoice, therefore, in hearing of the enlarging and the high keeping of large gardens and pleasure grounds, there can be no question that in many large places great sources of annoyance and depression to all concerned would be removed by greatly lessening their extent, so that what was professedly kept should be kept well.

On a row of Dwarf Kidney Beans in pots in the orchard-house, full of bloom and setting the pods freely, detected a trace of red spider, and had them removed at once, and turned them out of their pots into an earth pit, to be covered with old sashes in the meantime, the space in the earth pit being clear by the removal of bedding plants. But for that we would have given them a Celery trench and what protection we could afford in cold weather; but now if the weather is mild they will need little more than watering and syringing, and they will yield a plentiful supply until those sown in the open ground come in. Part of the same sowing, transferred a fortnight ago to a pit where there is a little heat, is bearing heavily. For heavy cropping and coming in at once we know nothing better than the Dwarf China, often called Robin's Egg, but it does not bear so continuously as some others. It is therefore the best, where the crop is to be taken, and then the plants to be cleared away when the first rich gatherings are over. If cut back and encouraged it will bear continuously enough; but for early crops we prefer successions, as likely to be more clean and free from insects.

The moving of these Beans is just an example of the great difference in labour power that is wanted in two places of similar extent, where little moving is needed in one place, and a great deal of moving is required in the other place, to make the very most of the space under glass, and to get as many early subsidiary crops as possible, whilst the main crop in each house receives something like justice. These are distinctive matters which some people are apt to forget when the months of June and July bring a plentiful supply of out-door produce. A gentleman told us last year that he could not make out why

his garden labourers should be so much more numerous, and yet work hard, and after all the useful parts of his garden seemed nothing superior in summer to that of his neighbour who did with one-third less labour, and yet the gardens were very much of the same extent. Nothing could have been more easily explained. His neighbour had but few bedding plants, and for these there was a little pit-house appropriated. He rarely tasted Kidney Beans until July, or new Potatoes until June, and was quite satisfied if he obtained a dish of Strawberries about the middle of the last-mentioned month. On the other hand, the gentleman who wanted his doubts solved had no place for bedding plants, but turned out many thousands, though in June no one could have told where they came from. He had been enjoying Kidney Beans since February, Potatoes since March, Strawberries since the 1st of March, and everything else in a similar proportion; and if all this was accomplished in limited space, the very moving, the taking away, and the fresh replacing, with the time required for preparing, watering, &c., would have made it quite clear to our comprehension that in his place the workmen would have a harder time of it as respects labour than those in his neighbour's employ.

The Broccoli-quarters, as well as the latest of the Cabbaging Scotch Kale being now about over, dug up the strong stems and laid them down, and to save labour will trench them into the ground along with lots of short grass from the lawn, and will follow with Peas at wide intervals, with Turnips, Cauliflowers, &c., between the spaces left. Where such crops of Broccoli stumps are very heavy, this is as quick a way of disposing of them as any, whilst they tend to keep heavy land somewhat light and drained. If a little dried before dug down we have rarely found that the stumps thus buried were made use of by the gardener's enemies. Where time would permit, we like as well to rot these stumps mixed with short grass and covered with waste earth to keep in the virtues that would otherwise pollute the air and be wasted. We have great faith in the virtues of short-grass mowings if only kept far enough from the roots of growing plants until it has become mild and sweet in its nature. As soon as the weather clears up we shall run a fork slightly along the rows of Peas and Beans to let the air in and to keep the moisture from being evaporated.

FRUIT GARDEN.

Strawberries.—The thunder showers came in good time to wash in the house sewage and thoroughly to moisten the ground, which, with the subdual sun for a few days and bright sun afterwards, will be the best conditions for insuring a good well-swelled crop. When dry enough will spread litter, &c., under the fruitstalks to keep them clean, as referred to last week.

Orchard-house.—Rain and cloudy too, yet much watering was needed for the trees in pots; we will have them mulched, as stated last week, without delay. Whether from the Kidney Beans or not, a few Peach leaves gave traces of the red spider. It was, therefore, of no use waiting for some specific, but we resorted at once to one of our old favourites for keeping the little enemy at bay. Having some softsoap we boiled about 2 lbs. of it in two gallons or six quarts of water, boiling it until it became clear—that is, about ten minutes, allowed it to settle a little, and then poured it into a thirty-gallon barrel of water, at about 100° to 110° in temperature, and set an active man to thoroughly syringe the trees, especially at the back of the leaves. Next day we did not detect one alive on the leaves affected; but we have no doubt some will be hatched from eggs in a few days, and, therefore, another application of that or something else will probably be necessary. Applied as above, though when administered the water was whitish and frothy, you would have found no traces that the trees had been syringed with anything but clear water next day. The effect of water applied as above is chiefly owing to the slight stickiness of the softsoap water. We have cleared trees of insects by applying weak glue, or rather jelly-glue water in the same way. Now, for making the red spider uncomfortable, or, as in our case, killing all where the water rested, two things must be kept in mind—first, to make the mixture weaker rather than stronger than the above; and secondly, to choose, if possible, a dull day or evening in which to apply it. Gishurst is useful for a similar purpose, but that, too, is best boiled, and then allowed to settle, and the clear matter only poured into the tub of water.

Vines, Peaches, Figs, Melons, &c., much the same as in previous weeks. In dull days kept thinning Grapes in the late-

house. Very few plants are left in the vineries now, with the exception of fine-leaved Begonias, Gesneras, Gloxinias, &c., as the shade is too dense for anything else doing much good. Some Ferns will have the best places ere long as under-attractions. We care less about having plants as under-furnishing beneath the Vines until the crop begins to ripen, and then we wish all plants out, so as to have no necessity to water anything. If this wet weather continue, will take the opportunity to give all the inside of orchard-houses, and other houses where the roots are in the soil, a good watering with drainings from the farmyard, because such can be obtained in some quantity, and there will be more time for applying it when we can do little out of doors.

ORNAMENTAL DEPARTMENT.

Proceeded with planting-out a good many bedding plants. The rains stopped us on Wednesday, but they did great good to all that were fresh planted, and everything that was growing, causing even the stunted grass to shoot with fresh vigour. In sandy soils the planting need not have been interrupted, but in stiff soils it is a waste of time and labour to do anything on the ground when it is wet. When parched it will scarcely ever become kindly all the season through. Whenever the soil is too damp not to part freely from the hand, the trowel, or the dibber, we consider it wisest, however great the necessity of doing the work quickly, to wait for a more suitable time. Even after the heavy rains of Monday and Tuesday, the bright sun between the showers soon made the surface of the ground nice and mellow, and planting could be proceeded with to great advantage, more especially when a board was used to save the edgings, and another smaller board for setting the feet on when it was necessary to step on the bed. Even then our planting was confined chiefly to beds which could be reached across by merely leaving one foot on the board on the bed.

Had the month of May not been past we should have deferred even such planting, as half of a bright day would make the surface soil mellow, and we have often proved how important such a state of the ground is at planting to the future welfare of the plants during the season.

In such drizzling days, too wet for planting and not wet enough to stay in-doors, though there was also plenty to do there, a good deal done in mowing, weeding, *clipping the sides of walks*, which we always prefer to do when the weather is rather damp, as the clippings are so much more easily picked up by the hand and basket—the quickest and best way in general of doing it. It no doubt may look nice and picturesque to see a tall young man draw a broom along the sides of the walk after clipping, too tall to bend to dislodge even a good-sized weed, and very systematically draw all the clippings into so many pretty little heaps, which either he himself or some one else must follow after to clear all away, and clean up the bottom of each heap. Now, whether one or two shall manage this work, we make it a point to insist, in almost all cases, that no heap shall ever be made, but all shall go in the basket and barrow at once, and thus we avoid the scraping and peddling over the bottoms of heaps. Had we our way we would never send men to this work at all, but entrust it to active boys, as in general with less pay they will do more of this kind of work, and do it well, too, when they are induced to take a pride in it; and it must be easier for a stout, short boy, even from the little space he has to go through in stooping. We have had boys that would clip in first-rate style and straight; and as for clearing up the clippings, though giving a word of encouragement, it would not have been quite safe to let the men know how much pleased we were with such work. It is such boys as these that may be depended on for becoming first-rate workmen, that can turn their hand to anything; and this is what is expected from many gardeners now.

The present is a good time for inserting in a shady place in sandy soil, with or without hand-lights, cuttings of Wallflower, single and double, Evergreen Candytufts, Alyssum saxatile, and others, Cheiranthus alpinus and Marshallii, and many other spring-blooming things. Many of the old kinds of the double Wallflower are very pretty, and chiefly because they branch so nicely. The great drawback of many of the German Wallflowers that come double from seed is, that too often the plant throws up merely one beautiful flower-stem. We like our old branching single kinds better. As soon as we can we will prick out lots of seedling Wallflowers in a border, to be ready to be transferred to where they may bloom in autumn. Pansies, or Heartsease, may now also be struck in a shady place for early autumn blooming. Firm side shoots will strike best and make the best plants; and it may be a delusion, but we

have generally imagined that, such cuttings bloom more freely than plants made by dividing the old plant into so many pieces. Pinks and Carnations will want watching for slugs, and early-struck Pinks for forcing had better be potted, and as soon as they will bear the full sun be plunged in an open space that the buds may be ripened early. Several kinds of Mule Pinks force nicely, and now is a good time for putting cuttings in sandy soil under a hand light. Deutzias, Weigelas, Prunus, &c., may now all be struck and grown on for winter and spring decoration.

In wet hours when the men could do no good out of doors, had the flowers of *Azaleas*, partly or wholly gone, carefully removed with scissors, or by using a sharp narrow knife, and bringing the faded flower and stalk between the knife and thumb. From such work we have frequently had our thumb as well scored with the knife as to become quite tender, the slight cuts resembling the finest lacework. This must not be done in the case of plants particularly poisonous, or the effects would be serious. Now, after we have thus cleaned such plants, what are we little people to do with them, so as to bloom them moderately early, and where one house is mostly all that can be allowed for showing them off, and growing them too? We understand all about how Messrs. Turner and Veitch manage such splendid specimens as were shown at the Exhibition at Kensington, and which divided the honours with the *Roses* and the *Orchids*, and the fine-foliaged plants. As soon as the plants were out of bloom with them, they would be cleared of all faded flowers, be well syringed, be kept for a week or ten days in as low a temperature as the plants bloomed in, and then they would be removed to a house where a high temperature, and a close, moist atmosphere could be given to them, with every attention in watering, shading, syringing to encourage growth, with more air and light to set the buds, and then plenty of air and light to keep the plants all right until they were wanted to be gently excited again, to show their wondrous beauty. Some friends will correct this if we are wrong. Of course, in a regular *Azalea*-house, or one divided into two or three divisions, each division might be set apart to treat plants distinctively, so as to have so many successions. Gentlemen should take all these things into consideration when in their *multum-in-parvos*, and one or two places for everything—fruit, flowers, and early vegetables—the same wondrous results are not attained.

Many of us could do a good deal of what is done in regular *Azalea*-houses, by bringing the plants, when rested after blooming, into our forcing-houses, such as beneath the shade of Vines. We can recollect that once, though we detected no thrips on the *Azaleas*, it must have been there, and we not knowing it, for the presence of a few nice *Azaleas* in the vinery incurred three years less or more thrips on the Vines, and ever since then we have felt shy of introducing *Azaleas* into vineries, either to make their wood, or to force them into bloom. As a sort of compromise, we have generally placed them together when done flowering in the conservatory, and kept them as close as we could consistently with a due regard to other things when making their wood; but at that time they possessed nothing striking in themselves, and it would have been better every way to have had their place supplied with something more showy, and the *Azaleas* placed where their interests would have been the chief consideration. At this season of the year a cool glass house would answer admirably for such a purpose, as sun heat in general would give all the heat required, the regulation of air and moisture being the chief points to be attended to.

To have plants in bloom in winter and early spring, however, the great point is to have them early excited into growth, and then they will next to come early of their own accord, or with but little forcing. Whilst granting to the full the grand results accomplished by the Exhibition at Kensington, it ought not to be concealed that the proprietors of small gardens can only hope to equal such wondrous results when they grow no more than what they have ample room to do full justice to. Perhaps it would not be out of place to state here our profound conviction, with respect to which we have no fear of being contradicted, that to make the most of our ornamental plants, instead of, as now in many private gardens, being under the necessity of keeping them on the move from place to place as best we can to suit their wants, and often standing them out of doors to their injury, these plants should have abodes of their own, and then *Azalea*-houses, and *Camellia*-houses, and *Heath*-houses, and *Rhododendron*-houses for the tenderest, &c., will be as common as *Peach*-houses, and vineries, and *Pine* *Apple*-houses, &c.—R. F.

COVENT GARDEN MARKET.—JUNE 9.

We have an abundant supply of out-door produce, and a fair demand for most descriptions of it. A few Plums and Apricots are included in our foreign imports, with Strawberries, Cherries, &c. New Potatoes arrive in rather large quantities from the West of England and the Channel Islands, the best Ashleaf Kidneys realising from 18s. to 25s. per cwt.; Round from 12s. to 20s. per cwt. In old Potatoes the trade is very heavy.

VEGETABLES.		s. d.		s. d.	
Artichokes	each	0	3	to	0
Asparagus	bundle	3	0	6	0
Beans, Broad	bushel	0	0	0	0
Kidney	100	1	0	2	0
Beet, Red	doz.	2	0	3	0
Broccoli	bundle	1	0	1	6
Brus. Sprouts	½ sieve	0	0	0	0
Cabbage	doz.	1	0	2	0
Capiscums	100	0	0	0	0
Carrots	bunch	0	4	0	8
Cauliflower	doz.	2	0	6	0
Celery	bundle	2	0	3	0
Cucumbers	each	0	4	1	0
pickling	doz.	0	0	0	0
Endive	doz.	2	0	0	0
Fennel	bunch	0	3	0	0
Garlic	lb.	1	0	0	0
Herbs	bunch	0	3	0	0
Horseradish	bundle	2	6	4	0
Leeks	bunch	0	8	to	0
Lettuce	per doz.	1	0	1	6
Mushrooms	pot(12)	2	0	3	0
Must& Cress, punnet		0	2	0	0
Onions	bushel	6	0	8	0
Parsley	½ sieve	2	0	0	0
Parsnips	doz.	0	9	1	6
Peas	per quart	2	0	3	0
Potatoes	bushel	3	6	4	0
Kidney	do.	3	0	4	0
Radishes	doz. hands	0	6	1	0
Rhubarb	bundle	0	4	0	8
Savoys	doz.	0	0	0	0
Sea-kale	basket	0	0	0	0
Shallots	lb.	0	8	0	0
Spinach	bushel	3	0	3	0
Tomatoes	per doz.	8	0	6	0
Turnips	bunch	0	9	1	0
Vegetable Marrows	dz.	0	0	0	0

FRUIT.		s. d.		s. d.	
Apples	½ sieve	0	0	to	0
Apricots	doz.	4	0	6	0
Cherries	lb.	2	0	3	0
Chestnuts	bush.	0	0	0	0
Currants	sieve	5	0	6	0
Black	do.	0	0	0	0
Figs	doz.	8	0	15	0
Filberts	lb.	0	0	0	0
Cobs	100lbs.	0	0	0	0
Gooseberries	quart	0	6	3	0
Grapes, Hothouse	lb.	5	0	10	0
Lemons	100	6	0	10	0
Melons	each	4	0	to	8
Nectarines	doz.	10	0	20	0
Oranges	100	6	0	12	0
Peaches	doz.	21	0	36	0
Pears (dessert)	doz.	0	0	0	0
kitchen	doz.	0	0	0	0
Pine Apples	lb.	6	0	10	0
Plums	½ sieve	0	0	0	0
Quinces	½ sieve	0	0	0	0
Raspberries	lb.	0	0	0	0
Strawberries	lb.	3	0	8	0
Walnuts	bush.	14	0	20	0

TO CORRESPONDENTS.

*** We request that no one will write privately to the departmental writers of the "Journal of Horticulture, Cottage Gardener, and Country Gentleman." By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to *The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.*

N.B.—Many questions must remain unanswered until next week.

BOOKS (E. S. E. G.).—Any of the one-volume English Floras would be what you require; Babington's "Manual of British Botany" is about the cheapest. There is no such book as would teach "enough knowledge of Latin to understand the names of plants," for the generic names are chiefly derived from the Greek.

PADLONIA IMPERIALIS (A. Rawson).—We are much obliged by the very fine blooms of this noble tree, produced at Bromley, in Kent. This year has been especially favourable to its blooming, or, we should be more correct in saying that last year was favourable to the formation of the blossom-buds. Very fine specimens of the blooms have been exhibited in London.

BLIGHT ON ROSE LEAF (T. W.).—It is not "a blight," for that popular name is confined to the consequences of parasitical fungi, aphides, and ungenial temperatures. On the leaf you enclose is a cluster of the eggs of some moth.

VARIOUS (H. Z.).—Write to Mr. Sims, Nurseryman, Foot's Cray, Kent, for the information about Ferns. The plant you mention as shown at the International Horticultural Exhibition was not a Fern, but an aquatic plant belonging to the Natural Order Juncagaceæ. Its popular names are the Lace Leaf and Water Yam; its botanical name, *Ovandra fenestralis*. We cannot guess what kinds of plants you wish to cultivate in your plant case. Ferns and Lycopodiums would be most easily cultivated in it. Caladiums and other ornamental-leaved plants, as in Messrs. Arthur Henderson & Co.'s cases in the Horticultural Society's arcade, require heat in the cold seasons of the year.

BRUMANSIA SVAVEOLENS BLOOM-BUDS FALLING (A Constant Reader).—The buds fall from an insufficient supply of water; the plant requires an abundance of water when the buds are swelling. The drainage must be good. We think that the buds would swell properly if you were to thin them out to one where there are three, syringe freely to keep down red spider, and give a plentiful supply of water, and manure water at every alternate watering. Before giving water let there be a necessity for it, then afford enough to reach the lowest roots.

EXPERIMENTING WITH ARTICLES ADVERTISED (P. H. G.).—Instead of incurring the expense and consumption of time you recommend, we much prefer our correspondents doing so and informing us of the results, which we readily find space for.

ROSE LEAVES CUBED (C. Bark).—We detect by means of a magnifier minute fungi on their under surfaces. Dust them with flowers of sulphur. Water the roots with weak liquid manure, and mulch over the surface.

ESCALLONIA MONTEVIDENSIS (T. Pearson).—Your plant which formed its buds last autumn, and flowered in May, having white heads of bloom, is quite in character. It is one of many handsome shrubs that are seldom seen, and though it was introduced in 1827 is not in general cultivation. This may be partly owing to its not being sufficiently hardy to endure our winters in many localities, for it will only thrive in warm sheltered places, and in some it requires a wall with a south or west aspect.

ASTERS IN POTS (Constant Reader).—They succeed in a compost of turfy loam from turves a year old two-thirds, and one-third leaf mould. You may if you have it add one-fourth of cowdung a year old, or well-reduced hotbed manure, adding sufficient sand to make the soil rather sandy. It is best to use small pots at first, and then repot as often as the roots reach the sides of the pot, giving the final shift when the flower-heads show above the leaves. Liquid manure applied twice or thrice a week after the pots become full of roots will increase the size of the plants and flowers.

DRACENA TERMINALIS CULTURE (Idem).—The leaf sent we think is that of the plant named, and if so, it does well in a compost of turfy loam and fibry sandy peat in equal parts, with one-third leaf mould, and a free admixture of silver sand, which may amount to one-sixth of the whole. Drain the pot well and pot rather low, shaking the old soil away. It will root from the stem inserted in the soil. Do not stiff the soil, but chop it with a spade and make it fine. Pot firmly but not tightly. After potting keep rather close and moist in a house having a temperature of from 60° to 65° by night, and when the roots are working in the fresh soil give a light and airy situation in a warm house, in which a moist atmosphere is maintained by sprinkling of the walls, paths, and all available surfaces twice daily. Avoid syringing the foliage, also cold currents of air, which will tend to cause the leaves to become brown at the points, as in the specimen sent. Give water copiously whilst growing, but none until the soil requires it. In summer the plant will do in a moist light stove, and in winter it will sustain no injury in a temperature of from 45° to 50°, if the soil be kept rather dry. It requires a brisk heat in spring, and encouragement in the shape of moisture; it does well in a vinery in summer.

GNOWING MIGNONETTE IN POTS (De Foir).—For early flowering sow the seed now in pans in a compost of equal parts loam and leaf mould, place the pans out of doors in an open situation, and keep the soil moist. When about 2 inches high prick off the young plants singly into small pots in the same compost, with the addition of one-third well-reduced hotbed manure; place them in a cold frame, and keep them close and shaded until established, then expose them to air and light, and to insure growth choose a place shaded from the sun between 9 A.M. and 4 P.M. An occasional watering is all that will be necessary up to August, and until then the flowers should be pinched off as they appear. In August shift into six-inch pots, and if the shoots are close together peg them down and out so as to keep them open. The plants will now grow rapidly and require frequent stopping and occasional waterings. Early in October shift them into eight or nine-inch pots, but still keep them out of doors and continue stopping. House the plants when it becomes unsafe to leave them out longer, and then place them as near the glass as possible, and where they can have plenty of fresh air. They do best in a cool, dry, airy greenhouse. Stop them up to December, and then allow them to go to bloom. Avoid keeping the soil wet, and give air abundantly. In midwinter you will have nice compact specimens covered with bloom, and in a convenient size of pot. If you wish for later-blooming plants, though these will continue in flower for a long time, you may sow the seed towards the end of July as before, in pans, placing them on an airy shelf in the greenhouse, where they are to remain until the plants are 2 inches high; then prick them off in eight-inch pots, four plants in each, in the compost already mentioned. The plants must be kept on the shelf until they show flower, when they may be removed to the brackets or stands where they can have an abundance of light and air. At this stage clear and weak liquid manure may be given at every alternate watering, remembering always that it and all water should be of the same temperature as the house. As the flowers begin to develop themselves liquid manure is given whenever moisture is required by the roots. Afterwards the plants are not further potted if the drainage acts well, and watering is not necessary so long as the soil retains sufficient moisture to prevent flagging. It is essential to keep the plants near the glass. We have given a mode of culture requiring pegging, stopping, and staking the shoots, and a method that needs no such attention, and we hope that one or other will meet your wishes.

SELAGINELLA CÆSIA CULTURE (Idem).—The plants growing in wire baskets become brown because exposed to too strong a light. At best it is not a very good basket plant, for it does not continue sufficiently long in foliage. For a few months it is rather handsome, but when the frond-like foliage loses its fresh appearance it becomes of a brown dingy hue, losing its metallic lustre, and is then the reverse of ornamental. The way we grow it is in pans 18 inches wide and 6 inches deep. After placing at the bottom a couple of inches of broken pots for drainage, the pan is filled to the rim with turfy, brown peat two-thirds, and one-third chopped sphagnum and charcoal from the size of a hazel up to that of a walnut. The plants are then taken from the store pans and laid on the surface in pieces 2 or 3 inches square and 6 inches apart, the first row 3 inches from the rim of the pan. The spaces between the tufts are filled with a compost of turfy sandy peat two-thirds, and one-third loam, broken and made fine, and sifted through an inch sieve, adding one-sixth of silver sand. This compost is put in high enough to slightly cover the tufts, and the surface being pressed gently a good watering settles all nicely around the tufts. Placed in a warm and rather dark or slightly shaded house, such as a vinery at work, if the atmosphere is kept moist and watering well attended to, this *Selaginella* quickly covers the surface and hangs over the sides of the pan. Throughout the summer it forms a fine object in a cool shaded house, to which it should be removed from heat after a good growth has been made. In winter the foliage is allowed young growths are an inch or so long. In winter the foliage is allowed to remain until it dies down, when it is cut off close. We keep it in water in a house having a temperature of from 45° to 60°, giving no more water than a little now and then to prevent the soil from becoming very dry; it is best kept just moist. We repot every other year.

PLANS OF GARDENS—BEDDING-OUT, &c. (M. N. E.).—A volume fully illustrated on these subjects is ready, for the press; but it cannot be published at the price you mention.

HANUM AND OTHER FRUITS (Ellimore Lodge).—No seeds of the Hanum are now to be had. They were all sown long since. "The Pine Apple Manual" you can have from our office free by post if you enclose thirty-two postage stamps. It details the Hamiltonian and other modes of culture. Directions for cultivating the Mango and other tropical fruits were recently published in this Journal, and we have no further information to communicate.

PROFUSE SHOOTS OF JARONELLE PEAR (J. Headingley).—The tree from which the sparrows ate the bloom-buds in March, and which is now throwing out an immense quantity of slender shoots, should have these pinched back to four leaves, leaving the leaders, however, at their full length, and training them up or along the wall. When the shoots push again stop them at the second leaf, and continue to do so throughout the season.

LIQUID MANURE FOR ROSES IN POTS (S. W. Stears).—There is no better form of liquid manure for Roses than 1 oz. of guano dissolved in a gallon of water. It should be applied at every alternate watering from the time of the buds showing to that of their expansion.

FUNGUS IN HARDY FERNEY (J. S. S.).—The only means of thoroughly eradicating the fungus is to remove the cause—that is, to take away the roots and stumps of the trees that breed it. You may destroy it partially by throwing lime over the parts infested, and then mixing it with the soil. Lime is adverse to the development of the mycelium of most funguses, and is not injurious to the plants. Remove the fungus when first noticed, and sprinkle fresh lime over the parts infested. A little fresh soil will remove all appearance of the application.

RAISING RHODODENDRONS (A Young Gardener).—The most ready way is from seed sown in spring, or when ripe, in a cold frame, in a compost of sandy heath mould. In sowing make the surface very fine, scatter the seeds evenly, and cover them thinly with fine soil. Keep the soil just moist, and regularly so; and when up expose the young plants to light more fully by removing the sashes, but put those on during very wet weather, and keep them tilted. Be careful to keep the soil moist. The better kinds are increased by grafting on *R. ponticum*. Grafting is best done when growth commences, and before the scions push new

shoots, and the stocks should be slightly more advanced. Whip-graft immediately above the point from which the roots radiate, and cover the union with soil.

DAISIES ON A LAWN (Idem).—The only plan is to grub them up by the roots, choosing a moist time for the operation. An old table-knife is the most suitable instrument. This you will find a very troublesome operation, and one which we could never find time to fully carry out, though convinced of its efficacy. We have to content ourselves with switching over the lawns with a Daisy-knife, which takes off the heads of the Daisies, and this we do every third day. It is only in early summer that Daisies are troublesome.

CRANOTRUS PRUNING (G. R.).—Your shrub against a south wall should have the foreright shoots pinched back to 3 inches, and the shoots thinned out so that they may not overcrowd each other, leaving, however, sufficient to train in, and such shoots should not be shortened. Any short shoots that do not appear straggling should be permitted to hang at liberty. It is a good plan to cut in the tree rather closely in spring, and to stop forerights when 3 inches long, training-in as many fresh shoots as it is possible to do without crowding; continue to do this up to August, when they may be permitted to hang loosely, and will then present a graceful appearance. Any shoots not required for filling up vacant space, and calculated to overcrowd, would be best cut clean out. We think the shoot sent belongs to *Ceanothus integrifolius*, but to be certain the flowers as well as the foliage are necessary.

ANTS IN FLOWER-POTS (J. P. F.).—The guano need only be sprinkled on the surface. Scotch snuff, also, sprinkled on the surface every day until the ants emigrate, we are told, is effectual. Bear in mind that ants are not injurious to the plants.

NAMES OF PLANTS (A Constant Subscriber).—You have been misinformed; the plant sent is not a Fern, but the common Lousewort, *Pedicularis sylvatica*. (*T. R. Drake*).—1, *Lysimachia nemorum*; 2, *Santula europæa*. (*J. Cunningham*).—1, We cannot say what your "spider-plant" may be without seeing specimens; 2, the bottom heat is, probably, insufficient; 3, looks like a leaf of *Cobæa scandens*; 4, *Lophospermum erubescens*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 9th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
			Air.		Earth.				
	Max.	Min.	Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 3	29.814	29.775	85	48	59	55	S.W.	.46	Overcast; hot; very fine; heavy rain at night.
Mon... 4	29.824	29.799	76	44	61	56	S.W.	1.02	Close and warm; cloudy; showery; very heavy rain at night.
Tues. 5	29.831	29.829	69	47	60	56	S.	.02	Fine; cloudy; overcast; showery.
Wed. 6	30.076	29.952	70	45	61	57	S.W.	.00	Overcast; cloudy; fine in afternoon, and at night.
Thurs. 7	30.116	30.075	75	42	61	57	S.W.	.00	Very fine throughout.
Fri. 8	30.207	30.171	78	40	61½	57½	S.W.	.00	Very fine, with clouds; very fine.
Sat. 9	30.211	30.064	84	50	61½	57½	S.	.00	Very fine; hot sun, and S. wind, and dry air; warm at night.
Mean	30.019	29.952	76.71	45.14	60.71	56.57	..	1.50	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

BATH AND WEST OF ENGLAND SOCIETY'S POULTRY SHOW.—JUNE 4TH TO 6TH.

THIS Society dates back even so far as the year 1777, long before public exhibitions of poultry were in existence. The managers, however, anxious to do everything possible to merit public support, some years back added both poultry and Pigeons; and the result has been that from the very hour of so doing this department of their monster meetings has proved the most popular of any. The entries of this year were also in point of numbers quite beyond precedent, and the quality of the birds exhibited merits the highest approval. The general confidence in the management of this Show is best proved by the fact that scarcely any noted breeder of poultry absented himself from the competition, and that even exhibitors living so far from the place of exhibition, which was Salisbury, as Dublin and Limerick, presented themselves in strong force, and succeeded in winning prizes. The very high health and condition in which these birds were shown after their long journey from the Sister Isle reflects much credit on the management of their respective owners, more particularly as June is not by any means a favourable time of year for exhibiting adult poultry in first-rate feather. It was customary a few years ago to offer prizes for chickens at the Bath and West of England Show, and there was generally a good competition; but the egregious mis-statements in respect of age made by some few exhibitors at length became so great an evil that the Council wisely determined to abandon these classes altogether, and leave the competition for birds of any age. Singularly enough, this year only one pen of chickens was shown, and very good they were; but perhaps no class could be named in which the improbability of success could be greater for chickens than the Grey Dorking class, to which these youngsters belonged.

The arrangements for the display of the poultry deserve our highest praise, so much so that several of our most practical exhibitors expressed their opinion that they were "incapable of improvement." The tent appointed exclusively for the poultry Show was by far the best we have ever met with at any show, the length being 300 feet, and

the width 40 feet. With such an abundance of space of course all could be seen to equal advantage, there being no dark corners as at many shows; and the ventilation, although the weather proved exceedingly hot, was well provided for; nor were the birds ever left entirely to subordinates, one or other of the acting Committee being constantly in the tent. Good condition, perhaps, tells even more favourably at this time of year than any other, and consequently such birds as are somewhat late in their moult are best adapted for the Bath and West of England meetings, for it is well known that no old birds have as yet moulted out thoroughly.

The two first classes, *Black Spanish* and *Grey Dorkings*, were especially good, Lady Holmesdale repeating her usual successes in both instances. These classes, and those for the *Cochins*, seemed to be especially interesting to the Salisbury visitors, Mr. Jennison's Buffs and Mr. Stephens' Partridge-coloured Cochins interesting crowds of visitors. The *Dark Brahmas* were particularly good throughout, and that in a large entry, and the competitors had a very close run for the prizes. A very good pen of this colour, belonging to Mrs. Seamons, of Aylesbury, was "disqualified," being unfortunately entered in the "Light-coloured Brahma" class. It was a great pity, but the rule is imperative, and we cannot impress too strongly on owners the necessity of giving their undivided attention to the classes of the prize schedules whilst making their entries, as fowls wrongly entered always involve both money and trouble thrown away, without the most remote chance of prizetaking. The *Game* classes were very good; and in the Variety class a pen of Brassy-winged Game were well worthy of attention. The first-prize *Malays* were capital, and had travelled from Limerick. Unfortunately, however, the two Indies in this pen seemed as though they had been indulging in a regular Irish row during their long journey, one being scalped so sadly that we fear she will never again be able to put in an appearance as a show bird. Never has there been a Show of either *Polish* or *Hamburgh* fowls seen in this neighbourhood equal to the one at Salisbury last week. Every variety was well shown. The *Schbright Bantams* were very perfect, the Silver-laced ones especially so. *Black and White Bantams* were equally good.

The *Geese* and *Turkeys* were as good classes as any in the Show tent. The *Aylesbury Ducks* were A1, but the *Roon Ducks* were many of them quite faulty in bill or feather.

Guinea Fowls are not customarily known in competition at poultry shows, but there is a very good entry, and they were evidently somewhat attractive to the public.

The Show was exceedingly well attended, and the weather on the whole favourable.

SPANISH.—First, Viscountess Holmesdale, Linton Park, Staplehurst, Kent. Second, E. Jones, Clifton, Bristol. Third, D. Parsley, Kingsdown, Bristol. Highly Commended, T. Bamfield, Clifton, Bristol; A. Heath, Calne, Wilts. Commended, Rev. J. de la S. Simmonds, Chiscomb Rectory, Winchester, Hants.

DORKING (Coloured).—First and Second, Viscountess Holmesdale. Third, H. Lingwood, Barking, Needham Market, Suffolk. Highly Commended, C. Cork, New Shoreham, Sussex; C. Smith, Durrford, Salisbury; Dr. J. D. Hewson, Coton Hill, Stafford. Commended, J. C. Cooper, Cooper Hill, Limerick; Dr. J. D. Hewson.

DORKING (White).—First and Second, H. Lingwood. Commended, T. P. Edwards, Lyndhurst, Hants.

COCHIN-CHINA (Cinnamon and Buff).—First, C. Jennison, Bell Vue Zoological Gardens, Manchester. Second, J. Cattell, Bristol Road, Birmingham. Third, Miss J. Milward, Newton St. Loos, Somerset.

COCHIN-CHINA (Brow and Partridge-feathered).—First, J. Stephens, Walsall, Staffordshire. Second, Mrs. H. Pigeon, Furzedown, Hythe, near Southampton. Third, J. C. Cooper.

COCHIN-CHINA (White).—First and Third, R. Chae, Balsall Heath, Birmingham. Second, F. W. Zurborst, Belville, Donnybrook, Co. Dubbo.

BRAMA POOTRA (Dark).—First, G. H. Roberts, Fenworthy, near Preston, Lancashire. Second, J. Hinton, Hinton, near Bath, Somerset. Third, R. W. Boyle, Galtram House, Bray, Co. Wicklow, Ireland. Highly Commended, J. K. Fowler, Prebendal Farm, Aylesbury, Bucks. Commended, J. C. Cooper.

BRAMA POOTRA (Light).—First and Second, J. Pares, Postford House, Guildford. Third, E. Sheerman, Chelmsford, Essex. Commended, Mrs. Easton, Orington Down, Hampshire.

GAME (White and Piles).—First, Rev. G. S. Cruwys, Crawys Orchard Court, Tiverton, Devon. Second, Miss S. H. Northcote, Upton Pynes, near Exeter, Devon. Third, S. Matthews, Stowmarket, Suffolk.

GAME (Blacks and Brassy-winged, except Gray).—First, C. Bulpin, Bridgwater, Somerset. Second, Rev. G. S. Cruwys. Third, R. Limbrick, Kenilworth, Warwickshire.

GAME (Black-breasted and other Reds).—First, S. Matthews. Second, H. Bertram, Cowes, Chale, Isle of Wight, Hants. Third, G. Hanks, Malmesbury, Wilts. Highly Commended, W. Stratton, Ropley, Abresford, Hampshire. Commended, A. Elling, Sutton Parva, near Warmistoe, Wilts; W. H. Stagg, Netheravon, Pewsey, Wilts; T. L. Mills, Orcheston St. Mary, Wilts.

GAME (Duckwings and other Greys and Blues).—First, Rev. G. S. Cruwys. Second, S. Matthews. Commended, S. Dupe, Evercrech, Bath; Mrs. V. Long, Amesbury, Wilts.

HAMBURGH (Golden-pencilled).—First, F. Pittis, jun., Newport, Isle of Wight. Second, H. Beldon, Goitstock, Bingley. Third, E. Mills, Mannamend, Plymouth. Commended, C. Edwards, Wrington, Somerset.

HAMBURGH (Silver-pencilled).—First, H. Beldon. Second, Viscountess Holmesdale. Third, J. Holland, Chestnut Walk, Worcester. Commended, E. J. W. Stratford, Addington Place, near Maidstone, Kent.

HAMBURGH (Golden-spangled).—First, I. Davies, Harborne, near Birmingham. Second, J. Walker, Haya Park, near Knaresborough, Yorkshire. Third, A. K. Wood, Ernside, Kendal, Westmorland.

HAMBURGH (Silver-spangled).—First, A. K. Wood. Second, H. Beldon. Third, J. Skinner, Maidce, Newport, Monmouth. Highly Commended, J. Walker. Commended, Mrs. Pettat, Ashe Rectory, Overton, Hampshire.

POLISH (Black, with White Crests).—First and Second, T. P. Edwards, Lyndhurst, Hants.

POLISH (Golden).—First, H. Beldon. Second and Highly Commended, Mrs. Pettat.

POLISH (Silver).—First, H. Beldon. Second, J. Hinton, Hinton, near Bath.

MALAY.—First, J. C. Cooper. Second, Rev. A. G. Brooke, Ruyton XI. Towns, Salop. Third, J. Hinton. Highly Commended, Rev. G. Hustler, Stillingdeaf Vicarage, York.

MINORCA.—First, H. Leworthy, Newport, Barnstaple, Devon. Second, R. C. Foster, Freshford, near Bath. Highly Commended, Miss S. H. Northcote.

CRÈVE CŒUR.—First, C. Cooper. Second, The National Poultry Company (Limited), Bromley, Kent.

ANY OTHER DISTINCT VARIETY.—First, The National Poultry Company (Limited), (Guelidres). Second, H. Beldon (Black Hamburgs). Third, P. P. Cether, Salisbury (Pheasant Malay). Highly Commended, J. C. Cooper (Houdan); C. Coles, Fareham, Hants (Andalusian); F. W. Zurborst (La Flèche); R. H. Nicholas, Malpas, Monmouthshire (Black Hamburg); The National Poultry Company (Limited), (La Flèche). Commended, Miss S. H. Northcote (White Spanish); E. Pigeon, Lymstone, near Exeter (La Flèche).

SINGLE COCKS.

SPANISH.—First, Viscountess Holmesdale. Second, E. Jones, Clifton Bristol. Highly Commended, H. Beldon.

DORKING.—First, S. Laog, jun., Barrow Garagey, Somerset. Second, W. R. Peasey, Chelworth, Gloucestershire. Commended, C. Hargreaves.

COCHIN-CHINA.—First, G. Manning, Springfield, Essex. Second, C. Jennison. Highly Commended, J. K. Fowler.

BRAMA POOTRA.—First, Rev. J. Ellis, Bracknell, Berkshire. Second, R. W. Boyle, Bray, Co. Wicklow. Highly Commended, J. K. Fowler; E. Pigeon. Commended, Mrs. C. Hargreaves.

GAME.—First, Rev. G. S. Cruwys. Second, H. Bertram. Highly Commended, G. S. Sainsbury, Devizes, Wilts.

HAMBURGH.—First, H. Beldon. Second, E. J. W. Stratford, Addington Place, near Maidstone.

POLISH.—First, H. Beldon. Second, J. Hinton.

BANTAM.—First, R. Tate. Second, G. Monning. Commended, T. Davies, Stow Hill, Newport, Monmouth.

ANY OTHER DISTINCT VARIETY.—First, E. Pigeon (La Flèche). Second, The National Poultry Company (Limited), (Houdan).

BANTAM (Gold-laced).—Prize, Rev. G. S. Cruwys.

BANTAM (Silver-laced).—First, Rev. G. S. Cruwys. Second, Mrs. Pettat. Highly Commended, Messrs. S. & R. Ashton, Mottram, Cheshire.

BANTAM (White or Black).—First, Rev. G. S. Cruwys. Second, E. Cambridge, Bristol. Highly Commended, Rev. G. S. Cruwys; T. Davies. Commended, F. Pittis, jun.

GAME BANTAMS.—First, R. Tate. Second, Mrs. Pettat. Highly Commended, J. K. Fowler; J. Skinner, Maidce Farm, near Newport, Monmouth.

DUCKS (White Aylesbury).—First, Mrs. M. Seamons, Hartwell, Aylesbury, Bucks. Second, J. Skinner.

DUCKS (Rouen).—First, J. E. Rawlence, Bulbridge, Wilton, Salisbury. Second, J. K. Fowler. Highly Commended, J. C. Cooper; G. Hanks; C. Edwards, Wrington, Somerset.

DUCKS (Any other variety).—First, T. H. D. Bayly, Ickwell House, near Biggleswade, Bedfordshire (Brown Call). Second, T. C. Harrison, Beverley Road, Hull, Yorkshire. Commended, Mrs. M. A. Hayne, Ferdington, Dorsetshire (Black East Indian).

GESE.—First, Mrs. M. Seamons. Second, J. C. Cooper. Highly Commended, J. C. Cooper; Mrs. M. Seamons; J. K. Fowler. Commended, Mrs. Easton.

TURKEYS.—First, J. C. Cooper. Second, S. Lang, jun. Highly Commended, Miss J. Milward, Newton St. Loos, Somerset; Captain K. P. Warren, Busingstoke, Hampshire.

GUINEA FOWLS.—First, T. C. Harrison. Second, Miss S. H. Northcote. Commended, Captain H. Aduay, Pemberton, near Collumpton, Devon; C. Edwards.

PIGEONS.

A very excellent collection of about one hundred pens of *Pigeons* was to be seen at Salisbury. The competition in most of the classes was very severe, as it will be seen by reference to the prize list that most of our principal Pigeon amateurs had made entries. We regret to find that "trimming" Pigeons is now becoming equally general as in times gone by was customary in the poultry classes. The Judges, however, seemed determined to put a stop, if possible, to such practices, and consequently disqualified Pigeons so tampered with from taking prizes.

CARRIERS (Any colour).—First, R. Fulton, Deptford. Second, A. Court, Taunton. Commended, C. Bulpin.

TUMBLERS (Almond).—First and Second, R. Fulton.

TUMBLERS (Any other variety).—First, R. Fulton. Second, H. Yardley, Birmingham.

POWERS.—First, R. Fulton. Second, C. Bulpin.

RUNTS.—First, E. Pigeon, Lymstone. Second, The National Poultry Company (Limited).

JACOBS.—First withheld. Second, C. Bulpin.

PANTALS.—First, C. Bulpin. Second, H. Yardley.

ORLA.—First, St. J. Coventry, Wimborna. Second, E. Pigeon.

TURBETENS.—First, C. Bulpin. Second, F. Key, Beverley.

BARBS.—First and Second, H. Yardley. Commended, E. Pigeon.

TREBITA.—First, C. Bulpin. Second, H. Yardley.

DRAGONS.—First, C. Bulpin. Second, H. Yardley. Commended, E. Pigeon; H. Yardley.

ARCHANGOLA.—First, C. Cowburn, Calls, Leeds, Yorkshire. Second, H. Yardley.

MAGPIES.—First, A. Court. Second, H. Yardley. Commended, C. Bulpin.

ANTWERPS.—First, H. Yardley. Second, C. Cowburn. Commended, H. Yardley; C. Cowburn.

ANY OTHER NEW OR DISTINCT VARIETY.—First, F. Broemel, Lewisham. Second, H. Yardley.

The Judges for Poultry were Mr. Thomas Challoner, of Worksoy; and Mr. Edward Hewitt, of Birmingham; and Mr. Tegetmeier and Mr. Harrison Weir, both of London, judged the *Pigeons*.

POULTRY TOO LATE AT THE WOODBRIDGE SHOW.

I SEE that, according to your notice of the Woodbridge Poultry Show, a number of exhibitors were shut out from competing by the late arrival of their birds. I am sorry to say that we were one of the unfortunates; and I should be glad to hear from those who were likewise sufferers, so that we may endeavour at least to obtain the expenses we have needlessly been put to from those who are in fault, and I suspect we shall all be able to lay our complaints at the same door.—MANAGER, National Poultry Company (Limited), Bromley, Kent.

REMOVING THE GAPES-CAUSING PARASITE.

WHILE on the subject of poultry let me also recommend a plan I have tried for years with success when birds are affected with the gapes. It is worth all the nostrums advertised. The whole apparatus consists in a thin piece of gut, such as flies are fastened on, coarser for chickens than for Pheasants, and tolerably stiff, about from 4 to 6 inches long, and fastened at the end of the loop with a piece of sealing wax by way of handle. Put this gut down the windpipe, twist it round half-a-dozen times, and you will draw out the parasite that gives so much trouble; repeat the process two or three times and let the chicken go. From being so flexible no harm is done to the tender tube of the windpipe; wire kills as often as it cures. When a chick is first attacked is the best time for the operation. The larger the worm the more he has taken out of the chicken, and before feeding is better than after a meal. Keep

half a dozen of the loops by you, as the slime in the windpipe makes the gut limp, and you require it stiff. I now never lose a bird from this disease if taken in ordinary time.—G. W., Cardiff.

SUPERS AND SWARMING.

I HAVE some bees in one of "Neighbour's cottage hives," a last year's swarm. Last month I put on a large glass super, with a piece of comb attached to the ventilator, the bees went into the glass, and commenced working. They have enlarged the piece of comb, and partly filled it with honey, but yesterday (June 1st) they swarmed. The stock hive seems full, and the cells nearly all filled with honey.

Is it right to let the super remain on, now they have swarmed? and could the swarming be caused by too frequent looking at the super to see how they were getting on?—T. C. WROUGHTON.

[It may be laid down as a general rule, that when a swarm issues from a hive in which the combs are fixtures, the bees will not afterwards complete a super. There are, of course, exceptions to this rule, but as these can only occur in exceptionally good seasons, they may be left out of the question. What then, it may be asked, is to be done, and how in such a case can the completion of an unfinished super be brought about? We should advise as the course most likely to lead to the attainment of this desirable end, that the super be removed from the old stock, and placed on the swarm—say about a week after it has issued. By this time the young colony will have so far advanced in the task of furnishing its new habitation, that the queen is not likely to be driven to breed in the super, and there will be every probability that the task which the little emigrants left incomplete when they abandoned their old domicile will be satisfactorily completed in their new premises. The contingency which will remain to be guarded against, is the possibility of the adventurers storing all or nearly all their provision for the coming winter in the super, in which case they must be in some measure compensated, by liberal feeding in the autumn, for the stores of which they have been deprived.

It is, of course, unadvisable, to disturb bees by too frequent inspection, but we do not think the infraction of this rule sufficient of itself to cause them to swarm.]

RETAINING SUPERS AFTER SWARMING.

A WEEK or two back you published the different weights of my single bee-hive during the past winter, the weight on May 4th, being 29½ lbs., as shown in the Journal, No. 268, page 374. On May 8th, the weight slightly increasing, I put on a small straw hive (Payne's), 7 inches deep, 8 inches broad; and other alterations in the hive made the total weight 38½ lbs. On the 10th, the weight had declined to 38½ lbs.; on the 13th, to 37½ lbs.; on the 21st it had risen to 41½ lbs., and the small hive was so crammed with bees, that I lifted it, and put between it and the stock hive a box 11 inches square, and 7 inches deep. This box raised the weight from 41½ lbs. to 45½ lbs. The bees at once commenced working in the box, and on May 30th the weight had increased to 52½ lbs., an increase of 7 lbs. in nine days.

All my efforts to prevent swarming, however, were useless, for on June 2nd a swarm came off weighing only 2½ lbs. Now, I am in a difficulty, for Payne's book says, "Whenever a swarm comes off leaving a small hive in an unfinished state, let the swarm be hived, and the small hive removed from the stock hive, and placed upon the newly-hived swarm, for no further profit can be expected from the stock hive beyond a second, and, perhaps, a third swarm." From what I have read in the Journal during the last few months, most of your correspondents have had swarms, and still left the supers on, and obtained large quantities of honey. I have so far left mine on, and the bees seem busy at work in them. Which is the correct plan of the two mentioned?

After the description given above, do you see anything wrong in my management that should make me unsuccessful in preventing swarming? and if not, can you account for the swarm? and am I sure to have a second?—J. R. BERTON.

[We see nothing wrong in your management, the result is just the fortune of war, or rather of bee-keeping. The first swarm will probably be followed by a second, but nothing can be predicated with certainty on this point. Read our reply to-day to Mr. Wroughton. It is, as we have there stated, only in exceptionally good seasons such as the last, that a stock which has swarmed will either fill or even complete a partially-filled

super. In answer to your concluding query about hives, we should say, No. 3 for the novice, No. 2 for the more advanced bee-keeper.]

OUR LETTER BOX.

TREATMENT OF DUCKS FOR EXHIBITION (S.).—With very few exceptions birds improve far more in condition when at liberty than when in confinement. They do not always increase in weight, but they do in health and feather. If you require positive weight you must shut them up; but the place should not be too small. An old pig-stye does very well if littered with straw where it is under cover. The food may be oats, oatmeal, and greaves. The latter make weighting fat. We are sticklers for nature, and the best exhibitors of Rouen Ducks never confine their birds. Aylesburys are more artificially got up. They require to be at liberty in the morning, as their bills become and remain pale by contact with the cold grass when covered with early dew or hard frost.

MARKING CHICKENS (E. C. C.).—You may mark your chickens so as to know one brood from another by passing coloured waxed thread through the web of the wing. It must be securely tied and cut short; or, you may take a red-hot needle and burn holes through the web of the wing, marking the different broods or strains with one, two, or three holes. The marks are indelible, and the operation seems to cause little or no pain. You can, if you will, mark by a notch in the beak, or the cyllids; but those cocker's marks are known to every one, and detected at once by those who understand them. The marks in the web of the wing are perfectly concealed.

CRÈVE CŒUR CHICKENS (X.).—Crève Cœur, like all black chickens, are hatched with a quantity of white down about them. This should gradually disappear as feathers grow, and at two months old they should be quite black top-knotted chickens. They are pert and gay chicks, having tails developed at an early age, but do not give the idea of the size which they afterwards attain.

HEN LEAVING HER EGGS (A. J.).—Though a Brahma hen has left her nest for four or five hours on the ninth day of sitting, the eggs are not likely to prove bad in consequence.

MANAGEMENT OF THE WOODLARK (E. S. C.).—The usual plan is to feed a Woodlark on German paste, which I do not consider a wholesome food. I would recommend bread and cheese. Woodlarks clean themselves by dusting in sand. I think they will also wash in water. I expect that their feet had become encrusted with dirt owing to the birds being in a relaxed state of body, which I think cheese will correct. The bottom of the cage should be kept clean with plenty of dry sand, and, I feel sure, Woodlarks would do better with a turf to peck at. A chopped egg will be a very good addition to their bill of fare.—B. P. BRENT.

MULE'S BREEDING (Greenfinch).—It has been reported that Goldfinch Mules will breed, but I never knew of a case. I have known Mules pair, and even hen Mules lay small eggs, but never had any produce. There is no harm in your trying the experiment, but it is ten thousand to one against you. It is the rule for Mules not to breed; if they do, it is the exception.—B. P. BRENT.

COCKATOO PICKING ITS FEATHERS (An Old Subscriber).—We would advise you to give the cockatoo a good syringing of water two or three times a-day with a garden syringe, and keep him on scalded bread, Indian corn, and canary seed. If the bird has plucked its feathers any length of time it is very doubtful if it can be cured of the habit of doing so. The vivary temperature of 65° to 75° is very suitable for the bird.

PURCHASED BEE-HOUSE AND HIVES (J. S., Bristol).—If the manufacturer's name be on the bee-house or the hives, it will be better to write to him for information. Should you not be able to identify the maker, we will do our best to enlighten you on being furnished with inside measurements and a detailed description of both house and boxes, stating if these latter differ from each other, and, if so, in what particulars.

KILLING MOTHS (J. B., Durham).—For entomological specimens, the best mode of killing moths is to bruise fresh laurel leaves and half fill with them a wide-mouthed jar, put over them a thin layer of cotton wool, and close the jar with a tightly-fitting bung. A moth put into the jar will be dead in a very short time. The cause of the death is the vapours of the prussic or hydrocyanic acid emitted by the leaves.

DEATH OF "KING DICK."—By a printer's mistake in my letter inserted last week respecting the death of the noted bull-dog "King Dick," I am made to say that it will be especially interesting to your readers as "King Dick" was the size of "Romania," the bull-dog suffocated during its transit to the Sheffield Show. The fact is this, "King Dick" being the sire of "Romania." I did think the very close blood relationship of father and son, coupled with their almost simultaneous death, was both interesting and remarkable.—EDWARD HEWITT.

GALVANISED IRON TANKS AND PIPES.—"W. T." would be glad to have information as to the suitability of galvanised iron for water tanks and pipes for storing and conveying water for clean domestic use. He fears the zinc might poison the water, rendering it unfit for drinking or cooking purposes, and also that the zinc might flake off and stop up the pipes, or quickly rust if laid under ground. Being about to lay water on to his house, a distance of about 40 yards, it seems that galvanised iron would be cheaper than any other material if it would prove sufficiently durable and cleanly.

POULTRY MARKET.—JUNE 11.

Our supply increases weekly, and bids fair to exceed the demand, which is dull. The doubt and uncertainty that prevail with all classes is not without effect on the poultry market.

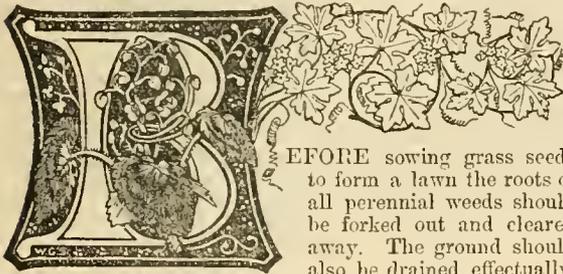
	s. d.	s. d.	s. d.	s. d.
Large Fowls.....	3	6	4	6
Smaller do.....	3	0	3	6
Fowls.....	0	0	0	0
Chickens.....	1	9	2	3
Goslings.....	5	0	6	0
Ducklings.....	2	0	2	3
Guinea Fowls.....	0	0	0	0
Partridges.....	0	0	0	0
Hares.....	0	0	0	0
Rabbits.....	1	4	1	5
Wild do.....	0	8	0	9
Pigeons.....	0	8	0	9

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 19—25, 1866.	Average Temperature near London.			Rain in last 39 years.	Sun Rises.		Sun Sets.		Moon Rises.		Moon Sets.		Moon's Age.	Clock before Sun.	Day of Year.	
			Day.	Night.	Mean.	Days.	m.	h.	m.	h.	m.	h.	m.	h.	Days	m.	s.	
19	Tu	Sun's declination, 23° 26' N.	71.0	48.9	60.0	21	44	3	18	8	32	11	57	11	)	0	58	170
20	W	QUEEN VICTORIA'S ACCESSION, 1837.	72.2	49.1	60.6	18	44	3	18	8	after.				8	1	11	171
21	Th	QUEEN VICTORIA PROCLAIMED.	73.8	50.8	62.3	16	44	3	18	8	40	1	22	0	9	1	23	172
22	F	Banksia speciosa.	73.4	49.6	61.5	16	45	3	19	8	43	2	45	0	10	1	36	173
23	S	Banksia serrata.	72.8	47.2	59.7	16	45	3	19	8	45	3	11	1	11	1	49	174
24	SUN	4 SUN. AF. TRIN. MIDSUM. DAY.	73.6	51.1	62.3	15	45	3	19	8	46	4	39	1	12	2	2	175
25	M	Bossia heterophylla.	72.7	49.7	61.2	20	45	3	19	8	42	5	11	2	13	2	15	176

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 72.7°; and its night temperature 49.5°. The greatest heat was 93°, on the 19th and 22nd, 1846; and the lowest cold 35°, on the 23rd, 1851. The greatest fall of rain was 0.72 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

MAKING A LAWN.



BEFORE sowing grass seeds to form a lawn the roots of all perennial weeds should be forked out and cleared away. The ground should also be drained effectually,

and be made level, or even in surface, whether it rise or fall. It is not necessary to have a lawn level, but whether on the level or on an incline it should be even in surface—regularly level or regularly sloping.

To secure a fine grassy surface free from irregularities it is necessary to have the ground formed to the outline desired some time prior to sowing the grass seeds. This is particularly the case when the general surface is reduced in some places, and hollows are made up in other parts. The made ground will settle considerably; it should, therefore, not only be made firm by treading or ramming, but be left for a while to settle, and after rain has fallen upon it for some time it is an easy matter to take away the heights and fill up the hollows, but very annoying after having been at great trouble to level the surface to find it, after the lawn is formed, irregular and full of holes. In levelling care should be taken to use firm soil. It is a common practice to fill up the holes with any kind of rubbish, covering it with a coat of soil for the grasses to root in; but however level it may be at first, that part formed of rubbish will invariably settle in time, leaving a hollow, and spoil the whole.

The ground being drained, free from perennial weeds, and having a firm even surface, it should be raked fine, and the seeds sown when the soil is in good order, choosing a calm day with an early prospect of rain. Gently rake the seed in with a light wooden rake, and roll firm. The best time to sow the seed is in April, for the soil is mostly then in good tilth after exposure to a winter's frost; but if the ground is very weedy it would be well to let it lie fallow part of the summer, and the weeds could then be more easily forked out. In that case the first week in September would be a more suitable period for sowing, omitting the Clover seed, which should invariably be sown in April, or at latest by the middle of August, so that the plants may become established before winter, as they are liable to suffer if this prove severe. Composed as the grasses to be recommended for lawns are of the smaller and finer kinds, it should be borne in mind that they should not be sown in autumn on cold soils or in bleak situations, spring being the only suitable seed-time for such soils and situations.

When the seed has braided, and the plant is an inch or two high, roll the ground twice a-week; this will tend to make a firm surface, cause the plant to branch, and produce a closer turf. Do not mow the grass until July. Bear

with its unlawn-like appearance, knowing that every increase of head gives increase of root, and to get the roots down is a grand point in forming a lawn to look well during hot dry weather. Mow it if possible during showery weather, but if the weather be dry afterwards give it a sprinkling of rich compost; or, if the lawn be intended for playing at croquet upon, and have a damp bottom, ashes passed through a half-inch riddle, and soaked in liquid manure, should be used; sufficient to cover the ground half an inch will do much towards rendering the surface dry, and after rain there will be little of either the soil or ashes to be seen. Now is the time to roll. Roll whilst the ground is wet, for with the loose soil there is no fear of its cracking. After this roll twice a-week, and cut the grass every three weeks with the machine set an inch higher than for ordinary lawns, or if cut with the scythe cut higher, switching off the tops only. Leave off mowing, or cut for the last time in the third or fourth week in September; the grass being rather long, the taller sorts will serve as a sort of protection for those of less growth.

In March apply a dressing of rich compost, or if the ground is of a strong nature and wet, ashes mixed with half their bulk of well-rotted manure will be better, especially where a dry surface is desired. Enough of either of these to just cover the surface should be equally distributed with the back of a rake. When the grass comes through roll it well, and by the beginning of May there will be a turf free from Daisies, Dandelions, Buttercups, other perennial weeds, and coarse grasses. Thus in little more than twelve months a better turf can be obtained by sowing seed than by laying turf.

Afterwards the lawn should be treated the same as lawns generally, and if any weeds appear upon it they ought to be rooted up before they have become strong, the ground being looked over occasionally for the purpose. It is a great evil to allow perennial weeds to grow year after year without making any attempt to destroy them, except by cutting off their heads. This is a very uncertain method of destroying them, and very often more time is spent in cutting off Daisy heads during summer than would make their appearance impossible were half the time spent in taking up the roots with an old table-knife in spring. Worse even than Daisies are the coarse grasses. They grow much more rapidly than the finer sorts, and only a few days after mowing these rough erect blades give such a ragged appearance to a lawn that it seems none the better of mowing, and all the labour that has been bestowed upon it in rolling, sweeping, &c.

The beauty and perfection of a lawn consists in the evenness of the surface, whether on a level or slope; the absence of weeds, such as the Daisy, Plantain, &c., and of coarse grasses, such as *Dactylis glomerata* and many others that might be named, also moss. The advantages obtained by sowing grass seeds to form a lawn are as follow:—Greater opportunities are afforded for clearing the ground of the roots of weeds, for draining, for improving the ground, and for levelling the surface; and we can select the most permanent grasses having fine short foliage, evergreen, of one shade of colour (those of a blue or yellow

hne dotted here and there are not desirable), and deep-rooted, so that burning, and consequent browning, during hot dry weather may be avoided. These blend quickly in the turf, grow uniformly, and bear constant mowing. Further, these grasses suitable for an open, exposed, or shaded situation, and for either a heavy or light soil, can be selected, and we secure at a less cost a turf more closely approaching the standard of excellence than by any other process.

On the other hand, in laying turf there are many disadvantages. Often after levelling the ground sufficient time is not allowed for it to become consolidated before the turf is laid, and it sinks into an uneven surface; the opportunities for draining and for grubbing up the roots of perennial weeds are small; but even if the ground be drained, levelled, and allowed sufficient time to consolidate before the turves be laid, these are frequently composed of the coarser grasses, with a considerable proportion of weeds, or of grasses not suitable to the soil or situation where the turf is to be laid. Even admitting, however, that good turf can be obtained and properly laid, there is a great difference in the expense as compared with sowing. Rarely, indeed, is anything considered regarding the suitability of the turf; few ask themselves, Will it suit the soil and situation? How seldom, indeed, are the roots of perennial weeds, that may be counted by the dozen in every square foot, noticed until after the turf is laid? It takes two men twelve days to cut the turf from an acre, this at 2s. 6d. per day amounts to £3; horse, cart, and man all that time carting it a mile, 6s. per day, £3 12s.; three men to lay it, one at 3s. 6d. per day, £2 2s.; two at 2s. 6d., £3—making an outlay of £11 14s. necessary to lay an acre of ground with turf. Under any circumstances the carting of turf to lay down a lawn may be characterised as seeking an early result at any cost. A lawn may be laid down with grass seeds, and well, for £5, labour included (but not that of levelling and cleaning the ground), and the results are much better—no weeds, but a lawn of the best grasses suitable for the soil and situation. Very often more money is sunk in obtaining turf to form a lawn than would, were it desirable, be necessary to pay the labour of forming slopes, terraces, and other accompaniments, which would be new features, and give additional beauty to a place. A much better use for the turf where it can be had is to pile some of it up for compost for the growing of Pines, Vines, and ornamental plants. Whenever a lawn is taken up for the purpose of improvement it would be much better to use the turf for the purposes named, and to sow grass seeds, than to relay it. The only advantages resulting from laying turf are that it looks green at once, can be used very nearly the same as an old lawn in the first year, and is firmer and more pleasant to walk upon. A lawn obtained by sowing is of little value as a lawn during the first year, as it requires twelve months to become established, after which it is in every way superior to a lawn formed by laying turf. There are very many lawns which, as such, are far from satisfactory, being one-third weeds and inferior grasses; others consist of but little grass, a thick covering of moss being the verdure mainly constituting the lawn; and others, again, are very uneven in surface. The best plan that could possibly be adopted with such lawns would be to take off the turf an inch thick, and use it after proper preparation for renovating fruit-tree borders, and the quarters in the kitchen garden. The soil of lawns after the turf has been taken off should be forked over, and the roots of weeds picked out. A bushel of salt, lime, and soot will make the latter into good manure in twelve months, that quantity being sprinkled on a cartload. Drain the ground as early in autumn as possible, so that the filling-in may have time to settle before seed time, also that there may be time to level the surface, form terraces, or do whatever else may be desired. The ground will be settled down by spring, and all that it will then need is to make it even by lowering the heights, and filling up the hollows, rolling and treading so as to make a firm surface, and to sow it in April with a mixture of grasses suitable for the soil and situation.

Before laying turf to form a lawn it is necessary in the first place to see that water does not remain stagnant in the subsoil, otherwise moss will be encouraged, and the grasses, being late before they begin to grow, do not root deeply, and will, consequently, be burnt up in summer. It is also desirable to lay turf from an open situation in a similar position, that from under trees in shady places, and that from either wet or dry ground in spots of a similar character. The turf should also be free from weeds, especially the coarser grasses, and more particularly those having underground creeping roots, such as couch grass, the bents, &c. I have found but few awards con-

taining White Clover (*Trifolium repens*), and the common Bird's-foot Trefoil (*Lotus corniculatus*), that were not intermingled with grasses suitable for lawns. When these were absent the herbage was found too coarse for forming a fine sward.

The best time to lay turf is early in spring before dry weather sets in, but any time during open showery weather from the middle of September to May will answer for this kind of work; but the less there is to do after the grasses commence growth up to that of its ceasing the better, so as to obviate the necessity of artificial waterings.

Where the ground is thin an addition of fresh soil is beneficial, and to loosen that on which the turf is to be laid to a good depth would very much contribute to the freshness of the lawn in summer, for the roots being deeper would not so soon be affected by dry weather. Where the soil is wet, and of a strong nature, in addition to loosening it, it would be well to lay the turf on a thin layer of fine ashes from 1 to 3 inches thick, whereas if light some fine soil is better. The turf-layer should have some loose soil or ashes by him in which to bed the turf as it is laid, and to spread thinly over it so as to fill up the crevices. The back of a rake should then be run over the turf, and when rain has fallen it should be beaten firm with a turf-beater. This may be made of a block of any hard heavy wood, as oak, elm, or ash, and may be 2½ inches thick, and from a foot to 1 foot 3 inches square, with a handle in the middle, and a cross handle in it to raise it by, as shown in *fig. 1*. This, taking a greater breadth at a time, is not so liable to beat the surface into holes, and does not cut the turf so much as a

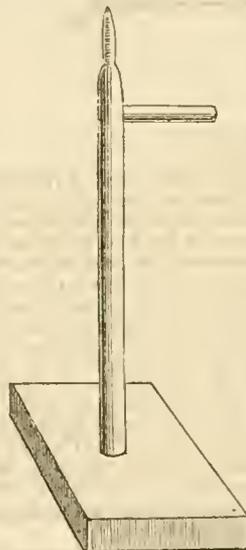


Fig. 1.

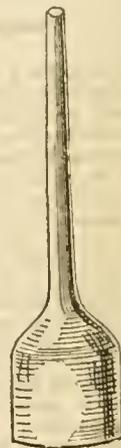


Fig. 2.

narrower beater. It does not, however, make the surface nearly so firm as the beater represented in *fig. 2*, which is

simply the stem of a tree 9 inches in diameter cut transversely and the edges rounded a little so as not to cut the surface, the upper part being made small for the hands. This is the firmest beater of any. *Fig. 3* is a smaller form of beater, with the handle fixed obliquely, and, in beating, is used in the same way as the back of a spade.

After the ground has been rendered firm by beating, a good watering will be of service if the weather be at all dry, going over the ground with a heavy roller the day afterwards. The best rollers are those of large diameter and narrow, as they can be

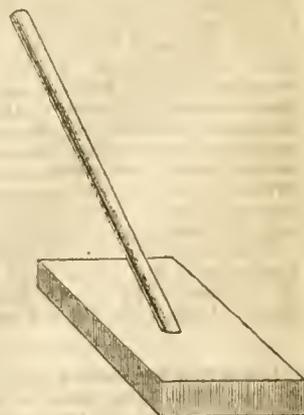


Fig. 3.

turned easily, and do not cut the grass or destroy the turf in turning. The best of all the rollers that I have tried are those with rounded edges and having a division in the centre.

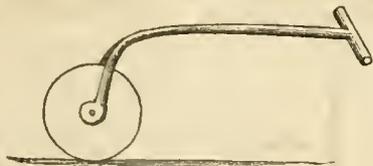
If the grass is thin a few pounds of seeds should be sown previous to rolling, selecting those suitable for the soil and situation, and one-sixth of the quantities required for sowing an acre. Of the Clovers, however, full quantities should be sown if the situation is open, only one-half if the plot is to be used as a croquet ground or for a promenade, and they should be left out altogether if the situation is shaded. The rolling will fix the seeds in the soil, and they will grow without any further trouble should the weather prove showery.

Perhaps the best of implements for paring the sod is that known as a turf-plough, common in districts where peat is



Turfing-spade.

used for fuel; failing this, one can easily be made out of an old hay knife, the handle or socket being bent upwards, and furnished with a strong shaft and cross-handle to push the implement. Before using it the turf is cut with an edging-knife into strips an inch less in breadth than the width of the



Edging-knife.

turf-parer, and crosswise at every 4 feet; and in raising the turf one man pushes the parer, and another rolls up the turf as cut, grass side inwards, and lays it on the cleared ground; but a better plan is to have a barrow at hand, in which the rolls of turf can be placed, and taken out of the way at once, instead of their being laid on one side and lifted again. These rolls should be laid on their ends in a shady place, and not more than two or three tiers high, for if laid too high one above the other they are liable to heat and become destroyed in a short time. Turf cut and rolled up in this manner will keep fresh for three weeks or a month in September, October, March, or April; in the winter months it will keep for a month or six weeks, and all the time it remains frozen, whilst from April to September from ten days to a fortnight is about as long as I have found the sods retain moisture sufficient to keep the grass fresh. The sooner the turf is laid after being cut the better. This, however, cannot always be done, therefore the above data may be of service.

In forming a lawn for a croquet ground or bowling-green, the chief points to be attained are to secure a level surface, a firm, close, fine turf, and as dry as possible consistent with a verdant lawn. The size of a croquet ground depends on that of the place, for it may be either ornamental or out of character, just as it is large or small in proportion to the size of the grounds. I have seen such lawns as small as 12 yards square, which is much too small for properly playing the game, double that space being required. A lawn 30 yards by 20, and either rectangular or oval, forms an excellent croquet ground, and so does a square of 25 yards on the side, or a circle with a corresponding diameter, but the ground may be of any size or shape, and simply a lawn, or accompanied with decorations of various kinds. Some croquet grounds are sunk and have a terrace round them with corresponding slopes, others are surrounded by banks or borders of shrubs, others by borders and beds of flowering plants, they being the ugliest of all.

There is no finer object in ornamental gardening than a fine lawn, whether it is in one broad unbroken expanse, or forming the groundwork for the artistic arrangement of beds, or the display of plants, shrubs, and trees.—G. ABBEY.

LEEDS HORTICULTURAL SHOW.—This took place on the 6th and 7th inst. The prizes were on the most liberal scale, and the Exhibition, especially of fruit, very superior. A letter informs

us, that owing to the unfavourable weather the visitors were comparatively few, and that, consequently, "the expenditure was £400 over the receipts." We hope that so wealthy a locality as Leeds and its vicinity will not allow this loss to fall upon the Committee.

PRINCESS MARY'S WEDDING BOUQUET.

EVER since the marriage of the Princess Royal, Mr. Veitch, of the Royal Exotic Nursery, Chelsea, has enjoyed the privilege of presenting the members of the Royal Family with their wedding bouquets. That honour and privilege have on the recent marriage of the Princess Mary of Cambridge been again accorded to that establishment, and Messrs. Veitch & Sons by special permission presented the Princess with a splendid bouquet, which consisted of Orange blossoms, Phalenopsis, Odontoglossum pulchellum, Calanthe, Burlingtonias, Stephanotis, white Roses, &c., the garniture being of Honiton lace. We believe Her Royal Highness was graciously pleased to accept it personally from the hands of Mr. Harry J. Veitch.

MILDEW ON APPLE TREES IN TASMANIA.

I ENCLOSE a twig and leaves of a diseased Apple tree for your inspection, with the view of eliciting from you an opinion as to what the disease really is, and the remedies you would recommend for its extirpation. This disease has become general in Tasmania, and many trees in large orchards are entirely ruined by it. The Stone and New York Pippins are very susceptible of its attacks; in fact, more so than any other varieties that I could name. Can you explain the reason why such is the case?

I have seen a plantation of Stone Pippin trees in an orchard near Hobart Town, quite destroyed by this plague. The appearance of these trees (in the summer of 1854), was as if they had been scorched by fire, and by gently rubbing the foliage between the hands it was reduced to dry dust. A microscopic examination of several diseased leaves, leads me to believe that this disease is nothing less than a form of *Erysiphe communis*, or mildew. However, this needs confirming by some of the savans in horticulture at home, or, if you will have it so, of the mother country.—JOHN OSBORNE, JUN., *The Nurseries, Pine Apple Place, Hobart Town.*

[The leaves sent are very intensely mildewed, and we think the fungus is not an *Erysiphe* (certainly not *Erysiphe communis*), but *Sporotrichum macrosporum*. Sulphur does not seem to check it much, but a washing of the trees when at rest with a brine of 8 ozs. of salt to the gallon of water acts as a preventive; and if the mildew appears when the trees are in leaf, a good syringing with lime water made by pouring thirty gallons of water on 14 lbs. of fresh lime, stirring the mixture well, and allowing it to stand forty-eight hours, and then using the clear water, checks the spreading of the fungus. Something, however, should be done to prevent the mildew occurring; and for this purpose we recommend the surface of the soil over the roots to be mulched, and other means adopted to keep the roots near the surface. We think the mildew would not be so intense if a more vigorous root-action were maintained.]

PRESERVING SOWN SEEDS.

THE destruction of seeds by birds and mice being a subject of very considerable importance to gardeners, I submit the following for insertion in your columns. I noticed in a late Number of the Journal, among the "Doings of the Last Week," by "R. F.," that he complains of birds eating his Radish seeds; and I have little doubt that, at times, also, he finds they eat other seeds belonging to the natural orders Brassicaceæ and Fabaceæ. He also complains that nets are not sufficient protection. Therefore for his information, and that of others who suffer from these garden pests, as I used to do, I can recommend them to try the following plan, having tested it in various ways, and constantly practised it here for the last five years; and I now never have to use a net or any other protection, when formerly I could scarcely keep even a crop of Turnips safe from birds or Peas from mice.

My practice is in spring to purchase 2 lbs. of dry red lead, which lasts me for the season for all the seeds of a large kitchen garden, and costs 8d. Before sowing, I put the seeds into a basin, and sprinkle just a few drops of water—sufficient only

when well stirred up just to damp every seed. I then, on the flat end of a small label, add to an ounce of seed about half a small teaspoonful of the red lead, which when stirred up is found to give a good coating to every seed. I then, to cause the seed to leave the hand readily, stir through it a little dry sand or earth.

I find that by adopting this means birds never give me the least trouble, neither does the lead in the least degree impair the vitality of the seed. Peas also, I believe, if properly coated will be quite safe from mice, and, I would be inclined to think, from pheasants also. Should any one be induced to give the plan a trial perhaps he will report the result in this Journal.—
ALLAN GOODMAN, *the Palace Gardens, Londonderry.*

LIST OF THE PAPERS AND SUBJECTS PRESENTED TO THE BOTANICAL CONGRESS.

(Continued from page 438.)

PROFESSOR E. MORREN, Liège :

1. On the influence of coal gas on vegetation.
2. On double flowers.

DR. FERD. MUELLER, Melbourne: On the cultivation of the Cinchona in the South of Europe.

The culture of the Cinchonas in the Madras Presidency, according to authentic calculations, holds out most startling prospects of remunerative yield; and there can be no doubt that Peruvian Bark-tree plantations will be among the most lucrative in any locality where these plants will prosper. The facts thus beyond dispute ascertained in India lead to the reflection how far Cinchona culture can be extended over the globe. From trials instituted in the Botanic Garden of Melbourne it is apparent that for the cultivation of Cinchonas no absolute necessity exists for the rarity of air of those mountain regions of the Andes, the proper home of these trees. On the contrary, it would seem that merely a mild warm temperate atmosphere, combined with humidity and shelter, is required for Peruvian Bark plants; and as in the Cinchona plantations of India extra-tropical Australian and Mediterranean plants do prosper, the question arises whether their cultivation could not be pursued to advantage in moist valleys on the Mediterranean shores, and in any other isothermal zone. In Victoria arrangements are made to try the growth of these plants in the extensive Fern-tree gullies which abound. For these experiments more extended facilities now exist since Cinchonas have commenced to ripen their seeds in India, and since the generosity of the Indian authorities has rendered some already available here.

Under any circumstances it appears desirable that in South Europe and elsewhere experiments should teach us as how far these plants adapt themselves to the somewhat altered influences which they will experience.

PROFESSOR PARLATONE, Florence: On the species of Cotton.

PROFESSOR PYNABERT, Ghent: On the methods of obtaining new varieties of fruit trees, and on raising improved varieties from seed.

PROFESSOR REICHENBACH, Hamburg: On some points connected with Orchidæ.

MR. RIVERS, Sawbridgeworth:

1. On the culture of fruit in unheated glass structures.

A brief history of orchard-houses, and the latest improvements in their construction and ventilation. A short account of the kinds of trees to plant in them. A new method of forming the borders for the reception of the trees. An improved mode of cultivating Apricots under glass, so that crops are insured. The culture of Cherries in orchard-houses, and the stocks proper for them, is entered into. The cultivation of the finer kinds of American Apples in orchard-houses is recommended, and that of Pears and Plums slightly touched on.

2. On dessert Orange culture in England.

This paper describes the perfect success of the culture of Oranges for some seasons past. The method by which they are made to ripen their fruit perfectly in about eight months, so that ripe Oranges may be placed on the table immediately after the late kinds of Peaches or Nectarines. The most eligible kinds of Oranges for English culture are named. The outlines of their management, and the proper temperature of the dessert Orange-house are given.

3. On raising Peaches, Nectarines, and other fruits from seeds.

PROFESSOR SCHULTZ SCHULENSTEIN, Berlin: On the presence and source of nitrogen in turf or peat, with reference to its use as a manure for plants.

The author in this paper controverts the opinion of most chemists—that plants derive the carbon and nitrogen which they contain from the air and not from the soil. "Practical experience contradicts this theory." The author proposes to use turf as a manure, from the quantity of nitrogen that it contains, and which obviates the necessity of using animal manure. The nitrogen of the turf originates from the remains

of animal life in it, such as infusoria, worms, mollusca, &c. Turf does not decompose so quickly as animal manure, but it is on that account the more efficacious. The author has not found any advantage in adding bone dust (phosphate of lime) to the turf, which, indeed, contains a sufficient quantity of that substance.

MR. W. G. SMITH, London: The Corona of Narcissus.

Basing his argument upon analogous structures in other plants, Mr. Smith considers the corona of Narcissus to be made up of a series of confluent petal-stipules, leaving the normal six stamens and six petals as in the rest of the Amaryllidaceæ.

SIGNOR TRIANA, Kew: On the manuscripts and beautiful drawings made under the direction of Mutis in his botanical expedition to New Grenada, and which are preserved at Madrid.

Signor Triana desires to draw attention to the existence at Madrid of a most interesting collection of manuscripts and drawings made by Mutis and preserved at Madrid, where they have practically been forgotten for many years. Among them are figures of species of Cinchona, &c. It is greatly to be hoped that the Spanish authorities will at least carefully preserve these valuable documents, and render them easily accessible to botanists.

MR. ROBERT WARNER, Broomfield, Chelmsford: On cool vinery Orchids.

M. HERMANN WENDLAND, Herrenhausen: Note on the culture of Palms.

The author, in this paper, insists upon the paramount necessity of supplying Palms with an abundant supply of water.

MR. TUFFEN WEST, London: On the structure of the testa of the seed of Solanaceæ.

Details a series of microscopical observations on the outer covering of seeds. Mr. West describes the peculiarity in the cell structure of the testa in different genera, and shows that such structures afford constant characters. A peculiar structure is present in the testa of many Solanaceæ. It is a form of barred tissue, constituting a support to the lateral walls of the cells; in which portion of the cells the primitive membrane is found in mature seeds to have disappeared more or less completely. The inner walls are greatly thickened by horny and even crustaceous deposit; in addition to their (usually) very sinuous outline, the edges of the inner walls are also elongated by undulation; from these edges processes arise which form a fringe having the appearance of hairs. By examination of numerous examples this structure proves to be a form of barred tissue, which, by various intermediate conditions, passes in *S. indicum* and *S. jasminoides* into a reticulate tissue. The author is very desirous to procure seeds for microscopic examination, the results hitherto obtained promising to possess interest and value in proportion to the extent to which they are systematically carried out.

DR. WIGHT, Reading: On the phenomena of vegetation in the Indian spring.

Dr. Wight offered a suggestion towards explaining the difficulty in accounting for the sprouting of trees during the hottest and driest months of the year, at a time when the heat and drought would seem enough to wither up vegetation. It is a phenomenon often observed, and always with wonder, but one which may, he thinks, be accounted for on the same principles as the swelling of the buds and renewal of spring vegetation in higher latitudes—namely, by change of temperature stimulating the flow of sap rendered sluggish by previous cold. In the high latitudes, where the cold is often intense, the susceptibility of plants to heat becomes so acute that the rise of only a few degrees of temperature above the freezing point sets the circulation in motion, especially when the soil in which the roots are distributed is still unfrozen, and permits absorption by the rootlets. Here the action of the roots and stem are simultaneous through the rise of temperature of the air equalising that of the soil in which the roots are distributed, permitting freer circulation to take place, and with it a renewal of the operations of vitality and growth.

Applying this principle to tropical vegetation, we must bear in mind that, owing to the high range of temperature in which the plants habitually grow, their susceptibility to variations of temperature is at the minimum, so that it is not until a considerable rise has taken place that the effect becomes obvious. Again, as in the other case, synchronous action between the stem and roots is necessary. "The hottest and driest month of the year" is preceded by the wettest and coldest, during which the soil is first saturated with moisture and then cooled by subsequent evaporation to a temperature considerably below that of the air. Then it is that vegetation in arboreous deep-rooting trees flags until renewed by the heat of the advancing season restoring the equilibrium between the roots and branches. Then indeed tropical vegetation in all its glorious perfection is seen. These are the circumstances in which a Bamboo shoot can almost be seen to grow, and its progress marked from hour to hour at the rate of nearly a foot a-day, or even more than that.

This principle of synchronism between the above and below-ground portions of arboreous plants, carefully applied, will, the writer apprehends, be found applicable to the explanation of several apparent anomalies presented by the renewal of vegetation after the annual

rest, and in the hands of ingenious horticulturists may, he thinks, be turned to good practical account.

Mr. WILLS, Huntröyde Park, Burnley: On sports produced from Mrs. Pollock and other Pelargoniums.

The author is of opinion that the varieties of variegated plants cannot be perpetuated from seed, but only by propagation of sports.

ROYAL HORTICULTURAL SOCIETY.

JUNE 14TH.

COMPETITION FOR PRIZES OFFERED BY FELLOWS.—The subjects brought forward in competition for these prizes constituted a special show, which, though neither very brilliant nor extensive, was, nevertheless, of considerable interest. A greater proportion of flowering plants and cut blooms would have rendered it much more attractive.

THE PRESIDENT'S PRIZES.—The first prize, offered by the Duke of Buccleuch, for the best nine plants sent out in 1865, was taken by Messrs. Veitch, with *Adiantum colpodese*, somewhat resembling *A. capillus-Veneris*, but with the young fronds tinged with copper colour; *Verschaffeltia splendida*, a beautiful Palm; *Alternanthera spatulata*, with red foliage of various shades, and which if sufficiently hardy may be useful for edgings, but it is a native of Brazil; *Peperomia maculosa*, with thick, silvery-veined, concave leaves; *Dieffenbachia Weirii*, with deep green leaves, conspicuously blotched with pea green; *Draecena nigrescens*, with very dark foliage; *Bertolonia pubescens*, with olive green leaves broadly edged with bright green; a Juniper from the north of China; and *Gymnogramma flexuosa*, an elegant kind, with a shining black rachis. The second prize, which in this as in the other classes was added by the Council of the Society, went to Mr. Bull, who exhibited *Verschaffeltia splendida*, *Draecena nigrescens*, the white-variegated variety of *Selaginella Martensii*; *Terminalia elegans*, with leaves resembling those of *Pavetta borbonica*, but trifoliate; *Coprosma Baeriana variegata*, with obovate leaves variegated with cream-colour; *Cycas plumosa*, with rush-like foliage; *Saurauja sarapigiensis*, with handsome leaves having reddish brown midribs; *Ancuba japonica femina elegans*, with the foliage marked with creamy blotches, sometimes occupying three-fourths of the entire leaf; and *Asplenium myriophyllum*, a slender species, with finely-divided fronds.

The next class was for the best nine plants sent out in 1864 and 1865. Here Mr. Williams was first with *Anthurium Scherzerianum* and *cordifolium* or *magnificum*; variegated *Pampas Grass* presenting much the appearance of *Gardener's Garters*; *Calamus Imperatricis Marie*, a graceful Palm, with ivory spines on the under side of the petiole; variegated *New Zealand Flax*; a good plant of *Agave Schidigera*; *Phalenopsis Luddemanniana*, with nine blooms; *Dieffenbachia Barauquiana*, with white leafstalks, and *Draecena Cooperi*. Messrs. Veitch were second with *Dieffenbachia Weirii*; *Draecena nigrescens* and *Cooperi*; *Anthurium cordifolium* and *Scherzerianum*; *Cyrtipedium Pearcei*, with two blooms, having short tails; *Gymnogramma Pearcei*, a graceful greenhouse species; *Pandanus ornatus*, with glossy green leaves varying in intensity of colour according to their age; and *Prunnopitys elegans*, a Conifer having glossy Yew-like foliage. From Mr. Bull, to whom an extra prize was awarded, came *Zamia cycadefolia*, *Anthurium cordifolium*, *Pandanus ornatus*, *Draecena Cooperi*, *Maranta Van den Heekei*, handsomely banded with white; *Podocarpus macrophyllus variegatus*, having dark green leaves variegated with white, intermixed with others wholly white; a large green-leaved female *Ancuba*; *Zalacca Wagneri* and *Sappichlena volubilis*, with large, deep green fronds.

The first prize for single trusses of thirty-six Roses, including varieties sent out in 1864 and 1865, went to Mr. Turner; the second to Messrs. Paul & Son; and in the class for the best collection of new Roses sent out in the years just mentioned, the positions of the same exhibitors were reversed. Roses were generally not in good condition, but we remarked good examples of *Olivier Delhomme*, *Leopold Hausburg*, *Charles Lefebvre*, *Victor Verdier*, *Maurice Bernardia*, *Prince Camille de Roban*, *Gloire de Dijon*, *Exposition de Brie*, a very promising sort; *Joseph Fiala*, *Madame A. Halphen*, *Dr. Andry*, *James Veitch*, *penbarin* in colour, and *Rev. H. Dombraim*. A fine boxful of *Madame Victor Verdier* was shown by Mr. Turner; and another of *Princess Mary* of Cambridge, by Messrs. Paul & Son. This variety, about which some difference of opinion has existed, improves upon acquaintance, and when half blown is a pretty, pale rose-coloured flower.

MR. W. WILSON SAUNDERS'S PRIZE FOR EXOTIC ECONOMIC PLANTS.

The only competitor was Mr. Bull, who was adjudged a first prize for healthy plants of the following:—Alligator Pear (*Persea gratissima*), Allspice (*Engenia pimentata*), Amotto Dya Plant (*Bixa orellana*), Arrow-root (*Maranta arundinacea*), Balsam of Peru (*Myroxylon Pereira*), Bamboo Cane (*Bambusa arundinacea*), Bark of Commerce (*Cinchona nobilis*), Betla Pepper (*Piper betle*), Black Pepper (*Piper nigrum*), Black Tea (*Thea Bohea*), Cabbage Palm (*Enterpe edulis*), Cardamon (*Amomum cardamomum*), Chinese Plantain Tree (*Musa Cavendishii*), Cocoa (*Theobroma cacao*), Cinnamon Tree (*Cinnamomum verum*), Clove Tree (*Caryophyllus aromaticus*), Coffee (*Coffea arabica*), Contrayerva Root (*Dorstenia contrayerva*), Cotton Tree (*Gossypium herbaceum*), Croton Oil Plant (*Croton cascarrilla*), Cubebs Pepper (*Piper cubeba vera*), Date (*Phoenix dactylifera*), Gamboge (*Xanthochymus*

pictorius), Ginger (*Zingiber officinale*), Granadilla (*Passiflora laurifolia*), Green Tea (*Thea viridis*), Grey Bark (*Cinchona cordifolia*), Gutta Percha Tree (*Isanandra gutta*), Indian-rubber (*Ficus elastica*), Ipecacuanha (*Cephaelis ipecacuanha*), Jalap (*Ipomoea jalapa*), Latanier Palm (*Latania horbonica*), Lemon Grass (*Cymbopogon schanahanus*), Loquat (*Eriobotrya japonica*), Mango (*Mangifera indica*), Mangosteen (*Garcinia mangostana*), Manila Hemp (*Musa textilis*), Mastic Tree (*Schinus molle*), Matico (*Artanthe elongata*), Nutmeg (*Myristica moschata*), Ordeal Bean (*Physostigma venenosum*), Palissandra Wood (*Macharium firmum*), Papaw Tree (*Carica papaya*), Paraguay Tea (*Ilex paraguayensis*), Patchouli Scent Plant (*Pogostemon patchouli*), Red Bark (*Cinchona succirubra*), Rice (*Oryza sativa*), Sarsaparilla (*Smilax sarsaparilla*), Soap Berry Tree (*Sapindus saponaria*), Sugar Cane (*Saccharum officinarum*), Sugar Palm (*Arenga saccharifera*), Sweet Potato (*Batatas edulis*), Sweet Sop (*Anona squamosa*), Tallow Tree (*Stillingia sebifera*), Travellers' Tree (*Ravennalia madagascariensis*), Vanilla (*Vanilla aromatica*), Violet Sugar Cane (*Saccharum violaceum*). Besides the collection of the above plants shown by Mr. Bull, a number came from the Society's garden. Among these were Sugar Cane, Tobacco, Peppers, Ginger, Peraviatu Bark, Gamboge, Lemon Grass, the Candle Tree, the Chocolate Tree, Paraguay Tea, and the Alligator Pear.

LADY DOROTHY NEVILL'S PRIZE FOR EXOTIC FERNS.—The best ten came from Mr. Williams, of Holloway, and consisted of handsome specimens of *Cyathea dealbata*, *Dicksonia antarctica* and *squarrosa*, and excellent examples of *Cibotium princeps*, *Lomaria gibba*, *Todea africana*, *Woodwardia radicans*, *Gleichenia semi-vestita*, and the Bird's-nest Fern (*Neottopteris vulgaris*). The last was in splendid condition, having fronds from 3 to 4 feet in length, and of which the bright shining green formed a striking contrast with the purplish brown midribs. To Mr. Bull's ten, which were second, were fine trees of *Dicksonia antarctica*, and *Alsophila excelsa*, *Cyathea*, *Alsophila australis*, *Marattia elegans*, *Dicksonia cinnamomea*, and *Gleichenia semi-vestita* and *microphylla*. Mr. C. Walton, Manor House, East Acton, had an extra prize for smaller plants, among which were *Pteris tricolor*, with a young frond finely coloured, several *Adiantums*, *Pteris serrulata*, the long, narrow, grass-like divisions of the fronds of which are so useful for floral decorations; *Pteris tremula*, *Woodwardia radicans*, and the glossy green *Cyrtomium falcatum*.

MAJOR R. TREVOR CLARKE'S PRIZE FOR BROMELIADS.—This was awarded to Mr. Williams, of Holloway, who was the only exhibitor. His collection contained the variegated *Ananassa*; *Guzmania grandis*, with pale green leaves mottled with dark green; *G. tricolor*; several *Nidulariums*, two of the prettiest being *N. innocenti*, and *Meyendorffii*, both with red bracts, and the former having the reverse of the leaves of a metallic dark purple; two species of *Hechtia*, with the spiny leaves gracefully curving downwards; *Puja recurvata*, a handsome plant; and *Dyelia remotiflora*.

Prizes for Tropical and Sub-Tropical Fruits, Strawberries in Pots and Filmy Ferns, were offered respectively by Mr. W. Wilson Saunders, Dr. Hogg, Mr. G. F. Wilson, and Mr. Alexander Scratton, but no competitors came forward.

LADIES' PRIZES FOR IN-DOOR PLANTS.—These were offered by the proprietors of the *Gardener's Chronicle*, and, as was the case two years ago, the first was awarded to Mrs. Dombraim, Deal, for a good healthy plant of *Adiantum canestum*, which had been grown upwards of two years in a sitting-room where gas is burnt. The second prize went to Mrs. Marshall, The Firs, Enfield, for *Dyvalia canariensis* in excellent health, though it had been kept five years in a sitting-room. Miss Fisher, City Road, took the third for another *Hare's-foot Fern*, which, it was stated, had been kept in a room nine years, and it, too, was well grown and in excellent condition. From Viscountess Doneraile came *Aechmea fulgens*, *Aspidistra lurida variegata*, and *Draecena Cooperi*, each of which had been kept in a drawing-room in London since the beginning of April; for Mrs. Hooke, Fulham, *Cyrtipedium barbatum majus* with six good blooms, and kept seven weeks in a drawing-room; and from Miss Williams, Highgate, *Draecena grandis* and *Rhynchospermum jasmoides*, each of which had been six weeks in a room; also, *Rhaphis hamilis*, ten weeks. Mrs. Wynt, Upper Tooting, exhibited *Louicea arce-rietanata*, trained on a flat trellis to form a window-screen; and the same *Honeysuckle*, balloon-trained, and intermixed with *Maurandya Barclayana*, came from Lady Adaliza Norman, Campden Hill. Mrs. Hill, Highgate, contributed two plants of *Bignonia insignis*, which had been growing for fifteen months in a window facing the north, and a plant of *Richardia aethiopica*, with excellent foliage, which had been six months in a similar position. Miss Baring, Surbiton, had a silvery-leaved *Begonia*; and Miss Bannerman, Upper Tooting, a window-screen of German Ivy, and ornamented with *Roses*, *Rhododendrons*, and other cut flowers, and Ferns at the base.

MISCELLANEOUS.—Extra prizes were awarded to Mr. Burley, Albert Nursery, Bayswater, for Palms, *Draecenas*, and *Alpinia notans*; and to Messrs. E. G. Henderson for tricolor and variegated-leaved *Pelargoniums*, and for novelties, which, along with other subjects, are separately noticed in our Floral Committee report. From Messrs. Veitch came *Lilium auratum*, producing semi-double flowers, and from Mr. Bull *Maranta splendida*, *Lindenii*, rose-picta, and *Bertolonia margaritacea*, all remarkable for the great beauty of their variously-marked leaves. Mr. Williams, Holloway, contributed variegated *Orchids* in beautiful condition, especially *Anactochilus Lowii* and *intermedia*; Mr.

Salter, double Pyrethrums, exhibiting a great variety of colour, and approaching to Chrysanthemums in size and regularity of flower; also German Irises and very fine herbaceous Peonies. Mr. Salter received extra prizes for these and for the Pyrethrums, and a similar award was made to Mr. Turner for a dwarf double early-flowering Pink, called Rubens, which was stated to be excellent for forcing. Mr. Turner and the Rev. G. Cheere, Papworth Hall, also exhibited good Pinks of the florists' varieties. Large fruit of the Castle Kennedy Fig were shown by Mr. Fowler; and other subjects exhibited consisted of several handsome plant-cases from Messrs. Barr & Sugden, for which an extra prize was awarded; drawing-room ornaments in glass and china from Messrs. Melliship & Harris, Westbourne Grove; and wedding bouquets from Messrs. Lucking Brothers.

SUB-FLORAL COMMITTEE.—There were not many subjects for examination; probably, the next Tuesday meeting being so near at hand, many plants were reserved for that occasion. Messrs. Jackman, Woking, exhibited seedling Clematises in five varieties—viz., Jackmannii, which had been awarded a first-class certificate in 1864; Magnifica, a dull red and purple flower; Velatina purpurea, to which a first-class certificate was awarded, a bright plum or reddish purple colour, and distinct; Alexandra, a lighter purple; and rubella. These flowers were not equal to the first seedlings sent out by this firm. From Mr. W. Barnes, Camberwell, came Azalea Her Majesty, a sport from Criterion, distinct in colour, a pale silvery grey with occasional pink stripes, the back petals distinctly spotted; flower of good substance—a first-class certificate was awarded it. Messrs. Perkins, Coventry, sent Verbena Shakespeare, bright orange scarlet, very fine truss, with very large pips, having a yellow centre. We have seen no flowers of Verbena equal to this in size. It will be useful as a show flower, but we should question its properties; as a bedder, it will be a universal favourite and be much admired. It received a first-class certificate. From Mr. W. Thompson, Ipswich, came cut spikes of Pentstemon glaber, a bluish and pale lavender colour; also Eriogonum umbellatum, producing clusters or umbels of small pale yellow flowers. Messrs. Henderson, Wellington Road Nurseries, sent a collection of novelties, which were entered in the Miscellaneous class, but which they requested should be inspected by the Committee. In this collection were several tricolor-leaved Pelargoniums, among them the old favourite Lucy Grieve and Sophia Dumaresque, the latter very brilliant in its colours; also, six other unnamed seedlings. One with very circular foliage, with an intense dark zone, relieved by brilliant colours, promises to be of considerable merit; but the number of seedlings of this section of the Zonales makes it difficult to select specimens entirely distinct and novel, there is a great similarity, and Mrs. Pollock has not yet been eclipsed. A large pan of the variegated Poa trivialis, which was very beautiful, among the best of the variegated Grasses, was exhibited by the same firm—it had received a first-class certificate at a previous meeting; also two forms of variegated Stella Pelargonium, one a sport with yellow variegation, and orange scarlet flowers; the other white-variegated, with deep red flowers. There seems to be no limit to variegated Stellas; we have heard of five or six, and have seen better than those exhibited. Messrs. E. G. Henderson likewise contributed Santolina incana, a plant used for edgings, and having a strong aromatic scent; a variegated Zonale Pelargonium, with broad white edges to the leaves; a double Zonale Pelargonium, called Gloire de Nancy, with deep carmine flowers, the best double Zonale yet exhibited, but by no means an improvement on the glorious trusses of the single scarlets; flowers of four seedling varieties of Clanthus Dampieri, one a bright red with dark red markings in the place of the usual black spots at the centre of the flower—this appeared a very distinct variety; and some plants of the new variegated Maize or Indian Corn, with very handsome foliage. Should this plant retain, when planted out in the border, its variegation through the summer, it will prove very ornamental.

We understand that at the fortnightly meeting to be held this day, Mr. Anderson, of Meadow Bank, Glasgow, will exhibit a magnificent spike of *Odontoglossum Pescatorei*, bearing upwards of sixty flowers, and which has been in blossom for the last three months.

A NATURAL BAROMETER.—Mr. Wm. McClathy, postmaster of Katesville, in West Middlesex, N.A., says, "As I know that you wish to give every information that would be of use to your numerous readers, I send you some remarks I have made on the changes which have taken place in the atmosphere for forty years past. I first observed in the rows of young Weymouth (or White Pine) trees in my nurseries, that the last year's growth and all the leaves or spines stand straight upright in dry weather, and on the least change to rain or snow the branches bend and the leaves fall back and appear in a dying state, even before the snow or rain commences. When a change comes for dry weather, they all recover again, and remain so until the next change is going to take place, giving the farmer warning in time for him to prepare for it. The White Pine (*P. strobus*) grows in this neighbourhood spontaneously. It is

easily transplanted, if removed when about a foot high. It soon makes a beautiful tree, and might be called the Farmer's Barometer."—(Canada Farmer.)

FRAGMENTS ABOUT THE INTERNATIONAL HORTICULTURAL EXHIBITION.

AZALEAS.

If anything could more strongly than another show the extreme absurdity of the present system of exhibiting Azaleas—a system against which for years I have entered my humble protest, it is the sketch given in a late number of THE JOURNAL OF HORTICULTURE of the interior of the Exhibition tent. And yet one knows that amongst the marvels of cultivation there were perhaps no plants in the whole Exhibition that bore greater testimony to the skill, care and continued attention of the gardener than did these masses of bloom; but surely these qualities are wasted in producing what I cannot but regard as deformities. Nearly every one says the same, and yet on the same track we go year after year. What is to be the remedy? Either one of two plans: Either the schedules must state that the plants are to be grown as naturally as possible, or else some successful cultivator must be daring enough to run the risk of losing his prize, and send in a collection naturally grown. This is what has occurred with Fuchsias. They used to be as much crinolined and twisted about as the poor Azalea was; but one day Mr. Cannell, to his credit be it said, entered the lists with a set not nearly so large as those of his competitors; and the Judges, equally to their credit be it said, recognised the courage and rightness of the attempt, and awarded it the first prize. Since then Fuchsias have been uncrinolined; and now that the veritable crinoline is going out of fashion and giving way to the train, will our great Azalea-growers follow in the wake, and give us plants equally well grown but not so much cramped?

The great contest of the day lay in the class for eight plants between Messrs. Turner and Veitch; but the Judges had, I should imagine, little difficulty in coming to the decision at which they arrived, taking the present system as their model, for certainly never were such plants, I think, staged as those contributed by Mr. Turner. His plants were Perryna, Sir Charles Napier, Variegata, Criterion, Cheloni, Illustria nova, Barclayana, and Ivcryana. In none of these plants was there a single gap. Every portion was well filled up with bloom, and the individual flowers were also large and of good quality. Messrs. Veitch and Sons' plants consisted of Carnea superba, Trotteriana, Cheloni, Magnificient, Cedo Nulli, Juliana, Extranei, and Ivcryana. A third collection from Mr. Rhodes was of a very inferior description. In the class for single specimen Azaleas, Mr. Turner was first with a magnificent plant of Etoile de Gand, a most beautifully marked variety, and in every point a perfect picture. Messrs. Veitch were second with a good plant of Cheloni; and Mr. Carson third with a fine Siensis.

In the very interesting collection of twenty plants Mr. Turner was also first with a varied collection containing some of the newest and finest varieties in cultivation, including Louise von Baden, Madame Ambroise Verschaffelt, Flower of the Day, Duchesse Adelaide de Nassau, &c. Messrs. Ivory & Son, of Dorking, took the second place. Their collection included some of the finest of their own varieties, as well as those of foreign introduction. Messrs. Lane & Son were third, and Messrs. Lee fourth. Amongst one of the improvements that might have been made in the arrangement of the Exhibition, I think that the sinking of these pots in the earth, so as to have formed a bed, would have been a very great one, somewhat in the manner in which the small plants of Rhododendrons were treated.

It was a wise and considerate measure to make classes which should comprise smaller growers, and so give them some encouragement; and hence very finely grown collections, which would not have made their appearance had these classes not been made, were brought forward, and in many instances the exhibitors received well-merited prizes. Thus, not only do we find that the Messrs. Lee, &c., were prizetakers, but that Messrs. Dobson & Son, of Isleworth, Mr. Baxendale, of Guildford, and Mr. Drummond, of Bath, were also successful, these being quite new names for this class of plants. Nor were the amateurs behind; some of their collections were indeed nearly, if not quite, equal to those of the professional growers. In the class for eight plants Mr. Carson, gardener to W. R. G. Farmer, Esq., of Cheam, had Formosa superba, Magnifica, Murrayana, Exquisita, Malvina, Speciosissima, Triumphans, and Broughtoni; and no exception could be taken to any of the plants, so well were they grown and flowered. Mr. Morse, gardener to T. Canning, Esq., of Bristol, was second with Gledstanesi, Etoile de Gand, Empress Eugenie, Gem, Criterion, Speciosissima. His plants were differently trained from those of some of the other growers, being more pyramidal, but still having a great deal too much stiffness. Mr. Penny, gardener to H. H. Gibbs, Esq., and Mr. Peed, gardener to Mrs. Tredwell, two well-known names at our exhibitions, were respectively third and fourth. The same considerate measure was adopted in this class also, and had the effect of bringing forward names hitherto unknown at our metropolitan exhibitions. In the class for six Mr. Chalmers, gardener to E. J. Coleman, Esq., took the first prize with Præstantissima, Rosea punctata, Criterion, Gem, Læterina superba, and Perrynna; Mr. Wheeler, gardener to J. Philpott, Esq., of Stamford Hill, was second with Magnifica, Gledstanesi formosa,

Juliana, Criterion, Symmetry, and Iveryana; Mr. Ingram, gardener to J. J. Blandy, Esq., of Reading, third with Glory of Sanninghill, Iveryana, Præstantissima, Rosea punctata; Sir C. Napier, and Criterion. Again, for three greenhouse Azaleas, Mr. Kaile, gardener to the Earl of Lovelace took first prize; Mr. Kemp, gardener to Earl Percy, second; and Mr. G. Wheeler, gardener to Sir F. H. Goldsmid, third prize. It will thus be seen from how many quarters exhibitions of this lovely and attractive spring flower were forwarded, contributing as they did so much to the splendour and beauty of the Exhibition.

Something has been said as to the manner of judging, and complaints made about it. I have had some little experience in such things, and I can only say that seldom have I seen fewer of what I believe to be mistakes; and that the plan adopted of breaking the Judges up into small knots instead of having a crowd of decorated gentlemen bustling one another, as at foreign shows, is infinitely to be preferred. I speak thus with entire disinterestedness, for I had nothing to say to it in any way. I pitied indeed many of them who had to hunt for this or that collection; but it was not to be wondered at that this should have been the case where so large a collection of subjects was brought together, and where, moreover, they were arranged more for effect than for the comfort of the Judges. Had it been imagined that the Exhibition would have been kept open for so long, it would have been better to have done as they do on the Continent—allotted Monday afternoon for the judging, and the plants to have been put in their places on Tuesday morning; but I would repeat it, that on the whole the adjudication was as well managed as could reasonably have been expected.—D., Deal.

COMPOST FOR FLOWER GARDEN—THINNING FLOWER-BUDS OF CLIMBING ROSES.

Is the refuse of a garden (leaves, grass, &c.), decomposed as good a manure as I can have for general use for flower-beds, or would it be the better of having stable manure mixed with it? Also, will it decompose more quickly if I keep it damp and mix lime with it occasionally to prevent its giving out any smell? I may remark that the heap is kept under trees where very little rain can reach it.

Will leaving many flower-buds on Roses prevent their growing? I allude to some climbers I have which I want to grow as much as I can this season to cover a space, and they seem making little headway, which I attributed to their having a good many buds on them; so, shall I remove them or allow them to remain and flower?—F. J.

[Grass and leaves mixed together make an excellent compost for a flower garden, and will decompose more rapidly if moderately damp. We would rather cover the heap slightly with earth than mix lime with it to keep down the smell. For Roses and other plants that like rich food, a mixture of horse or pig dung along with the above compost will be beneficial, and even in any circumstances a little will improve your compost; but for flower-beds in general, decayed tree leaves and grass do very well. We advise you to thin the buds of your climbing Roses that you wish to grow vigorously.—Eds.]

BIRMINGHAM ROSE SHOW.—The prize list for this great midland gathering, which is to be held on the 5th and 6th of July, differs in but few particulars from last year's. The most striking alteration is in the nurserymen's class, and consists of the reduction of ninety-six varieties, single trusses, to seventy-two varieties—a decided change for the better, and one which will be certain to produce an improvement in the quality of the stands shown in competition for the premier prize of the Exhibition. No. 5, twenty-four varieties, single trusses, and No. 6, twelve varieties, three trusses, are reserved for nurserymen resident in the counties of Warwick, Worcester, or Stafford only. These, as well as the other purely local divisions, are yearly increasing, and now form a very important feature. To local residents they must be particularly interesting and instructive, for in the local stands information must be sought as to what varieties have proved most available in the neighbourhood, and at the same time comparisons may be made between the appearance which the same variety presents as grown in widely different localities, under circumstances of climate, soil, &c., totally dissimilar. Bouquets have hitherto always been too large and formal. The Committee, with a view to make them smaller and less crowded together, intimate that it is essential that they should be suitable for the hand, and suggest the free use of Noisette, Moss, and Teascented Roses in a just-opening condition. We trust that on this occasion the weather will be more propitious than last year, for in consequence of the exhibition days having been

wet, the expenses exceeded the receipts, and the balance had to come out of the pockets of the Committee. We learn with surprise that out of 300,000 inhabitants, only 200 subscribe to the Rose Show. This should not be.

PEAT CHARCOAL FOR PRESERVING FRUIT.

FINDING so much pleasure in the perusal of your Journal, and having experienced your courtesy as a correspondent on more than one occasion, I am tempted to offer my little mite of experience for the good of other readers.

Having year after year used without success every care to keep Apples fresh till spring, it occurred to me last autumn that I would try packing them in peat charcoal. The result has been so eminently successful that I had my Apples crisp, fresh, and juicy, as if pulled off the tree, till a few days ago when I had my last dish. I used to keep them till April or even May, but they were shrivelled and insipid. The kinds I usually put by are Ross Nonpareil, and an Apple of which I do not know the name, but it closely resembles the Ribston Pippin. I lost some by packing too much in the boxes, or by piling the boxes above one another to economise space.

It strikes me that collectors of foreign bulbs, &c., would find the charcoal a great preservative against decay from the moist sea air. I have had presents from the Cape of bulbs, and always found the roots so damaged as to be of little value. The only objection to the charcoal for Apples is that they must be washed after it.—A SUBSCRIBER.

THE JOURNAL OF THE ROYAL HORTICULTURAL SOCIETY.

Edited by the Rev. M. J. BERKELEY, F.L.S., &c. New Series. Vol. I. Part 2.

THE Society commenced publishing a Journal in 1846, and continued doing so until 1855, when financial weakness obliged its abandonment. That weakness being removed, and the Council being conscious that the Fellows were entitled to have not only a record of the Society's proceedings, but of the discoveries and improvements in horticulture effected in other countries, have revived the Journal, and it bears evidence at once that its preparation is confided to an editor not only well known for competency, but, which is as important, judicious and painstaking.

There are in the two parts which have been published a very satisfactory combination of the practical and scientific communications; the practical are not trivial, and the scientific are not too elaborate—all contain information useful to plant-cultivators.

As an example of the practical contents we extract the following:—

“ON *PODOPHYLLUM EMODI*. By Mr. Thomas Shortt.

“*Podophyllum Emodi*, Wallh.* (*P. hexandrum*, Royle), is found in Sikkim, Kumaon, and Cashmir, at an altitude varying from 6000 to 14,000 feet, and is one of the earliest spring flowers of the Himalayas. Particular interest is attached to this plant from its first appearance above the ground to its decay. The first growth of the plant is very curious, the centre of the leaf appearing first; the leaflets or segments of the leaf are plicate and folded downwards on the petiole in bud, and the whole plant has much the habit of *Eranthis hyemalis*†. After two or three leaves are developed, the flower appears in the axil of the upper leaf, and, to a casual observer, is much like that of *Helleborus niger*, though smaller. When first opened it is of a delicate blush, and when fully developed is of a pure white.

“The flowers are rather fugitive and, if fruit (which is both interesting and ornamental) is required, must be carefully watched and artificially impregnated as soon as the pollen is exposed. This generally takes place on the morning of the first day. A very few days will show when the fruit is set, as rapid increase of size indicates success. The fruit remains green to within a few days of ripening, when it is suffused with a delicate pink, which gradually changes to a deep scarlet, covered with a delicate bloom. A well-matured fruit is drooping, egg-shaped, and flattened, $3\frac{1}{4}$ inches long and $1\frac{1}{2}$ inch thick, the stalk being inserted at the broad end. It is pulpy, tasteless, filled with numerous seeds about the size of wheat when in a milky state, and of somewhat the same form, which are attached to a broad fleshy lateral placenta which occupies the centre of the fruit.

“The fruit is eatable, like that of *P. peltatum*, whose leaves, however,

* Beautiful specimens of this plant in fruit were exhibited at one of the scientific meetings by Mr. Shortt.

† This and one or two other sentences are borrowed from Hooker and Thomson's 'Flora Indica.'

are poisonous and the root a drastic purge; it will hang one or two months. That of *P. peltatum*, which is known in the United States under the name of *May Apple*, is of a peculiar light green colour, and is intensely acid. It is occasionally used as a substitute for Lemon.

"No plant that I am acquainted with is more impatient of removal or division than *Podophyllum Emodi*. I was some years before I discovered the cause. On potting some seedling plants two years old, I found only two thread-like roots from 2 to 3 feet long, and when these were shortened before repotting, no progress was made by the plant that year. When, however, the roots were unbroken, rapid increase of size took place.

"To grow the plant in perfection, it should be planted in good peat and loam in an open but sheltered situation and never disturbed. If moved, it will not bear fruit the following year. It is perfectly hardy, and was introduced in 1845."

The scientific contributions are too lengthy for extraction, but the combined results announced in two of them are of great interest to plant-cultivators, and command from us an epitome. As long ago as 1900 years, Varro records that the Roman husbandmen supplicated a goddess of their polytheism to preserve their corn and trees from *rubigo*. This was that disease which we know as the rust, for Virgil particularises *rubigo* as afflicting the straw. We could quote other authorities in proof that it was then the received opinion that the *rubigo* of corn was identical with the parasitical diseases of trees, but it is only now that the truth of this opinion is demonstrated.

It has long been an observation that where the Berberry abounds there mildew commonly affects the Wheat crops; and years since we were shown a Berberry bush in a hedgerow, and a breadth of Wheat affected by mildew extending across the field from that bush, whilst no other part of the field was so affected; and we remember a Berberry-abounding village in Norfolk bearing the unenviable title of "Mildew-Rollesby." That the mildew on Wheat and the parasitical fungus afflicting the Berberry are identical has been denied by excellent authorities, and fungologists have sustained the denial by naming the Wheat fungus *Puccinia graminis*, and the Berberry fungus *Æcidium Berberidis*, but M. De Barry has shown that it is one and the same plant, in different stages of development; in one stage it will only vegetate on the Berberry, and in the other only on the culms of Wheat and other Grasses. Nor do the discoveries tending to reduce the number of fungal genera stop here, for M. Oerstead has given evidence that, also in different stages of development, the fungus *Podisoma Sabinae*, which lives on the Savin, *Juniperus sabina*, is the same as *Rostelia cancellata* which attacks the leaves of Pear trees. Nor do these discoveries stop here, for M. De Barry has shown that *Uromyces fabae* which infests the leaves of the Bean is only another form of *Æcidium leguminosarum* found on the same plant.

A PEEP AT THE WOODS IN ODD PLACES.—No. 7.

CUBA.

(Continued from page 442.)

HAVING heard the band play, let us leave the sweet odours wafted about the square opposite the palace of the Captain-General, and proceeding on our rambles take a look around us as we wend our way towards the fruit market, a peep at which will amply repay our curiosity, and afford us some pleasure. Before proceeding on our way, what, we must ask, can those strange spider-looking things on two wheels be? They are called *volantès*, and are the national passenger-conveyance, being used in the place of our cabs, though, of course, the four-wheeled hackney carriage is likewise common; but this is the native trap, and although presenting such an extraordinary appearance to an English eye, is exceedingly comfortable and easy to ride in. I will, however, try to give you some notion of them, for they are worth mention, and some of the private ones are most gaudily got up, though they do present much of the appearance of a huge gilded and burnished spider. Two high but light wheels, on their axle-tree, are placed at the extremities of two excessively long springy shafts; between these, suspended by straps and C springs, is hung rather than fastened, but yet sufficiently firmly fixed to prevent too much swinging motion, a body somewhat resembling that of a Hansom cab, but lower and longer, and the back of which is about 3 feet from the axle. In this lies, rather than sits, the passenger stretched at his ease, with his feet resting against a little iron rail placed inside the dash-board, whilst he is protected from the sun or rain by the hood overhead. In the shafts, with his

tail fully 4 feet beyond the board, is a horse or mule, as the case may be; and on his back, in a most preposterous saddle, with a very high pommel and crup, is seated the driver, often a nigger, dressed in a tall hat, jacket, breeches, and huge boots, the heels of which are armed with as huge spurs, and carrying in his hand a formidable whip. The length of the whole affair, including the horse, will be from 20 to 25 feet; and as the streets are very narrow, it is requisite to go to the intersection of two streets to enable the driver to turn his vehicle. Those belonging to private persons of means are, as I have said, often very expensively got up, most of them silver-mounted, both as to the *volantè* itself, and the harness, and sometimes the ornaments are of silver gilt. For such vehicles two horses are used, one being in the shafts, and the other ridden by the postilion, who leads the horse in the shafts.

If, however, we stop so long looking at these, to English eyes, extraordinary conveyances, we shall never reach the fruit market, to which place we are bound; only as we are just opposite *Domiuco's*, we will step in, and sit down to rest ourselves, and look about us for a few minutes, whilst we take a little refreshment before we walk on, since the weather is extremely hot, and we have some distance to go beyond the walls of the city. *Domiuco's* is a restaurant, and really a most beautiful and delightful place, where one may obtain any delicacy he wishes for, from English ale (here a most expensive luxury), to Guava jelly, manufactured on the premises; so call for what you like—coffee or claret, champagne or chocolate, soup or sardines, cigars or cakes, hobnobs or Bananas, and whilst you are resting, I will try to give you some notion of the place. In a narrow street not more than 12 or 14 feet wide between the curb stones, and with no footpath to speak of, for that in any street of the city is seldom, indeed scarcely ever, a yard in width, and where the houses run straight up, presenting a most gloomy prison-like appearance, stands this palace of Epicurus, cool, fragrant, and pleasant. We enter by an arched gateway into a somewhat spacious hall. The floor is of black and white marble; the roof, which is beautifully painted and gilded, is arched, and supported by a number of marble pillars, from the capitals of which spring the groins of the arches. In the centre, as in most of the large houses of Havana, is a square open to the sky, and likewise paved with marble, in which is an elegant fountain; planted around the pedestal of which, and mingled with lovely specimens of coral and effigies of water sprites, are Ferns, small Palms, especially the Palmetto, and wax-leaved tropical plants, most exquisite Moss filling up all the interstices with the greatest luxuriance; whilst in the basin below surrounding the fountain, and playing about in and on the rockwork at its base, swim with much apparent enjoyment and appreciation of the jolly company around them, numerous gold and silver fish. In the hall and square stand a number of iron-framed, marble-topped tables, around which may be seen seated various groups, silent or noisy, in sober conversation or sprightly chat, consuming the various dainties here obtainable. These persons are composed of various nationalities, generally showing by their manners, tones of voice, and action, as well as language, to what flag they may have the honour to belong. Here are to be seen the lively, chatty Frenchman; the sombre, stately Don; the phlegmatic Dutchman; the swaggering, boasting Yankee; and last, though decidedly not least, the conceited Englishman, who, if not in so many words, at least in manner, treats the natives of whatever country he may be in, as inferior creatures; in fact, Englishmen generally, in their own estimation, are not foreigners, whether in the Arctic regions, the temperate or the torrid zone, amongst Esquimaux, Black-foot Indians, Europeans, Ashantees, Hindoos, or Madagascans; but they all, at any rate by far the greater part of them, seem to consider that they have a universal kingdom, and are, like Robinson Crusoe, "monarchs of all they survey."

Our own party in this hall was by no means an uninteresting one, being comprised of seven persons, representing five distinct nationalities and one colony, each being fairly, indeed favourably, represented. Of Englishmen, there were the captain of our vessel and myself; from New Brunswick, a tall, elegant, exceedingly gentlemanly man, who formerly held a high position under the crown in the colony, and was of decidedly Tory and aristocratic tendencies; from France, an ex-consul, thoroughly French, and a thorough gentleman; from the Southern States of America, a large cotton-press and plantation owner, belonging to New Orleans; from Prussia, a tall, fine-looking man of about thirty, who had fought on the Southern side in the late American war, and had in a most courageous manner saved a large amount of treasure, which the Federals

attempted to seize and appropriate; and from Denmark, an enormous merchant captain, who had sold his vessel, and was returning to Copenhagen. He was a man of immense size and strength; his good humour and fun were equal to his bulk, and although acquainted with many Danes, Swedes, and Norwegians, I have never met with one so completely the impersonation of one's idea of the old Norse Viking (*i.e.*, in appearance only, for his body was large and powerful, his heart was truly womanly, noble, tender, firm, soft, and true), robber, pirate, and conqueror, or of the grand old Saxon mythological deities, Thor or Woden. I can only say we were a very merry jolly party.

We will leave the cool shades of Dominico's, and turning out into the broiling sun, plod on our way towards the fruit market. Having proceeded some half a mile or so we come to a gateway in the wall; passing by the guard we go over a bridge which spans the moat, and following a broad, very dusty road pass the large and roomy theatre and come to a sort of parade-ground, where we see drilling a number of troops, somewhat small and awkward, but looking on the whole clean and neat, though most decidedly not formidable; and an Englishman by comparison, could not help thinking, proudly, of "The Guards," at home.

Having crossed over this parade-ground, which is surrounded by a high iron railing, with a gateway on each side, we come to a new town or suburb, and passing up one of the streets we turn sharply to the right and enter the fruit market, and, oh! what luscious temptation do we here see exposed on all sides; and I for one must really say that I can almost excuse, and certainly do not wonder at, Eve's transgression, if the Apple with which she was tempted was one half as beautiful as many of the fruits here displayed for sale, and the only objection to which is their bewildering variety. In every direction are seen, on stalls, under stalls, on the pavement, and in baskets, fruit, vegetables, and flowers, though the latter, I grieve to say, do not seem to hold anything like the position in public estimation which, from their sweetness and brilliancy of colour, they should do; but I suppose the old proverb, "Familiarity breeds contempt," stands good or bad here as elsewhere.

One of the first and most conspicuous fruits, both on account of the size of the bunches and its utility, is the Plantain. This is used both green and ripe—when it is of a dull brownish yellow. It is generally cooked and made into fritters with batter, and is superior to any fritter I know, neither Apple, Quince, nor Peach being comparable to it, for before its peculiarly delicate mellow flavour even the luscious Pine Apple must succumb—*i.e.*, when cooked. Next comes its delicious first cousin the Banana, which is a much shorter and smaller fruit, although, to a certain extent, like the last, both much resembling in shape a sausage which has been squeezed until it has become triangular instead of round. There are two kinds of Banana—the light yellow and the red, which latter is generally much the sweeter, though drier than the other, and both are in flavour much like a mellow Pear. Both the Plantain and Banana grow on a tree, or rather plant, with a very long, broad leaf, and the difference between the two plants is rather a puzzle to the uninitiated.

Next in importance in the fruit line to the Plantain and Banana come Oranges, which are most abundant and cheap—that is, if you know how to bargain for them, for even in this out-of-the-way spot the natives understand the noble art of "chiselling" or cheating a stranger. Here we likewise see Pine Apples and Pomeles (I beg pardon, that is the Bengalese name for them), here they are called Shaddocks, and in England Forbidden Fruit, I suppose on account of the bitterness with which their otherwise sweet and delicious juice is mingled. They are a large fruit, often as much as 5 inches in diameter, of the Orange tribe, the flesh of the sweetest and best being pink. In Calcutta they could be bought in any quantity for a pice a-piece, a pice being the fourth part of three-halfpence. Then come Grapes and American Apples, and nuts of various kinds from the mighty Cocoa-nut downwards.

As for vegetables I can hardly say much; but I noticed Cabbage and Turnips, common Potatoes (here called as in America), Irish Potatoes, and Sweet Potatoes, several kinds of vegetables and Beans to me unknown, and plenty of Sugar cane. My space, however, warns me that I must stop, and although I would have been delighted to have taken you to that wonderfully brilliant marine garden, where Amphitrite's most precious scaly flowers are exposed to view in all their richness of purple and gold, silver and black, bright scarlet and yellow, and other vivid colours too numerous to mention,

and only to be understood by being actually seen—I mean the fish market, and likewise to mass at the curious old cathedral, I must drop the curtain o'er the scene and make my *congé*.—
A SURGEON.

TOBACCO CULTURE IN ENGLAND.

For the convenience of those persons who, like your correspondent "P.," are unable to refer to the Acts mentioned by "W. C." (page 416), I have hereunder set forth so much of the penal clauses in the Tobacco Acts as will help to guide them to the right view of the subject.

Section 3 of the Act of 1831 (1 & 2 William IV., c. 13), explains how the several penalties and forfeitures imposed by the Acts passed in the twelfth and fifteenth years of the reign of Charles II., or by the Act of 1831, or any other Act prohibiting the growth and culture of Tobacco, may be sued for, recovered, &c.

By the Act (12 Charles II., c. 34), "a penalty is imposed for every rod or pole of ground planted, and so proportionably for a greater or lesser quantity of ground;" and by 15 Charles II., c. 7, the penalty was increased, but the same words again occur—"proportionably for a greater or lesser quantity."

Moreover, there is a penalty on having Tobacco (exceeding 1 lb. in weight), the growth of the United Kingdom, in possession, &c. (see page 287).—X., Surrey.

NOTES FROM JAPAN.

To the west and north-west of Yokohama, at a distance of about twenty-five or thirty miles, is a range of mountains, a portion of the great range that extends itself across the Island of Nippon to the western coast. The eastern termination on the plains at the head of Odawara Bay is an abrupt peak, styled Oyama, a sacred mountain, the residence of an evil spirit, to whom an idol is erected on the summit, and to which, at a certain season only in the year, pilgrimages are made.

A large section of the country between the hills and valleys of the coast is an elevated plain, which extends many miles into the interior, and mainly cultivated with the Mulberry for the production of silk, the chief source of wealth to its inhabitants. The town of Hachoji, situated in a large valley that intersects the plain near the base of the mountains, a trifle beyond the strict limits to which foreigners are permitted to travel, is the centre of a large silk trade, and of considerable commercial importance; it is not unfrequently visited by parties from Yokohama.

To make a visit not only to Hachoji, but a tour through the country to Oyama, had long been my desire, but it was not until last summer and autumn that opportunity presented itself, when I had the pleasure of twice doing so, on foot and afterwards on horseback.

My first journey did not extend itself as far as Hachoji, which I visited on my second trip, and otherwise varied in direction from the second. The possibility of a pedestrian tour had frequently been the topic of conversation between myself and several friends, until at last we decided to try it. On the morning of September 5th we started off, accompanied by two attendants to carry necessary baggage and provision, and took the road direct to the mountain. After passing over the Tokaido several miles, we turned off into a broad and fertile valley, gradually ascending until we reached the table land. Our course laid directly over the plain, meeting numbers of pilgrims going to and returning from Oyama. We soon met with Mulberry trees, our road passing through an almost continuous plantation of them. The point at which we ascended the plain is about the lowest towards the sea, some eight or ten miles distant, at which the Mulberry is cultivated; beyond it gradually descends into a lower plain cultivated with cereals. Occasionally we would descend into a small valley, in which places the population chiefly reside, but where the Mulberry is no longer cultivated. It is characteristic of the people to choose valleys and retired shaded nooks for their residences, and the absence of inhabitants on the plains was a marked feature of our journey. In a few instances we met with villages not in valleys, but they are rare exceptions to the general rule. In the afternoon of the day we passed through one of these, which, with its broad street in the middle of it, reminded me of those seen in other lands. Still later in the afternoon we descended into a valley through which flowed a rapid stream called the Saigami river; at the time we crossed it was but a narrow stream not over 150 yards

in width, but the wide extent of large pebbles and gravel on either side was an indication of the volume of water and force of its current in the rainy season of the year.

As we approached Oyama the land became more undulating, until at last we reached the village of Koyasu at its foot, and sought lodgings for the night, which, after some delay, were procured. We had proposed to ascend to the summit of the mountain the next morning, but our intentions were thwarted by a guard of officers stationed at a large gate on the road to prevent the intrusion of obnoxious persons: they were very firm and decided in their refusal to permit us to proceed, and there remained no other course for us but to return homeward. Our route lay up an extensive valley running parallel with the mountain range, between which was a range of high hills separating another smaller valley on the other side of them. We ascended one of these hills, where we had a fine prospect of the whole country before us. The mountains before us were so near that we could plainly discern their features. They are very rugged and precipitous, divided into many sharp ridges, extending from their summit to the base, and only partially covered with forest. In this respect they much resemble the mountains of Lower California, as seen from the sea on sailing up the coast. This resemblance of the mountains generally of Japan with those of that country has been remarked by others who have had the opportunity of observing both, and would point out their common volcanic origin. The vegetation of the country was very similar in character to that of the neighbourhood of Yokohama, the greatest novelty being a species of *Hydrangea*, or an allied genus, found growing on the banks of a stream of water. I had previously found it cultivated by the gardeners of Yokohama, and already sent it home.

After following the valley several miles, the road suddenly led up to the table land again, and once more we were among Mulberry trees. The unvaried character of the landscape, only relieved by the mountains on our left, combined with the heat of the day, rendered our journey rather wearisome, and I felt glad when, in the afternoon, we made a sharp descent from the plain into the valley of the Saugami, and sought refreshment at an inn on its banks. The declining sun after a while admonished us to proceed on our journey to our proposed stopping place for the night. The next morning our road still continued over the plain and between rows of Mulberries. The manner of planting them is by laying out the ground either in squares 80 to 100 feet on either side, or in larger sections of 100 to 200 feet in depth, the trees being planted on the margins at a distance of about 6 feet from each other, forming an enclosure, inside of which are cultivated various crops—Sweet Potatoes, Taro, Beans, Upland Rice, Buckwheat, &c. In cultivating the trees, the system pursued is to confine them to a stem to the height of about 4 feet, and then allowing them to branch off to form a head. When feeding the worms the leaves alone are not gathered, but the shoot of the previous year with all the fresh leaves on it is cut off close to the main stem; and when all are cut off the tree is left to produce new shoots for the succeeding year. In process of time, by this yearly close pruning, the top of the tree becomes a thickened mass of spurs, but without any apparent diminution of vigour in the tree to throw out new shoots. When first planted they are not subjected to this treatment until four or five years old. They endure the process many years before they show symptoms of decay, and when this begins a new stem is allowed to start from the root, and eventually the old one is cut out.

Subsequent to my trip, I was informed that in other parts of the country the practice is not to allow the Mulberry to form a main stem, but to cut the shoots off close to the surface of the earth. The soil in which they grow is light and black, not retentive of moisture, and can be supplied with but a small amount of fertilising material owing to the extent of cultivation, the comparatively great distance from the habitations of men, and the necessity of its use to other crops in the valleys. The crops, too, within the boundaries of the trees were not heavy, and showed an evident want of manure by the very limited amount of yield. The almost entire want of cattle, except pack-horses, contributes greatly to this want and consequent decreased production of the soil. The division of the land into small sections, and the mode of planting the Mulberry around them, entirely preventing the application of any but manual labour, must also operate against increased production.

During the last day's walk we were surprised to meet, in several places, extensive plains of uncultivated land covered with short grass and a few dwarf bushes. Their exact area we could not ascertain; but one of them, the largest we crossed, was two or

three miles in width, and more in length. A part of one of them was covered with a dense growth of shrubbery, and it is probable they all had been similarly covered at some former time; small portions on their margins were being gradually brought into cultivation.

In the latter part of the journey the size to which the Persimmon trees grew attracted our attention. Instead of being confined to farmyards they were growing in the open fields among the Mulberries. Whether they were grafted fruit I am unable to say, but I had never before seen any so large, and their dark shining leaves rendered them quite ornamental.

In the afternoon we struck the head of a long valley leading towards Yokohama, reaching our homes in the evening, somewhat wearied by our walk of over sixty miles, and amply rewarded by the new scenes we had witnessed.

My second trip, as I have before stated undertaken on horseback, presented very little of horticultural interest beyond the first. I observed, in a few places, the Mulberry planted in rows by some innovation on time-honoured custom, even in this land of fixed habits. I also met, in many places, growing by the side of watercourses, a very beautiful annual Balsam with large flowers of a fine purple colour. It appeared to me quite new, and I have transmitted seeds of it home, where, I trust next summer, you will be able to judge of its merits yourself.—T. Hogg (in *American Gardener's Monthly*).

WORK FOR THE WEEK.

KITCHEN GARDEN.

If former instructions have been carried out, this department will now present many agreeable features. Continual hoeing, ferking, and surface-stirring, together with a favourable season, have told well upon the crops, which are abundant and vigorous. All these operations must be diligently persevered in: the advantages derived therefrom are manifold—weeds are exterminated, slugs are disturbed and destroyed, moisture retained at a time when it is most needed, and a healthy relation kept up between the roots and the atmosphere, which last is the principal cause of the success which follows these operations. Trenching vacant ground must be proceeded with where required; and if manure is wanted on ground about to be planted, it is best to lay it on the top after it is trenched, and then fork it in. Let all green refuse be removed from every part, and be either dug in or taken to the char-heap. *Asparagus*, be chary of taking too much from the main beds now; it is best to have a reserve bed, which, if closely cut, will throw up shoots for a considerable time, and as it will thus be rendered useless, a new bed should be made every year to supply the deficiency. *Brussels Sprouts*, plant out the most forward, as also *Green Savoys* and *Buda Kale*; if the weather is dry the holes had better be puddled. *Cauliflowers*, plant out for succession. *Cucumbers* on ridges and banks must have plenty of water, and liquid manure occasionally. *Dwarf Kidney Beans* may be sown for succession. A sowing of *Early Mazagan Beans* made now in an exposed situation will be useful by-and-by. *Peas*, sow *Knight's Marrows* and *Early Frame* for succession; these are benefited by a slight soaking in water previous to sowing, and also by pouring water upon them after they are laid in the drills, but not after they have been covered. Advancing crops will be benefited by applications of liquid manure, not too strong, twice a-week. See that the ground is kept well stirred about them. Continue the gradual thinning of *Carrots* and *Onions*, as they may be required for use; but *Parsnips*, *Red Beet*, *Salsafy*, and *Scorzoneria*, should always be thinned to the proper distance at once. *Salading* of all sorts is now in great request. Look well to successional sowings, and see that they all have copious supplies of water to induce crispness and coolness. *Scarlet Runners* should have the earth well loosened about them, and a little drawn up to the stems; then stake at once. *Sea-kale*, the buds on the old roots must be thinned out considerably, and dress the beds with strong manure, and fork it in. Young seedlings of *Sea-kale* must also be thinned, and the thinnings transplanted if required. Keep all advancing crops in a vigorous growing state, by timely applications of water in dry weather. Watering should never be done by dribblers, here a little and there a little, but every crop should be thoroughly soaked. The practice of giving little drops every day cannot be too much avoided; a thorough watering once a-week will do more good than the same amount of water distributed through each day.

FRUIT GARDEN.

Employ the engine against the aphid on fruit trees as soon

as it is detected. The injury it inflicts on the foliage, although, perhaps, not immediately perceptible, is no less certain; the perfection of the bearing wood, and the perfect development of the buds for the ensuing year, are dependent on a healthy development of the foliage. Employ sulphur on the appearance or suspicion of mildew. Continue to stop, regulate, and lay in the shoots of wall trees. Stop the Vines, and tie in the shoots, one bunch is sufficient for a single shoot to support. Thin Raspberry suckers. Water late Strawberries. The plague of caterpillars is again appearing on the Apple trees; to prevent their ravages we would advise the use of a powerful engine to dislodge them, or a good heap of refuse to be collected on the windward side of the trees, and a great smoke created, which would have a good effect, as it would be fumigating on a large scale.

FLOWER GARDEN.

Examine all newly-planted things, and see that the soil is closed about their stems. Use the hoe, when requisite, to break the surface crust. Attend to pegging and tying. Fill up all vacancies; annuals may be brought into requisition for this purpose. Roses may be budded, taking eyes from those trees which have been forced; the young wood from the same trees will strike freely. This is a good time for looking over lawns and removing objectionable weeds. The regulation, so far as is necessary, of wild creepers, such as Honeysuckle, Hop, &c., about shrubberies, should at once be attended to. For the first season or so, Pinuses planted on mounds should be regularly watered and mulched. Peg down those plants required to cover the ground as they advance, and loosen the surface of the beds and borders, which should afterwards be neatly raked over. Carnations, Picotees, and herbaceous plants, with the taller-growing bedding plants, should be staked and tied up to prevent injury from high winds. The strength and height of the stakes must be proportionate to the size and height of the plant to be secured. Hollyhocks, Phloxes, Delphiniums, Asters, &c., should have the shoots thinned out, if not already done, before being tied up to prevent the appearance of overcrowding, as well as to improve the size of the flowers. When showery weather occurs let the Box edgings be clipped. London Pride, Thrift, Daisies, &c., used for edgings, should each year, or once in two years, be taken up, divided, and replanted when the blooming time is over.

GREENHOUSE AND CONSERVATORY.

Specimens and choice plants nearly done blooming should have the faded blooms picked off, and be well washed with the syringe; they should then be placed in a cool, shady situation to recover themselves before potting, which, as before advised, should on no account take place until a fresh growth has commenced. Shading will now be necessary for all descriptions of plant-houses, unless the roofs are covered with creepers; and air should be admitted largely, allowing more or less at night, according to the description of plants grown. The paths, floors, &c., must be kept damp by throwing water repeatedly over them, to preserve something like humidity in the atmosphere of the houses, which, under the extreme drying of the external air, is rather difficult to keep up. Achimenes, Gloxinias, Gesneras, &c., should, as they begin to show for bloom, be removed to more airy quarters, keeping them, however, partially shaded for a time, but afterwards they may be exposed to a larger share of light. Achimenes must be carefully attended to with water while growing. Encourage the growth of Azaleas and Camellias by keeping them comparatively close (with shade during sunshine), and supplying them liberally with moisture through the syringe. As probably increased room will be obtained by the removal of many plants to the flower-beds, the space might be appropriated to the cultivation of plants of the commoner sorts for an autumn display. The pits will be found useful for many hardwooded greenhouse plants impatient of too much heat. This is a good time to increase Chrysanthemums. The flowering of many varieties of the Passion-flowers will be hastened by stopping the young shoots, and any shoot which may be hanging too low should be stopped, which will prevent confusion and induce the production of flowers. Rearrange the plants frequently, and in the conservatory displace any that incline to become shabby.—W. KEANE.

DOINGS OF THE LAST WEEK.

WATERING.—The rains were followed by some of the hottest and most drying weather we have experienced. A falling barometer led us again to expect rain, but it was very loth to

come, and many fresh-planted things in the kitchen and the flower garden showed signs that they wanted a little more refreshing than a skiff over the foliage, which was all they had received in the parching days. On Tuesday the rain came in drizzle, but not in sufficient quantity to do more than refresh the foliage; and therefore, though some would say we were acting inconsistently, we set to work and gave the most of the fresh-planted subjects a little water. We hold that that watering, whether followed by dull or by bright weather, would do more good than half a dozen waterings in dry, parching weather in sunshine. Some will say, Why water at all in bright sunshine, why not wait until the evening? All very true, when water is close at hand, and there are only a few yards or a score of plants to water; but it is a very different affair when you must take water as you can obtain it by horse and cart, when what really is within your possession must be carried or wheeled a considerable distance, and when the quantity required is so great as to demand the services of a number of men to apply it efficiently, and many of these men want the evenings for attending to their own gardens at home. Under such circumstances we have often been glad to water even in a bright sun, either wetting as little of the surface soil as possible, or going shortly afterwards either to stir that soil or scatter some of the dry earth over the watered part so as to prevent the sun carrying off the water again by rapid evaporation.

Now, in giving as much water as would reach the roots of the plants on Tuesday, none of it would be lost by evaporation; the clouds and the drizzle wrapped the tops of the plants in a moist atmosphere, from which they would absorb more than they perspired—roots, leaves, and stems would all be nourished and refreshed simultaneously. The roots would absorb at their leisure, and be prepared thoroughly to meet the demands of the bright sun when it came, and after such hot days both the earth and the water would be well warmed, so as to stimulate the plants as if they were in a hotbed. It is seldom that even rains would be so warm as the water was in the beginning of the week, that had been fully exposed in tanks or ponds. For such watering, at such a time, we believe, therefore, there are sufficient reasons.

Waterings of this kind, however, should never be overdone. No more water should be given than will just reach the roots and enable them to push vigorously, and cater moisture for themselves. We have little faith at any time, and no faith at all, in heavy drenchings of the soil now, and especially for tender plants, as the wetter the soil the colder it will be made when there is a rapid evaporation. On this account alone it is often best merely to water so as to refresh the roots, and leave the surface comparatively dry. At an early period, and for tender plants, the obtaining of heat and the retention of moisture often become antagonistic to each other, as, if we stir the surface soil, or mulch it to retain the moisture, we also so far prevent the earth from being warmed by the sun's rays. On this account it is often advisable not to stir the surface soil much until the earth is well warmed. We often defer doing it for tender plants until the surface begins to crack. The stirring the surface allows the heated air to penetrate into the soil, and this often produces striking results; but the rougher the soil is left on the surface the more will heating downwards by conduction be arrested. In hot weather in July we have found a difference of from 3° to 5° in favour of a thermometer 6 inches below the surface of a hard smooth gravel walk, over another 6 inches below the surface of a piece of ground often stirred on the surface. On the other hand, what keeps heat out will also keep heat and moisture in, and, therefore, surface-stirring and mulching are pre-eminently useful after the ground has been warmed and as autumn days become shorter. Until the ground is warmed heavy drenchings with water, and even frequent surface-stirring, are attended with a minimum of advantage.

In writing the above as constituting more than an excuse—an argument—for watering plants out of doors when they need it, in dull, drizzly, rather than in hot sunshiny weather, we depart nothing from the principles of watering frequently advocated, summarised in the directions, Do not water until water is needed; then give enough to moisten every fibre, but little more; and then wait patiently until your services are again required, avoiding by all means the system of moistening the surface by dribbles, which, in general, does more harm than good, tempting the rootlets to come to the surface, where they run the risk of being scorched and encouraged alternately, and so far preventing the roots going down in search of moisture, or receiving a share of the moisture that would pass

them in the shape of vapour, when there was to a considerable depth a continuous radiation of heat and an unbroken evaporation of moisture.

There is just one general exception to the above rule. In the case of newly-potted plants in the houses or otherwise, or of newly planted-out subjects, such as bedding plants now, the plants will often suffer from a hot sun when there is plenty of moisture at the roots, and dashing on more water could be of no benefit whatever, as the roots as yet cannot absorb fast enough to meet the sudden demands of sun and wind, as these take moisture away from the leaves and stems. Checking evaporation by shading until the plant has established itself would be better than drenching and cooling the roots. In a large way this shading would be next to impossible, and syringing or sprinkling overhead is often as effectual, and the ground is not cooled by the shading. In very hot weather we thus often give a dewing from the syringe and the garden engine, instead of pouring water from the water-pail, and the little that falls on the hot ground under such circumstances keeps, until it is entirely evaporated, a moist vapour about the leaves and stems which prevents them from flagging. A very little water will go a long way in thus damping the foliage, and so long as the leaves are damp the sun will rarely absorb the more valuable moisture contained in the plant.

We have no hesitation in thus treating our newly-planted bedding plants in the brightest sun if they need it, and an active man or lad will soon go over a large space. We know there are many who counsel us to avoid all this, as the plants and leaves would run the risk of being scorched and blanched. In practice, in the open air we have never found such an injurious result. Who is there that has found the prejudicial effects of what is called even a heavy sunny shower? We have never found a single burnt hole or blanched leaf after such a refreshing shower, with the sun making the most beautiful rainbows, as it shines brightly on the falling drops. Out of doors we have never seen anything injured by our slighter artificial shower, more properly called misting or dewing. Even under glass there is no great danger from such syringing, even in sunshine, if you are sure of clear good glass, and there is a free current of air through the place. It is the confined air, and the confined vapour that accompanies it, that are the chief causes of the mischief that sometimes takes place under such circumstances. This reminds us of several inquiries as to how to give to plants and cuttings the misting or dewing to which we sometimes allude. What we mean is, that the water shall be driven from a syringe or garden engine in such a fine form as more to resemble a misty dew than a common shower of rain. The art of doing so must be acquired by the workman, and then nothing is more simple.

There must have been few at the late International Exhibition that did not admire the many sorts of bends, and joints, and nozzles, and roses that could be attached to syringes and engines for throwing water, as exhibited by Messrs. Read and Warner. These gentlemen, we are sure, will excuse us for saying that a great portion of these mechanical conveniences are useful chiefly to the amateur gardener, enabling him, if disposed, to perform many operations without much stooping or bending, which otherwise he would be obliged to submit to; but for real work, the simpler the machine is the better. A good workman with the simplest contrivance would do the work whilst a more mechanical genius was taking off one nozzle and fitting on another; and just on this, simple principle, that for getting at the under as well as the upper side of leaves and branches, no joints or bends can ever compare for efficiency with the wondrous backbone and the joints in the limbs of the human operator.

Simplicity cannot be too much studied in all mechanical helps. Take for instance the garden syringe. There is nothing superior to the ball-valved common straight syringe of Read's, and even in that case we care nothing for the two nozzles sent out with it, pierced with holes larger and smaller, the finest sending out the water very slowly but in larger drops than suit our idea of what we term dewing. No, these rose nozzles we generally look upon as pretty ornaments, and useful for those who like to work them, and who care nothing about the time the water takes to escape. The object of our love in the syringe is the single jet nozzle, or rather, as it generally appears, with the seemingly double jet, one for allowing the water to fill the syringe and the other to permit of its leaving it with effect. By placing the thumb on the end of that jet the water, according to the resistance given by the thumb, can be sent out with great force, and in large or

small volume, or it may be forced to leave the syringe as fine as a misty dew, and on either side of the leaf, just according as the thumb and the wrist regulate the supply and the direction. Where is the mechanism that can compare with the joints and bends in a gardener's hand and arm? Do not suppose we say a word against such nice mechanism as we find in garden engines, syringes, and hydropumps, &c.; but we do mean to say that when a man has to carry the water which he uses in syringing, and has to depend on himself without any help, he will find the simplest form of the garden engine or syringe anything but the worst auxiliary. On the same principle we look on all the delivering roses sent out with garden water-engines as of little intrinsic value to the practical workman, as the common jet can be so managed by his thumb as to secure the water being sent out in any force, and almost any quantity, from the regular lashing to that resembling a soft misty dew.

KITCHEN GARDEN.

Planted out Lettuces; sowed more for succession, also a little bit of Endive, Onions for salads, Turnips, Radishes, and Peas and Beans for succession, as the last sowing has been let alone by the pheasants. Have a lot of both to transplant, which must be done without delay. Those turned out formerly are doing well; but, of course, all this increases the labour. Would have formed slight hotbeds for Melons, Cucumbers, &c., but as yet could not get at them. Also, would have placed the foundation of a Mushroom-bed in our open shed if we could, but we hope to get a little straight before long. From previous weeks' notices expected to have got out some forward Celery into beds containing three or four rows each; but part of these beds are not yet emptied of bedding plants, and part are not yet made, nor supplied with rotten dung; but we are easier on this account, as the Celery plants are doing well where they are, and being close together require much less watering than they would do in beds to attain their full size. They will also lift with good balls, and never suffer from the moving, but will require a little shade if the weather should be very sunny. One advantage of turning out large plants is, that they can be well cleaned of all suckers and side growths before planting them out, and much more easily than when fairly planted in the soil. If such suckers are allowed to grow, they rob to a certain extent the main central plant, on which all the attention should be bestowed. Some Celery raised and planted among ashes, as detailed some time ago, is running now; but even the blanched white stalk is as useful for soups as young green Celery. To get that white for the purpose of soups and broths, we frequently leave some rather thickly in our first-pricked-out bed; and earth up with earth and ashes. This is no bad plan for obtaining it very early for the table, or as part in salads; but it is advisable not to have much of it, as it will not compare with what has more room in a bed, or in a single row. Keep pricking out young plants in sandy soil, with rotten dung and leaf mould below; they will come in for late spring Celery. On a drizzling day trenched the Broccoli quarters, as alluded to last week. One word more as respects

Celery.—Many people are afraid to plant out early, owing to the liability to bolt or run, when it ought to be fit for use. We have planted out in May and June strong plants, had good heads fit for use in July, and not had a single run head. We think that some years ago we let out the secret, and it may be summed up in two words: First, never let the plants be stunted from dryness; and, second, dispense with all bit-by-bit earthing-up, and earth up at once from three to four weeks before you want the Celery for use. We have grown Celery of astonishing size by using strong dung and artificial stimulants; but for profitable, nice-flavoured Celery, commend us to a moderate portion of rotten dung and leaf mould well mixed with the natural soil. Very large Celery is expensive to grow, and it is ruinous to keep it long, when fit for the table, as if the rain penetrate to the heart, it cannot get out again, and thus the most valuable part becomes a mass of rottness. We still like the little Dwarf Incomparable—we can with it obtain so much useful matter in little room. It does not come in so early as some other kinds—that is, unless it is planted much earlier. If it received justice, we believe it might be planted out in the beginning of June, and scarcely show a bolted head until the beginning of the following April.

FRUIT GARDEN.

Some of our trees, especially Plums, that were pictures last season, are showing what birds, encouraged by game, can soon accomplish. Many large branches have not a green twig on them, and all over the tree strong shoots are coming to make

up in growth, and which will require frequent stopping to obtain anything like fruit from them. The trees, we consider, are injured for years. Some beautiful Thorn trees were next to leafless, and are now breaking buds from the old wood, and the birds here, too, did the mischief. Plums, Pears, and Thorns suffered most as respects the wood-buds. Apricots and Peaches out of doors had the fruit-buds pecked wholesale. Apples and Cherries from swelling their buds later have comparatively escaped. When a friend tells us that the sound of a gun must not be heard from the garden premises; that the setting for a rat of a trap that might catch a rabbit or a hare, or worse still, even a pheasant, would be next thing to being sent to Botany Bay; that the thinning even of birds' nests in the dense shrubberies and masses of evergreens that surround the garden would be an unpardonable offence, the immense numbers of such otherwise agreeable visitors being constantly on the increase, encouraged by the food thrown down for game, and of which the little rogues take their full share; and that even as a help he cannot keep a cat or two to frighten, in some measure, the intruders, we have no need for him to tell us how the garden becomes by degrees little better than a game preserve, unless great cost and trouble are incurred for nets, and even then he will not be safe. We have never yet seen a net of the common kind put up that a blackbird, thrush, or sparrow would not find his way safely underneath, and if he only had the sense, when disturbed, to go about it quietly, he could also as easily get out without our seeing or noticing him in time.

Strawberries.—Those out of doors are swelling nicely after the showers, but do not look as if they would give us any ripe fruit for eight days or more. Have thinned them pretty well out of the houses; will soon clear them out of the pits. Those lifted and planted in frames are beginning to change colour, and so is a row that is standing in front of the orchard-house, which we trust will keep us going until we have fruit from the open air. Those who have them in pots in houses must keep a sharp look out, or they may get a dose of red spider they may have cause to remember. In such scorching weather as we have lately had, if ever the soil become dry in a pot, the red spider will soon visit the leaves, and he will not stay there. If ever the plants are in pots, if we could, we would always have them in pits after May, with the pots set in from 1 to 2 or 3 inches of soil, according as the time dated from the 1st of May to the beginning of June, as then, with the command of artificial heat when necessary, and the cool moisture at bottom, it would be easier to keep red spider at bay than when the pots were set on a shelf either in saucers, or without them on turf or moss. We have some standing on moss and turf now, the moss and turf being a complete mass of rootlets. When the pots stand on earth it should be so porous and open that the water may pass through it. We have removed nearly all the Strawberries from the Peach-house, and not too soon. The first plant affected with the red spider was one where the drainage-hole in the bottom of the pot was clogged up. Stagnant moisture is as effectual for causing a sickly habit as excessive temporary dryness.

Peach-house.—Unless in cold nights give no fire now, and plenty of air, as the fruit is coming fast enough, and fine, though a heavy crop. Gave a good watering with drainings from the dunghill, which will help to keep the house cooler and swell off the later fruit. Gave also a good watering to the orchard-house from similar drainings, as the rains had helped to fill the manure-water tank. We prefer this for in-door watering, and would confine sewage-water, if we could, always to open-air watering. We are fully convinced that most of our cottage-gardener friends would vastly increase the produce of their gardens if all the slops and washings from the house were carefully kept, if in no better receptacle, in a good clay pond or tank, covered over, and then applied the liquid to all the rougher vegetables when in a growing state, and without touching any of the leaves.

Vines, Figs, Melons, &c.; much the same as in previous weeks.

ORNAMENTAL DEPARTMENT.

Whilst attending to potting and packing Orchids, dividing some Ferns, &c., in drizzly days, the chief work has been, as the weather would permit, going on with planting the flower garden, and getting the lawn and walks in order. We never were so late in planting out, and we do not know if we have any reason to regret it. Most of the plants had been turned out and were growing in temporary beds, and were lifted with a trowel or little fork, and carried in boxes at once to the appropriate place, and after a day or so hardly one showed signs of

distress even in a bright day. There is this advantage, besides many others as respects watering, &c., in the case of such plants planted out in a temporary bed, and lifted and planted—that the fibres go at once into the fresh soil of the well aired bed. One disadvantage is, that sometimes if the ball formed is large it is apt to break and take the fibres with it. We would sooner have all the nice fibres without a ball, than have the fibres lost in the above way. For such plants, after being once watered at the roots, a skiff over the foliage, as alluded to in the beginning of this article, we generally find soon makes them all right. We had occasion to move a few Geraniums that had been planted three days, and found that the fibres had run fully an inch into the new soil. After they do that they will pretty well look after themselves, and will bloom all the better the less watering and rains they have—that is, as a general rule; for once we had Scarlet Geraniums that began to wither up in the dry summer, the drought having got down to the extremity of the roots, but they did not do so until long after Calceolarias and Verbenas, also left to themselves, perished. As a general rule, when once Scarlet Geraniums take hold of the ground, the less moisture they have the better they will do.—R. F.

COVENT GARDEN MARKET.—JUNE 16.

LITTLE or no alteration in our last week's quotations shows the condition of our market, supply and demand being about balanced. The present retarding weather favours the sale of foreign fruit, among which some tons of Strawberries have been disposed of during the week, selling at about 1d. per lb., chiefly among the street vendors.

VEGETABLES.

	s. d.	s. d.		s. d.	s. d.
Artichokes.....	esch	0 3 to 0 6	Leeks.....	bunch	0 3 to 0 0
Asparagus.....	bundle	3 0 6 0	Lettuce.....	per doz.	1 0 1 6
Beans, Broad.....	bushel	0 0 0 0	Mushrooms.....	pottle	3 0 4 0
Kidney.....	100	1 0 2 0	Must.& Cress, punnet		0 2 0 0
Beet, Red.....	doz.	2 0 3 0	Onions.....	bushel	6 0 8 0
Broccoli.....	bundle	1 0 1 6	Parsley.....	½ sieve	2 0 0 0
Brns. Sprouts ½ sieve		0 0 0 0	Parsnips.....	doz.	0 9 1 6
Cabbage.....	doz.	1 0 2 0	Peas.....	per quart	2 0 3 0
Capsicums.....	100	0 0 0 0	Potatoes.....	bushel	2 6 4 0
Carrots.....	bunch	0 4 0 8	Kidney.....	do.	3 0 4 0
Cauliflower.....	doz.	2 0 6 0	Radishes.....	doz. hands	0 6 1 0
Celery.....	bundle	2 0 3 0	Rhpharb.....	bundle	0 4 0 3
Cucumbers.....	each	0 4 1 0	Savöys.....	doz.	0 0 0 0
pickling.....	doz.	0 0 0 0	Sea-kale.....	basket	0 0 0 0
Endive.....	doz.	2 0 0 0	Shallots.....	lb.	0 8 0 0
Fenuel.....	bunch	0 3 0 0	Spinach.....	bushel	2 0 3 0
Garlic.....	lb.	1 0 0 0	Tomatoes.....	per doz.	2 0 4 0
Herbs.....	bunch	0 3 0 0	Turnips.....	bunch	0 6 0 0
Horseradish.....	bundle	3 6 4 0	Vegetable Marrows	dz.	0 0 0 0

FRUIT.

	s. d.	s. d.		s. d.	s. d.
Apples.....	½ sieve	0 0 to 0 0	Melons.....	each	4 0 to 8 0
Apricots.....	doz.	4 0 0 0	Nectarines.....	doz.	10 0 20 0
Cherries.....	lb.	0 6 2 8	Oranges.....	100	6 0 12 0
Chestnuts.....	bush.	0 0 0 0	Peaches.....	doz.	15 0 36 0
Currants.....	sieve	5 0 6 0	Pears (dessert).....	doz.	0 0 0 0
Black.....	do.	0 0 0 0	Kitchen.....	doz.	0 0 0 0
Figs.....	doz.	8 0 15 0	Pine Apples.....	lb.	6 0 10 0
Filberts.....	lb.	0 0 0 0	Plums.....	½ sieve	0 0 0 0
Cobb.....	100 lbs.	0 0 0 0	Quinces.....	½ sieve	0 0 0 0
Gooseberries.....	quart	0 4 0 6	Raspberries.....	lb.	0 0 0 0
Grapes, Hothouse.....	lb.	5 0 10 0	Strawberries.....	lb.	2 0 5 0
Lemons.....	100	6 0 10 0	Walnuts.....	bush.	14 0 20 0

TO CORRESPONDENTS.

BOOK ON FERNS (*Pour passer le temps*).—If you mean works on Ferns indigenous to our islands, "The British Ferns," it can be had free, by post from our office if you enclose 3s. 8d. in postage stamps with your direction. We shall be glad to see your notes on "Microscopic Researches" as soon as it is convenient to yourself.

GRUBS IN ROSE BUDS (*Charles Hamilton*).—The dark-coloured fattish grub which gnaws into the buds of Roses is the larva of the pretty Tortrix (*Argyrotoza*) *Bergmanniana*. The more slender green one with whitish lateral stripes is that of one of the Geometride (*G. Yvauria*). Careful hand-picking of the infested buds is at present the only remedy. When the moths appear they might be trapped by bird-limed twigs stuck about the plants.—W.

OKRA PLANT CULTURE.—"J. P. G." would feel obliged by any of your readers who have tried the cultivation of the Okra plant, saying whether they have succeeded in producing pods without stove heat, and how treated. The Okra plant (*Abelmoschus esculentus*), is a native of the West Indies, where it is cultivated especially for thickening soups, as it is very mucilaginous.

COLD GREENHOUSE PLANTS (*Amateur*).—You are quite right as to the plants for your cool greenhouse. You could not have much from it in winter for parlour decoration, but you could bring on bulbs in it, also Stocks and Wallflowers. Hardy annuals would stand in it in winter and bloom early in spring, and Balsams and many other things could be had in great perfection.

DENDROBIUM NOBILE (P. D.).—The pseudo-bulbs or stems which are the growth of this year do not die in the next, but lose the leaves, and flower in that or the following year; but under cool treatment, or when grown in a vinery, they will not flower until the commencement of the growth of the third season. When the stems have ceased to grow and have become thick and plump, the plant should be put to rest by withholding water and keeping the atmosphere drier. In spring the old leafless stems will exhibit a number of small knots or excrescences, and when these begin to swell a moister atmosphere may be afforded; but if such do not appear, then the new growths will be produced from the base of the last year's stems and upon them, and this is the indication by which you may know when to start the plants. The flower-buds are formed in summer, and the flowers appear about the time the new growths are being made; sometimes before, but generally with the new growth, according to the temperature. It usually flowers in April and May. It does well with us in an early vinery, but not in a cool one.

VINES INFESTED WITH RED SPIDER (S. P.).—The leaf sent is infested with red spider. You say you have not syringed the Vines. The red spider delights in a dry atmosphere, but cannot endure moisture. If the syringe is not new used with force, it will be in vain looking for a crop, as the leaves will be all gone before the fruit is ripe. If you have plenty of clear rain water syringe the Vines with it every evening, from 5 to 6 P.M., directing the force of the water against the under sides of the leaves, so as to wash off the insects. Give air early in the morning, when the sun is powerful, increasing it with the increase of heat, and always by the time the sun shines powerfully upon the house whilst the leaves are wet, but never fail to shut up after syringing in the evening. Continue the syringing until the Grapes change colour, then leave it off. In addition to syringing, sprinkle the paths, floor, &c., with water in the morning, and continue to do this until the Grapes are far advanced in colouring. If the water at command is not soft, or not clear, then (and even if it be soft and clear) dissolve 4 ozs. of soft soap in two gallons of water, and add sufficient flowers of sulphur to form a thin paint. With this wash any wall on which the sun shines powerfully, also coat the flue or hot-water pipes now, making the flue hot, but not hotter than the hand can bear for a short time—say a minute. Do this in the evening after the house is closed, and when the heating surface is covered with the sulphur gently syringe the same from end to end, until the house is filled with vapour. Syringe forcibly in the morning, giving air before the sun shines very powerfully upon the leaves. Repeat this when the syringing is discontinued. Red spider promises to be unusually abundant this year, both in houses and out of doors, and to prevent its attacks we recommend frequent syringing with water.

AZALEA CUTTINGS (A Young Gardener).—Take cuttings 3 or 4 inches in length from the growing points, when the wood is about half ripe. Cut them transversely below a joint, and remove the leaves from the lower two-thirds of the cutting. Prepare a pot by filling it to two-thirds of its depth with crocks, on these place a thin layer of moss, and then such a quantity of sandy peat, that when the cuttings are inserted their base will be the least possible distance above it. Fill the pot to the rim with silver sand, and then insert the cuttings around the sides, putting them in up to the leaves. Give a gentle watering, and plunge in moss, sawdust, sifted tan, or some such material, over a mild bottom heat of 75°. A close frame is best, and the cuttings are better inserted singly in pots. If there is not the convenience of a close frame the cutting-pot may be placed in one of larger size, and the interval between the pots filled to within an inch of the rim with broken pots, and the remaining space with silver sand. The rims of both pots should be on the same level, and a bell-glass put on must rest on the sand between the pots. In this case the cuttings may be placed in a shady part of a house having a heat of from 65° to 75°, or 80°. In either case keep the soil just moist, and the cuttings close and shaded from bright sun; when they begin to grow admit air by tilting the bell-glass or light, and gradually harden off. They will be fit to pot off in six weeks.

CYCLAMENS POTTING (Idem).—In pottling, the corm or bulb should be covered with soil if it be that of *C. persicum*, and those of *C. coum* and similar kinds may be covered an inch above the crown.

PLANTS LIKELY TO TAKE PRIZES.—"C. H." encloses two sets of stove and greenhouse plants, including Orchidaceae, and asks which list ought to have the first prize, supposing the plants in each set to be equally well grown. This is one of the questions which it is next to impossible to answer without seeing the specimens; but in a collection of nine stove and greenhouse plants, where the collections in other respects were equal, we would be inclined to prefer the collection containing *Cattleya Mossii* superba, *Lycaste Deppelii*, *Azalea Iveryana*, *A. Beauty of Europe*, *A. Van Houttei*, *Epaeria miniata* splendens, *Boronia tetrandra*, *Eriostemon nerifolium*, and *Tetrastich hirsuta*.

FLOWER-BEDS (Ronnoe).—Your previous planting would do very well, and it would be well to alter the planting of the beds so as to insure a succession of cropping. Were we to tell you how it would be best to plant on a fresh plan, we should break our rule not to plant any garden but merely to criticise and advise on the proposed plan sent. Were we to do so, we should be inundated with plans, and then do little or no good in attempting to plant them. For instance, what would be the use of our stating what would suit your beds best if you did not have, or could not obtain, the plants? Some of our friends manage us nicely in this way: they tell us what they intend planting, and add what other plants they have and can use, and this opens up a way of doing the best with what is at hand. Many of the best gardeners plant not exactly as they like best, but make the most of the plants that they have. Few employers will let their gardeners buy dozens and hundreds of this and that at planting time.

COCOA-NUT FIBRE REFUSE—STRAWBERRIES FOR HEAVY SOIL (Amateur).—We consider the refuse the best of mulches for the Strawberry, and very desirable to apply to heavy ground for Strawberries and all descriptions of vegetables. The kinds of Strawberries we grow and can recommend are for early use: Black Prince, Eclipse, and Marguerite; and, to keep up a succession, Keens' Seedling, La Constante, Wonderful, British Queen, Frogmore Late Pine, and Elton. On very heavy soil La Constante runs badly and dies off in winter, but on light and medium soils it does well, and is one of the very best.

RAISING PLANTS FOR BEDDING-OUT (E. D. R.).—We propose to publish some notes on the subject shortly.

GREEN FLY ON ROSE TREES (L. R. C.).—Syringe the heads of the trees forcibly with water in which soft soap has been dissolved at the rate of 1 oz. to the gallon of water. Continue to do this every evening, wet or dry, for a week, and, on the aphids disappearing, syringe with clear soft water until the blooms open; but, if the aphides do not disappear, syringe the heads in the evening of a dry day with tobacco water, made by adding five gallons of soft water to every gallon of the tobacco liquor sold by the tobacco manufacturers, wetting the leaves and shoots thoroughly in every part. On the following morning syringe the trees with clear water. If this should not clear off the aphids, repeat the application next night but one. If tobacco liquor cannot be had from the manufacturer, take the strongest slug tobacco, and over 2 ozs. of it pour one gallon of boiling water, cover with a cloth, let the whole stand until cool, then strain, and apply the liquor to the trees by means of a fine-roset watering-pot or syringe. The same liquid will answer for the destruction of aphids on all kinds of trees as the Peach, Cherry, Plum, &c.

LIQUID MANURE FOR ROSES AND POT PLANTS (Idem).—There is no safer manure for Roses than Peruvian guano, 2 ozs. dissolved in a gallon of water; and of this strength it may be applied twice a-week in dry, and once a-week in moist, weather during the growing season. For plants in pots, such as Fuchsias, Geraniums, and the majority of softwooded plants, the liquid should not be so strong; 1 oz. to the gallon of water is sufficient, and it should be applied to them only during their season of growth. When the pots become filled with roots it may be given at every alternate watering.

PLANTS FOR A POND (D. W.).—We know of no plants that will do in a pond so deep as 6 feet. If you were to have it filled up so as to make it from 2 to 3 feet deep in the deepest part, you might there plant *Nymphaea alba*, *Nymphaea lotus*, *Vallisneria spiralis*, and nearer the sides, in from 6 inches to a foot of water, *Ranunculus aquatilis*, *Myriophyllum spicatum*, *Iris pseud-acorus variegatus*, *Hydrocharis morsus-ranae*, *Eutomas umbellatus*, *Apogonon distachyon*, *Acorus calamus*, *Alisma natans*, *Chara flexilis*, *Calla palustris flore pleno*, *Hottonia palustris*, *Lysimachia thyriflora*, *Potamogeton densum*, *Stratiotes aloides*, *Sagittaria obtusa*, and *Carex scuta*.

CUCUMBER ROOTS DISEASED (A Two-years Subscriber).—We think the excrescences on the roots, though ever present on aged roots, are more plentiful than is generally the case owing to the large amount of vegetable matter in the soil used. The only remedy is to use a more sweet and less rich soil. To the leaf mould which you use one-half good medium-textured loam should be added. A deficient root-action and imperfect growth are the conditions under which the roots become covered with excrescences as yours are, and that we find induced by a soil too rich in vegetable matter, and not kept sufficiently moist to ensure free growth.

STRIKING PANSY CUTTINGS (Agnes).—The cuttings will grow if inserted in a border shaded from 8 A.M. to 4 P.M., the soil being kept moist. They will also root if they be inserted in a free sandy soil in an open situation, the soil being kept moist, and the cuttings sprinkled overhead morning and evening with water from the rose of a watering-pot. Shade them from bright sun with a mat over hoops.

GERANIUMS LEGGY (Idem).—The cause of this is neglecting to pinch out the points of the shoots, and that should be done in the first instance at the fourth leaf, and this treatment to be continued to the side shoots up to the end of April. Your plants will thus be compact when turned out, and they will be in fine bloom by the early part of July; but if you turn out leggy plants the best plan is to lay them down, and the bare shoots or stems throw out fresh shoots, which grow close and stiff. Your tall plants will, we think, be now pushing from near the bottom. We would not stop the plants now, nor indeed at all during summer, as they will push low enough to hide their bareness.

CUCUMBERS DYING OFF AT THE ENDS (J. B. K.).—It is mainly owing to a deficiency of bottom heat, accompanied by a cold, damp atmosphere. We think that you water far too often; once a-day is very often. Water is rarely required oftener than every other day, but it should be given when the soil becomes dry; syringing twice a-day will lessen the necessity of frequent watering. The soil should be kept moist but not sodden. The syringing is all right, only you must do it by 4 P.M., and then shut up the house; and if the weather be cold, and you have no fire, it would suffice to sprinkle the paths, floors, &c., twice a-day instead of syringing the foliage. Your cropping the plants heavily will make the fruit small at the ends, and they will not swell well. Liquid manure may be given at every alternate watering. Avoid a saturated soil, and husband the sun heat by closing the house early in the afternoon. Syringe only during bright weather.

VINE LEAVES DISCOLOURED (Wonsbeck).—The leaf sent is mildewed. Dust immediately the leaves so affected with flowers of sulphur. There are also traces of red spider. In three days after applying the sulphur, syringe the Vines with clear soft water, directing the force of the water against the under sides of the leaves, and repeat this every evening until the Grapes change colour. Give air in the morning before the sun shines powerfully upon the leaves or house.

ARTICHOKEs (Charles Elliot).—The "runaway" flower-buds at the top of the shoots or stalks are, when they attain the size of a teacup, to be cut, boiled, and eaten. They are the eatable portion of Artichokes. They will not form anything edible at the bottom in the shape of tubers unless they are Jerusalem Artichokes, which we apprehend they are not, but Globe Artichokes. The first have a leaf like that of a Sunflower, and the second one more resembling a Bur Thistle, but glaucous. Look after the heads, and never mind the bottoms, only cover them as you did last winter, and fork the manure in in spring.

CALCEOLARIAS (Wm. H. Teignmouth).—Your Calceolarias are not equal to many we have seen this season, three or four good flowers, but not distinct from others. The generality of your seedlings lack form; a good Calceolaria must always possess the first and most important requisite, a circular outline.

SEEDLING PELARGONIUMS (A Gardener).—Your two seedling Pelargoniums are very delicate and pretty, and decidedly useful for bouquets and decorative purposes. They are not florists' flowers which could be grown for exhibiting. B seems the best flower, and the best trusser. If of good habit, cultivate both; they will be excellent for general use.

NAMES OF PLANTS (T. B. D.).—The tree in Lincolnshire from which you cut the flower you enclosed is *Paulownia imperialis*. (Caroline).—

Fedia oltoria. (G. B. B.).—*Claytonia perfoliata*. (*Lachenalia*).—1, *Halelia tetraptera*; 2, *Lonicera tatarica*; 3, *Pulmonaria officinalis*; 4, *Ajuga reptans*; 6, *Geranium sanguineum*. (*W. Taylor*).—*Pyrus aria*. (*W. L.*)—

1, *Halesia diptera*; 2, *Viburnum cotinifolium*; 3, *Crataegus subfœca*. (*W. H.*).—1, *Viburnum opulus*; 2, *Philadelphus coronarius*; 3, *Crataegus sanguinea*. (*R. T. Wheeler*).—*Malvastrum capense*.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 16th.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun... 10	30.018	29.979	83	43	63	58	S.W.	.00	Very fine; hot and dry, with hot sun; fine at night.
Mon... 11	30.067	29.884	74	47	63	58	S.W.	.00	Very fine; with white clouds; cloudy at night.
Tues... 12	29.671	29.552	66	44	63	58½	S.W.	.04	Overcast; densely clouded; showery.
Wed... 13	29.770	29.556	62	40	61	58	W.	.18	Heavy clouds; rather boisterous; rain; cloudy; rain at night.
Thurs... 14	29.961	29.930	72	41	60	57½	S.W.	.01	Partially overcast; fine, with light clouds; cold at night.
Fri... 15	29.946	29.826	73	42	60	57	S.W.	.01	Overcast; slight rain; slight rain at night.
Sat... 16	29.782	29.397	70	37	61	57	W.	.18	Fine, with clouds; rather boisterous; cold at night.
Mean	29.888	29.732	71.43	42.00	61.43	57.71	..	0.42	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

FIVE HOURS AT SALISBURY.

THURSDAY morning, June 7th, found me most unexpectedly on my way to Salisbury. I went thither by excursion train, the first I ever stepped into. I imagined all such must be crowded, noisy, disagreeable modes of conveyance, uncertain as to time of starting, and more uncertain as to time of arrival; but not so this one proved: all was quiet and orderly—no hurry, no confusion, and we started and arrived to a minute. Still, ever since I read Punch's epitaph on an old railway engine I have the more shunned excursion trains.

"Grown old and rusted,
His boiler busted,
He smashed the excursion train,"

I kept repeating. No, I did not want to repeat it; but that line would ring in my ear yesterday,—

"He smashed the excursion train."

But our engine was better-behaved—he did not smash the excursion train.

On and on towards Salisbury. Grass crops light everywhere. Now at Wilton, that little suburb of Salisbury—a mere village; its entire population 1930, and of that number upwards of 1000 females. Connected with Wilton are the name and deeds of that truly great statesman Sidney Herbert; its wonderful Byzantine church (I don't like it for an English church, though), seems now dedicated to his memory. Sidney Herbert—the one whom Lord Palmerston looked to as his successor—high-bred, courteous, manly, kindly, a fit successor to Palmerston; but it was not to be!

Here we are at Salisbury, omnibuses charging double of course. A mile to the show-yard. No change given there, for it is the shilling day, and no time to lose. I am within the show-yard, high, dry, and healthy; no fear of wet, for did I not leave my glass rising at Hilltop Rectory? My glass is my priest—a kind of better Pope, for I know it is infallible. Catalogue in hand, I now prepare to explore the Show. I open the map, always the best plan, and by studying it become master of the situation of every tent.

The cattle are, poor things, "conspicuous by their absence." "The machines in motion" are most conspicuous by their presence. Never did I see such a long row of puffing steam-engines—they made one hot to look at them. Implements vastly abundant. Said a farmer, "The expense of showing them comes out of our pockets;" but that was not the best thing I heard from an agricultural mouth. Sitting near the band, close to a good old-fashioned-looking farmer, wide in waistcoat and double in chin, he looked up at the motto of the Bath and West of England Society floating above us on a flag—"Work and Learn." "Aye," said he, "work and learn is it? Work at whoam, and then come and learn here, and then go whoam and work better, that's it." And a good explanation, too, of the use of an agricultural meeting. Implements! implements! I have no time for you. Picture-gallery—well, "very pretty." That's a safe criticism; it used to be that of Samuel Rogers. But why will water-colour artists make their ladies' faces so high-coloured? for rouge is not much used now-a-days. "Art-manufacture" tent, full of the fruits of man's ingenuity. Now I am at the "Horticulture" tent. What a blaze of Geraniums and Azaleas! but the colour toned

down by the graceful Ferns. This is right; too much colour, or colour only, makes the eye ache. Nature has plenty of green always, even in the Tropics. Beautiful flowers! Charming Roses! I see my old friends Cloth of Gold and Lamarque among them.

Next come the dogs—a first attempt at a show, and a creditable one; a late thought, and so not a large show. The first-prize greyhound was greatly admired, and Wilts is a first-rate coursing county. Many of our readers are doubtless familiar through the engraving with Landseer's "Uncle Tom and His Wife,"—I think I am right in the title—two bulldogs, wonderful as dogs, but not less wonderful in their likeness to niggers. Now, there was one bulldog at Salisbury, only one, and it was black, and its likeness to a negro was wonderful. It wanted but a queer hat or red handkerchief to be complete, so nigger-like yet canine, canine yet nigger-like. Horses next, but not a very satisfactory lot; but there were "darling ponies," as the ladies called them.

Well, there is the poultry tent at last, crowned by some dozen flags. Other tents have but one flag, but the poultry tent many, which is quite right—a goodly long tent, 300 feet by 40. A tall policeman graciously, almost gracefully, waves his hand, and bids me enter to the left, which is quite correct, for there before me stands Pen 1 of Class I.—viz., Spanish. Concerning the poultry generally, which my county paper most properly said "was one of the most attractive features of the meeting," there were upwards of three hundred entries, being about ninety more than last year. The Spanish class was a very good one. Lady Holmesdale was first with birds which cannot be shown again for some time, as they had nearly plucked themselves or plucked each other bare. Mr. Jones, of Bristol, was second. Wiltshire was well represented in Mr. A. Heath's four pens, one of which was highly commended. Class 2, Dorkings, was the largest class of all. Lady Holmesdale was first and second, her Rose-combed being the latter. Only a few White Dorkings were shown, but the first-prize pen was very good. Of Cochins, Cinnamon and Buff, there was but a small entry—very small; and the prizes went to Manchester and Birmingham, save the third to Miss Milward. Other Cochins were not numerous. The Brahmas were very good indeed, the Dark on the whole being the best. In Game, as usual, the Black-breasted and other Reds exceeded the other colours in number. It is not a good time of the year for Game. The prize Black Game looked, however, wonderfully well. The Hamburgs were all good. As a proof that they are not yet very general in the south and west of England I heard many humble folks (twas the shilling day), pause, and ask, and blunder about their names. Mr. Beldon beat Lady Holmesdale in Silver-pencilled, which was something to be able to do. Out of all the Hamburgs only one pen belonged to Wiltshire: this should not be. Then I mourned over there being but two pens of Black Polish. Good indeed they were, but why not more? Golden Polands but three pens, Silver but two! Again I ask some one to go vigorously into this variety of fowl. Malays, six pens—well, they may be handsome. Minorcas, Crève Cœur, and Any other distinct variety—I am surprised that so many appeared, but they make up a show. Among the single cocks were many good birds, the Cochins being least excellent. But one pen of Golden-laced Sobrights good—very good, but only one; Silver-laced four. But oh! my little Black friends, you are looking up—six pens of you to one White and nine Game! Ducks abundant, and many from

Wiltshire, Geese, Turkeys, Guinea Fowls, a goodly number. Then these supreme pets, Pigeons. Just as I was going to look at them my feelings were greatly hurt by my next neighbour—from Bœotia I should think—saying to his friend, "There, there! don't go along there, there's only Pigeons." Mr. Ord, Mr. Else, Mr. Fulton, Mr. Yardley, Mr. Heath, and Mr. Pigeon (by name and nature a fancier), sent good birds. The Show was remarkable for the number of Magpies exhibited, there being more of that variety than any other, except Carriers, which exceeded but by one. Among the Dragons I greatly admired a pair of White—they were elegance itself.

The poultry tent was all that could be wished, large, airy; but I regretted to see so many empty pens. Query, Was it the fault of these foes to poultry, foes by expense and delay, the railway companies? I think if to each railway director, wearing nickerbockers for the occasion, a few nice fierce Game cocks were permitted to set to, in an empty room, with no stick or any weapon allowed, it would be a proper punishment. How charming to see a gouty director hop and kick, kick and hop!

In conclusion I have a suggestion to make. The barley given is, of course, very heating at this time of year, and more especially to birds in confinement in a hot and crowded tent. This leads them to peck each other. I noticed a hen of Lady Holmesdale's second-prize Dorkings literally picking to pieces the rose comb of the cock—eating it, or getting the blood. This, I think, might be obviated by giving at the summer shows stiffly mixed oatmeal instead of barley. Three times I went among the pretty birds, and as the day advanced many were deterred entering from the great crowd; and, indeed, it was struggling back-bruising work, for poultry are popular with all. Many who do not keep them, nor even know their names, make a point of visiting their tent.

Four o'clock the show-yard became fuller than ever, and I take my exit. Often had I turned to look at the graceful spire of the beautiful cathedral, which silently in its beauty looked down upon the crowds. I now pay it a brief visit—see the wonderful chapter-house, now restored at the cost of £8000: very beautiful it is. In the centre of the octagonal building stands a pillar. High is the roof, and it seems to branch from the pillar as from a stem. The idea is that of a palm tree, and in truth it looks a petrified palm with its trunk chiselled. Welcome cool cloisters! Welcome a sit in the mighty nave, now happily used for service after centuries of disuse! Then shortly I go out to the cathedral close, so old world-like and quiet; a peep next at the "poultry cross," suitable after a poultry show; and one reverential look at the statue of Sidney Herbert in front of the Town Hall—a good likeness, and the figure very like—on the polished block of granite upon which it stands simply the two words "Sidney Herbert;" then on to the station, where punctual to a minute was my excursion train.—WILTSHIRE RECTOR.

PROFIT FROM DUCKS.

The following account of an experiment in feeding Ducks may interest some of your readers. Ten Ducks were hatched on April 11th, and eight on April 16th. Of the last brood one died, two were stolen by a dog, and one was accidentally injured. Of the remaining fourteen, one was killed when eight weeks old, and weighed 4 lbs.

Estimating the value of the ten at 3s. each, and four at 2s. 6d., we have the following result:—

	cost.	£	s.	d.		£	s.	d.
Eggs .....	.....	0	3	0	Estimated value	2	0	0
Toppings .....	.....	0	3	0	Deduct cost	0	12	1½
Food for two hens..	.....	0	1	0				
Loss of hens' time..	.....	0	1	0				
Oatmeal .....	.....	0	0	3				
Indian corn meal ..	.....	0	2	0				
Grains (beer) .....	.....	0	1	10½				
		£0	12	1½	Profit	£1	7	10½

The Ducks were the common farmyard breed. They were kept shut up, but for the last fortnight have been allowed to go into the water for one hour a-day before their midday meal. The only addition to the food here mentioned has been the refuse of the house and garden.—B. A.

BLACK BANTAMS AT BIRMINGHAM EXHIBITION.—Mr. E. Cambridge, 2, Brunswick Terrace, Stoke Croft Road, Bristol, wishes to have the names of exhibitors who would subscribe towards extra prizes.

HANTS AND BERKS AGRICULTURAL SOCIETY'S POULTRY SHOW.

This Society is growing wiser as its years increase, and it is not above following a good example. It sees how the Hants and West of England and the Northamptonshire Shows have increased and prospered by moving from place to place. It finds also the benefit of enlisting various towns as its friends and supporters. Its Show was in 1864 at Basingstoke; in 1865 at Winchester; and 1866 at Reading. Its advocates already speak of having a two instead of one day's show. This year will long be memorable as a trying one for agricultural meetings. It is a large gap that is made in the show-yard, when the rows that are devoted to horned cattle are empty; and as the attendance must be considered one that is made up of visitors to all the different classes, it may safely be said that if the number of admittances is a satisfactory one now, when happier days dawn upon us and the riderpest has become a thing of the past, when the addition is made of all that come to see and are interested in horned cattle, it may be estimated that a large success will be achieved. We are enabled by the courtesy of Mr. Downes, the excellent and able Secretary, to say now that the prizes will be increased in number next year, and new classes will be added to the present list.

Many of the birds that had been to Salisbury came here, and the condition in which they were shown reflected great credit on the managers of that great Show. We shall review the classes as they occur in the list; and, as the prizes are printed, we shall touch only on those points that seem to demand notice.

Dorkings were very strong. Capt. Lane's pen was a remarkable one, and if well cared for and judiciously managed they are destined to many more triumphs where the numbers may be much larger. Miss Milward's and Mr. Parlett's were very good; but the first prize was easily won. There were fourteen pens, and twelve of them excellent. There was one pen of *Rose-combs*, but we saw with regret that they were almost the smallest in the class, and we heard many remarks, from which we differed, that the *Rose-comb* were always smaller; and some were disposed to deny them rank as *Dorkings* at all. We are at a loss to account for the next class. Three prizes were offered for *Cochins*—£2, £1, and 15s. They produced two pens, both good; but the entries astonished every one. The merits of this breed deserve better than this, and when poultry assumes its proper importance we shall have no such classes as this. The *Game* were excellent; the *Brown Reds* of Mr. Cruwys, Mr. Dupe's *Black Reds*, and Mr. Cruwys' *Piles* left nothing to desire. *Polands* held their own, Mrs. Pettat taking second to Mr. T. P. Edwards. *Hamburghs* will next year require four instead of two classes. We had to notice the superiority of the *Golden* over the *Silver-pencilled*. Mr. Pittis, of the Isle of Wight, took both prizes. It is curious that the old *Golden* retain the correct and distinct pencilling, while the *Silver* become patched and mossy. Mr. Wood, of Kendal, showed an excellent pen of *Golden-spangles*, beating very good birds belonging to Mrs. Pettat. The classes for *Light* and *Dark Brahmas* would have done credit to any show. Mr. Pares took both prizes in the first class deservedly. The competition in the second was much closer, not so much for the first prize, which went to Capt. Lane, as for the second, which was awarded to Mr. Pickles, of Todmorden. Messrs. Johnson and Sherman deserve mention. It is intended next year to have *Bantam* classes. This will diminish the various class, which had *Game* and *Schright Bantams*, *Malaya*, *Andalusians*, *Black Hamburghs*. Mr. J. Hutton showed very good *Malays*, and Mrs. Pettat very good *Bantams*.

Mrs. Seamons took all the *Duck* prizes. There were but few *Turkeys*. Mr. Lang's were very large, and Capt. Warren's white ones in beautiful condition.

The attendance was very large, and the Meeting a success.

DORRING.—First, Capt. H. B. Lane, Bracknell. Second, Miss J. Milward, Newton St. Loe, Bristol. Third, F. Parlett, Chelmsford. Highly Commended, Capt. H. B. Lane. Commended, O. E. Cresswell, Hanworth.

COCHIN.—First, Miss Milward, Newton St. Loe. Second, Mrs. Seamons, Hartwell, Aylesbury.

GAME.—First, S. Dupe, Evercreech, Bath. Second and Third, Rev. G. S. Cruwys, Cruwys Morehard. Highly Commended, S. Dupe.

POLAND.—First, T. P. Edwards, Lyndhurst. Second, Mrs. Pettat, Ashe. Highly Commended, J. Hinton, Hinton, Bath; Mrs. Pettat.

SPANISH.—First, A. Heath, Calne. Second, Rev. J. de L. Simmonds, Chilcomb Rectory.

HAMBURGHS (Silver or Gold-pencilled).—First and Second, F. Pittis, Newport, Isle of Wight. Highly Commended, A. K. Wood, Burnside, Kendal.

HAMBURGHS (Silver or Gold-spangled).—First, A. K. Wood, Burnside, Kendal. Second, Mrs. Pettat. Highly Commended, R. Harman, Cowley, Oxford.

BRAHMA POOTRA (Light).—First and Second, J. Pares. Highly Commended, Miss Hayes, Arborfield Rectory.

BRAHMA POOTRA (Dark).—First, Capt. H. B. Lane, Bracknell. Second, J. H. Pickles, Bridgeroad, Todmorden. Highly Commended, G. Johnson, Fareham; E. Sherman, Chelmsford. Commended, C. Cork, Shoreham.

ANY VARIETY.—First, Mrs. Pettat, Ashe (Silver-laced Bantam). Second, J. Hinton, Hinton, Bath (Malaya). Third, Mrs. Pettat, Ashe (Game Bantam). Highly Commended, F. G. Phillips, Chippenham (Black Hamburgh); C. Coles, Fareham.

DUCKS.—First and Second, Mrs. M. Seamons, Aylesbury.

TURKEYS.—First, S. Lang, jun., Bristol. Second, Capt. R. P. Warren, Werthing.

GEESE.—Prize, Mrs. M. Seamons, Aylesbury.

RABBITS.—Longest Ears.—Prize, E. E. M. Roys, Whitechurch, Salop.

Self-colour.—Prize, G. Hill, Winchester. Foreign.—Prize, Mrs. M.

Seamons, Aylesbury. For *Variety* (to include all points).—Prize, G. Hill. Highly Commended, P. Warren, Southampton.
Mr. Baily, Mount Street, Grosvenor Square, was the Judge.

ARTIFICIAL SWARMS—STRENGTHENING STOCKS.

I AM looking anxiously for another "pure queen" which "A DEVONSHIRE BEE-KEEPER" so kindly promised in page 388, in order to supply my loss. At the risk of being tedious to your readers allow me to say that hitherto I have been quite successful in forming five artificial swarms from one stock this season. I have actually seen the queen in each hive, except No. 4, but I saw two sealed ones there a few days ago. No. 1, formed on the 3rd of May, contained eggs and rather large grubs on the 2nd of June, so that I presume the queen must have laid about the 29th of May—i. e., on the thirtieth day from the formation of nucleus. At twenty minutes before twelve to-day (13th of June), I saw the queen leave No. 3, but she returned almost immediately. I was looking for her return most intently when what I supposed to be a drone flew between me and the hive; it was the queen, which alighted immediately

afterwards. I mention this fact because I do not remember hearing the sound of a queen's flight before. Had I not seen what I have just related I should have been satisfied that the sound proceeded from a drone in search of a companion. I cannot, of course, tell what sort of season other counties are promising for bees this year, but I fear we shall not have a good one. Up to the 7th of June I did not hear of more than one cast or swarm. A considerable portion of the month of May was too dry, and now the weather continues gloomy and rather cold, with frequent showers. When my small swarm arrives it is my intention to transfer the bees to a Woodbury hive in the course of a day or two, and gradually to strengthen them by the addition of ripe brood frames from other hives. Will this plan not answer as well as the plan of driving?—E. B., CLERICUS, Cumberland.

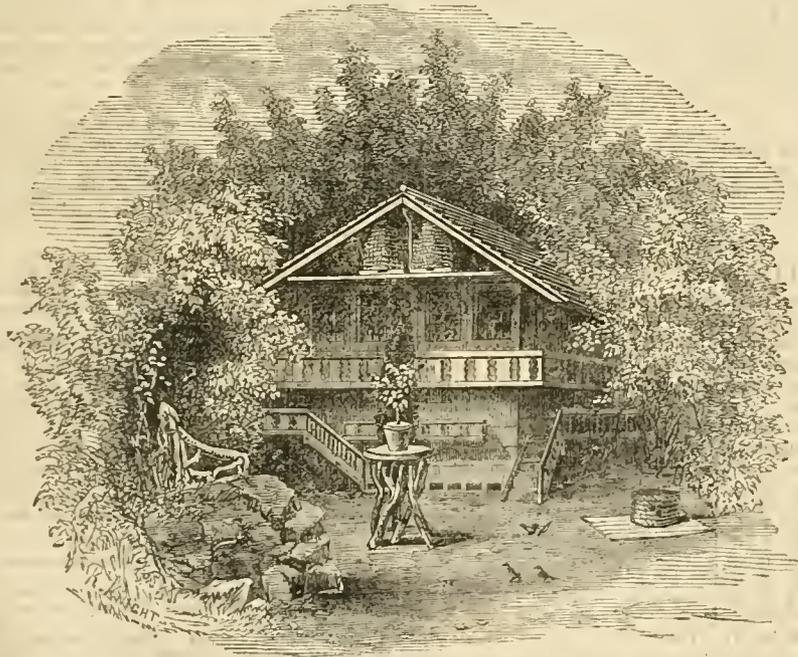
[Your pure Italian queen at the head of a small swarm will probably reach you about the same time as this Number of "our Journal." Your plan of strengthening the small colony by the gradual and judicious addition of ripe brood-combs is by far the best, and would have been suggested in preference to driving had I known that your hives afforded the necessary facilities.—A DEVONSHIRE BEE-KEEPER.]

MY APIARY.—No. 1.

HOW I CAME TO BUILD IT, AND HOW I WORK IT.

"Imprimis, sedes apibus statioque petenda."—VIRGIL.
(In the first place, stands and a station for the bees are to be sought.)

WHAT would appear to have been a matter of primary importance with bee-keepers in the time of Virgil has remained the same ever since. "Where shall I place my bees, and what sort of shelter must I provide for them?" is the first inquiry made by every tyro in the art; and the chances are, that although at his first start he was content with the low, rough block of wood (which time out of mind had been used by the old cottagers in the village) as a settle, and the jaunty straw hackle, or red milk-pan, as a covering for his bees, yet, if he has persevered in the work, and come, as most bee-keepers do come, to love his bees, and feel anxious to provide in the best way for their accommodation, he will, if he have the means at command, have gradually advanced from this stage of the art until his garden is furnished with some such useful and ornamental building as that which is represented by the woodcut accompanying these remarks.



My first stock of bees (in a cottage hive of course), was purchased about the year 1850, and placed in my garden on a block of wood, which, as there was no bottom board to the hive, seemed to form a necessary part of it. From this block it was speedily removed to a neat oak stand, such as is recommended in the useful works of Messrs. Taylor and Payne, and the swarms which issued from it were placed in Payne's flat-topped straw hives fitted with appropriate supers; then followed a trial of Nutt's collateral-boxes, after these Payne's square straw hive with bars; Golding's Grecian hive with bars, Payne's and Glennie's bar-boxes, were used in succession; next after these Teget-

meier's frame hive; and, last of all, J. I. Langstroth's moveable comb hive, which I have adapted to my own requirements, and which is the only one now used in my apiary.

As with the bee-hive so with the bee-house. There has been the same gradual progress here. My first was something after the fashion of a kitchen cupboard, fitted first for two sets of Nutt's collaterals, and, when these were given up, for four Grecian hives. The next was a house for myself as well as the

bees, being a common garden summer-house, which (by closing the opening with folding doors, and turning the back round to the south) furnished tolerable accommodation to both parties, and served the purpose very well for some years. But this, in its turn, was discarded and recon-verted to its original use, for the little Swiss cottage which is now used as my apiary, and at the same time forms a pleasing ornament to my flower garden. The design was borrowed from a brother clergyman, but the workmanship was my own, and as I do not consider myself a skilled hand, I may safely say it is not difficult of

construction. Since its erection about eight years ago, it has been much admired by my friends, and having during that time found it most convenient to myself for the purposes of observation and manipulation, and suitable to the requirements of my little favourites, as the results testify, I am glad to have the opportunity of recommending it to my apianian friends.

So much for the building of my apiary; in my next I will furnish dimensions, &c., when I describe, "How I work it?"—SIDERT-ON-THE-WOLD.

PREVENTING DRONE-BREEDING.

In managing bees on the suppling system drone-breeding is not profitable, and unless specially required may be dispensed with altogether. Now, I find that unless all the frames in a Woodbury box are furnished with comb before a swarm is put into it a large proportion of the empty space will be quickly filled with drone-comb; this I have in several instances cut out, but the bees obstinately refuse to take the hint, and will persist in providing accommodation for those honey-consuming idlers. I should be glad to know if there is any plan for inducing the bees to build worker instead of drone-comb? or if not, which is the better plan—to keep cutting out this troublesome comb, or allow the bees to have their own way? In other words, will the difference between the honey consumed by the drones in the one case, and the waste of time and material in the other, be in my favour or otherwise? and also, will the entire suppression of the drones have the effect of more effectually preventing swarming?—G. L.

[The use of the German artificial combs, or impressed wax sheets, will generally induce bees to build worker-combs. It is, however, scarcely possible, and even if possible we very much doubt if it would be found advisable, so to thwart Nature as to attempt the entire suppression of the male element in a hive, since, if no other evils result therefrom, an undue proportion of drone-comb is likely to be fabricated in the super, and there tenanted by the queen. We nevertheless often find it advisable to impose some limits to drone production; but when we remove superfluous drone-combs from a stock hive we do not trust the bees with the fabrication of new ones, but at once supply the vacancy by the substitution of worker-comb. Spare combs are so valuable for this and other purposes that we preserve them most carefully, and neglect no opportunity of adding to our store.]

CUTTING OUT COMBS.

PLEASE inform me if it be possible to cut out combs from a strong stock in a common hive. The whole stock, I should think, weighs at least 30 lbs.; but the bees will not work in a super. Having no bushes in our garden we lost our first swarm from this stock in May, and since then we have driven a swarm from it into a common flat-topped hive, where the bees are working famously. The old stock seems as populous and busy as ever, and we, the landlords, look on, wondering how by fair means or foul we can obtain our rightful share of their produce.—S. S.

[We do not deem it good practice to cut combs out of common hives, especially when, as in your case, a swarm has been secured in addition to the one which was lost—a measure of success with which you may well rest satisfied for the season. If next year you can furnish your super with some pieces of clean worker-comb, the bees will probably take possession of them promptly enough.]

MUSICAL BLACKBIRD.

In reply to Mr. Hewitt's letter, which appeared in your issue of the 5th inst., I beg to inform him that our groom has a blackbird which whistles "O, Susanna," very distinctly, though it seldom goes through the tune without a break, its favourite bar being "Don't you cry for me."

It is the only blackbird I have ever seen that could whistle a tune; but our groom tells me that he once knew a blackbird which whistled "The girl I left behind me" perfectly. He also says that blackbirds are best taught from a flageolet; but I must say that our blackbird's accomplishments are not much to my taste, and are in no way to be compared with the song of its wild brethren.—JAMES SNOW WHALL, *Workshop*.

P.S.—I never before heard of a talking blackbird.

EARLY SWARMS.—A man in this part (South Durham), had a first swarm from a hybrid queen on the 19th of May, and the second and third on the 4th of June. This is very early for this part, as we seldom have any before June 7th, and it would therefore appear that the hybrids are a good cross. Another person had a swarm from a crossed Ligurian queen (crossed last year), on the 30th of May, a very large swarm; and there can be now no doubt that, could the Ligurians be kept pure, they surpass the black bees.—A. W.

MATERIALS FOR WATER PIPES AND TANKS.

In reply to your correspondent "W. T.," I can inform him that galvanised iron is unfit either for the storage or conveyance of water. Water, soft water especially, quickly becomes impregnated with the metal, which imparts to it a hard quality, rendering it unfit for domestic purposes.

The best material for pipes is the enamelled iron tubes supplied by the Crown Tube Works, Wednesbury. The next best plan is to coat the ordinary iron pipes with a strong solution of asphaltum in turpentine. The tubes require heating in order to apply this mixture properly. The same may be advantageously applied to the inside of common cast-iron tanks. In all cases the asphaltum must be used as the cement at the joints in lieu of the red-lead lute that is in ordinary use.

Common pine wood also makes an excellent substitute for iron tanks where purity and cleanliness are essential. This can be coated with the asphaltum varnish. The wooden tank will last twenty years.—G. P. D.

In answer to "W. T.'s" inquiry in your last Number as to iron tanks and pipes, I beg to say, in reference to the latter, that some years ago we laid down iron pipes which were glazed inside and out, the end of one pipe fitting into a socket in the other, and the two being screwed together; washers of gutta percha were used in the sockets to keep them watertight. That must be ten or twelve years ago, and we have never had any trouble with them since, and nothing can be cleaner. I suppose the glass is put on in a liquid or molten state, and the whole surface is thus enamelled over, as it were. I should think tanks could be prepared in the same way.—J. K. J.

"W. T." wishes for information about galvanised-iron pipes and tanks. Having had a great deal to do with them I can recommend him to put down earthenware pipes if possible; if the lift is not great they will convey water better than anything else. I have water brought over a little valley with a lift of 15 feet. If the water "W. T." has is hard, common iron pipes will answer perfectly; if it is soft, they must be galvanised or lined with pottery, as they do now-a-days; for soft water rusts the pipes, but hard coats them with lime, and renders them durable and cleanly. If "W. T." has water constantly running, lead pipes will answer his purpose better than anything, but lead will not answer if the water has to stand. Cast-iron cisterns may be painted inside, and will last without another coat for years.—A SOLDIER.

I SHOULD recommend wrought-iron pipes heated and dipped in raw linseed oil while hot, having laid some treated in this way about twelve years since, and upon examination a few months ago they were found to be in a very perfect state. Some galvanised branches had to be taken out, and oiled pipes fixed in their places.—J. W.

OUR LETTER BOX.

SPANISH FOWLS AT THE BATH AND WEST OF ENGLAND SOCIETY'S SHOW.—The third prize was awarded to Mr. R. Wright, Holloway Road, London, and got to Mr. Parsley.

BRABMA POOTRAS BREATHING WITH DIFFICULTY (S. M.).—We are large Brahma breeders. In damp weather we have known them rattle in the throat for a few days, but have had no such visitation as you describe. It would not in any way affect them for table purposes. It is possible that the new-mown grass may affect them through the nostrils, and cause inflammation of the windpipe. We hazard this opinion because Hamburgs are not affected by it, and they are far more prone to disease than Brahma. Remove every vestige of the grass. Make your nests fresh on the ground with very little hay, and keep the eggs moistened. Put camphor in all their water. A warm sun for a week will probably cure them. The fowls seem so well that we do not advise treatment. You cannot do better than leave well alone.

LARGE VARIETY OF PIGEONS (G. Bradford).—Your Pigeons from Malta are most likely one of the varieties of Italian Runts.—B. P. BRENT.

DISEASED PIGEON (A Young Fancier).—Your Pouter cock has a core or tumour in his crop. With a sharp knife or scissors cut the crop open, cut the tumour out, wash the crop clean, and sew it neatly up; do not give the bird anything to eat or drink for a few hours, and sparingly at first. The bird may then recover, but much depends on cutting out the whole of the tumour, otherwise it will form again.—B. P. BRENT.

PIGEON DEALERS (A Constant Reader).—You will find such in the neighbourhood of Seven Dials, Club Row, and Hare Street, and Kent Street, Borough, as well as Leadenhall Market, and many other places.

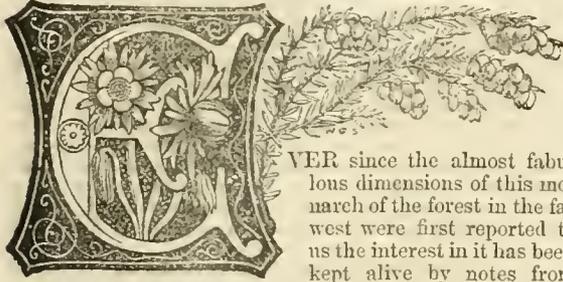
READING YOUNG LARES (A Subscriber).—Put the nestlings in a large cage, keep the bottom thickly covered with any sand or earth, and feed them on bread and cheese made into a stiff paste. You may add hard-boiled eggs and crushed hempseed occasionally. You can often pick out a cock bird by comparing it with its fellows, but the surest way is to wait till they begin to sing. The feathers on the Cochins' legs are most likely rubbed off, and will come again when the stumps fall out at moulting-time.—B. P. B.

WEEKLY CALENDAR.

Day of Month	Day of Week	JUNE 26—JULY 2, 1866.	Average Temperature near London.			Rain in last 30 years.		Sun Rises.	Sun Sets.	Moon Rises.	Moon Sets.	Moon's Age.	Clock before Sun.	Day of Year.								
			Day.	Night.	Mean.	Days.	m. h.	m. h.	m. h.	m. h.	m. h.	Dava	m. a.									
26	TU	Bossiaea linophylla.	73.8	49.8	61.8	20	46	af	3	19	af	8	38	af	6	49	af	2	14	2	27	177
27	W	Abronia mellifera.	71.9	48.3	60.1	14	46	3	19	8	29	7	31	3	15	2	40	178	15	2	40	178
28	TH	QUEEN VICTORIA'S CORONATION, 1838	73.2	49.4	61.3	15	47	3	19	8	12	8	22	4	O	2	52	179	17	3	4	180
29	F	ST. PETER.	72.3	48.7	60.3	11	47	3	19	8	53	8	19	5	17	3	4	180	18	3	16	181
30	S	Abronia pulchella.	72.7	48.1	60.4	12	48	3	18	8	26	9	33	6	18	3	16	181	19	3	25	182
1	SUN	5 SUN. AF. TRIN. P. LOUIS OF HESSE	72.3	51.5	61.9	18	49	3	18	8	57	9	26	7	19	3	25	182	20	3	20	183
2	M	Abutilon striatum. [Mar., 1862.]	73.3	51.4	62.3	15	49	3	18	8	24	10	35	6	20	3	20	183				

From observations taken near London during the last thirty-nine years, the average day temperature of the week is 72.9°; and its night temperature 49.6°. The greatest heat was 91°, on the 30th, 1862; and the lowest cold 34°, on the 26th, 1864; 28th, 1832; and 30th, 1863. The greatest fall of rain was 1.18 inch. N.B.—The Calendar contains the names of plants flowering in the greenhouse.

A FEW NOTES ON THE WELLINGTONIA.



EVER since the almost fabulous dimensions of this monarch of the forest in the far west were first reported to us the interest in it has been kept alive by notes from

travellers, by the arrival of seeds, their germination, and the healthy and vigorous growth of the plant in this country. Further, the reports of the magnitude of the tree in its native valleys were confirmed by the outer casing of one of these monarchs of the forest being set up in the Crystal Palace. Since the introduction of the Wellingtonia the demand for it has been duly supplied, and it has been planted in all manner of situations, and not a few plants adorn the front gardens of small suburban villas, where there is not the remotest chance of the tree attaining the dimensions of a medium-sized shrub without being in the way.

The rapid growth of the Wellingtonia seems to place it amongst the first favourites of the day for creating effect in a very short time, and its beauty as a tree, irrespective of the size it attains, gives it a claim which no other plant possesses. Nevertheless with all its good qualities it has its faults, and it is only fair to state these, but fortunately they are neither numerous nor such as cannot be amended, or rather avoided. Its principal fault is that it transplants badly after it has been more than one year in a place. This, I believe, is admitted by all.

The question then arises, Which is the best time to plant it? My own opinion, as well as experience, would point out the early autumn months—say September and October, but this I expect must be accepted with some qualification. In seasons like the last the plants with me grew at least as much after the 1st of September as they did before that time. Would it, therefore, be wise to disturb that growth by transplanting the trees so early? Circumstances often render the delay of transplanting imperative, and it has, therefore, sometimes to be performed at seasons most unfavourable to the welfare of the tree, but it is so accommodating at times when its success is doubtful that unexpected results follow. In my own practice I believe that I have planted Wellingtonias in every month in the year excepting August and September, and I am not certain that these months are not the very best. I have seen carefully lifting a few plants in July attended with tolerable success, and October is very good, but a like result did not follow planting in January; for though a portion of the plants grew well, others died off. I believe April to be better than mid-winter for planting, more especially if the trees have been standing thickly together in nursery rows, for to isolate them in exposed places at that time is, I believe, as hurt-

ful to the top as to the roots, and they fail. It is probable, therefore, that planting in October will be attended with the best results, and what I have done at that time has been so. There are, however, other conditions proper to be observed in the planting of Wellingtonias, as well as of all other Pinuses, which it would be well to bear in mind; but as failures are equally instructive as successful management I herewith give an example of both.

In the middle of October, 1863, I planted in nursery rows a number of Wellingtonias that had previously been in small 60-pots. None of the plants exceeded 6 inches high, while most of them were not more than half that height. The soil was of a loose open nature, with plenty of stones in it, and it had previously been cropped with Potatoes and other common vegetables. I may remark that during the winter the little plants were anything but promising, and many persons prognosticated their failure. Their brownness was no doubt in great measure owing to their roots being dis-entangled and carefully spread out straight from the collar, which, however, was not always done without fracturing now and then a stiff crooked root; but it was persisted in, for I had seen enough of the evils of transplanting trees that have been some time in pots, and therefore I determined to remove all trace of their having been so treated. The ordeal unquestionably checked growth, and the plants did not commence to grow till the summer was somewhat advanced, but very few of them failed, and the growth of the whole was pretty fair. Two of the plants that I took up that autumn were nicely rooted, and bore the removal well; but circumstances prevented the whole being taken up then, and they remained another year in the ground, where they made rapid growth, most of them being 5 feet high, and well furnished at bottom. The fine autumn, or rather the rains we had in October after a period of very dry weather, prolonged their growth so much that I believe they kept on growing until December, when it was determined to remove them. Here was the error; had we done so earlier, say in October, I believe that we might have been successful, but it happened that we could not do so at that time, and it was January ere they were finally planted out. Although better rooted plants could hardly have been wished for than most of them were, their success has been far from satisfactory, several having died, others partially so, while some have apparently scarcely felt the change, but the latter are in the minority. It may be said that they were allowed to remain too long in their position in the nursery, but two years is not a long time for trees and shrubs in an ordinary way; and some two hundred or more Cupressus Lawsoniana that were treated in exactly the same way as the Wellingtonias, and transplanted at the same time, have scarcely experienced a check, although their growth equalled that of the Wellingtonias. It may, therefore, be set down as an established fact that the latter is one of the classes of plants which do not bear transplanting well after having been more than one year in a place. This is unquestionably a drawback, but it is amply compensated for by the good qualities of the tree.

I will now mention two or three of these good properties.

The first of these is its capability of withstanding wind; for the trees in the most places seem to be little affected further than being merely slightly bent in the direction towards which the wind blows, and the plant being more sturdy, and usually better furnished at bottom. Another good property is that of quickly replacing the leading shoot, should any accident damage or destroy the proper one. Several instances of the tree having done this have occurred here. One fine tree, now upwards of 20 feet high, lost its leader twice, it being cut off some 8 or 10 inches each time, and it would be impossible now to discover where this occurred, although these accidents only took place in 1863 and 1864. Another point is the adaptability of the plant to all kinds of soils, light and heavy appearing to be alike suitable; and whether limestone or peat prevail, the tree seems to be equally at home. In general, however, I believe it succeeds best in a deep rich soil, such as we all like for a kitchen garden; but a good healthy subsoil seems as much to its liking as the character of the surface. I have never seen the Wellingtonia tried in a situation where moisture is stagnant, and it can hardly be expected to do in such a place; but to all others it seems to accommodate itself. Its hardiness has been sufficiently tested to place it second to no Conifer in that respect, and many other merits might be enumerated.

Although I have stated that the Wellingtonia transplants badly after being too long in one place, it is but justice to add, that it is by no means one of the worst plants to remove. *Cupressus macrocarpa* is certainly worse, and *Taxodium semper-virens* is not by any means good. In general, Thujas and Thujopses transplant well; but, perhaps, one of the most difficult plants to remove with success is the Evergreen Oak.

Those having remarkable trees of the Wellingtonia would confer a benefit on the readers of this Journal, by publishing the dimensions of their specimens. This and other information could not fail to be interesting.—J. Ronson.

HARDY EUCALYPTUS.

ANY of your readers who may visit Ken Gardens will probably be as much surprised as I have been to see a large tree of *Eucalyptus polyanthemus* growing freely in the open border, and apparently as hardy as any Laurel. Judging from its size, it must have seen the thermometer at zero several times during its existence. In Don's work this species of *Eucalyptus* is not enumerated.—G. S.

BIRTH OF GARDENING IN ENGLAND.

I HAVE been asked and have agreed to deliver a lecture upon the rise and progress of gardening in this country. There is no deficiency of information on its advance since the first Stuart ascended the throne of England, but I cannot resolve where to begin. Will you advise me?—P. T.

[No art is encouraged until there is a popular taste for the subjects within that art's province. Now, there was no taste for either fruits, kitchen vegetables, or even flowers as objects of culture at the commencement of the Tudor dynasty, nor was that taste much developed until the reign of Elizabeth. It is recorded in the reign of Henry VIII. that even salading was imported for the Queen's table; and in the first year of Elizabeth, 1559, a state paper enumerating certain "necessary and unnecessary wares" imported into London from abroad records that "Cabages and Turnops to the value of £157 16s. 8d." were so introduced.

A taste for gardening, both for ornamental and useful purposes, however, was generally aroused in the reign of Elizabeth; and in proof of that we will quote a few passages from the recently published "Calendar of State Papers," edited by Mr. Lemon.

The Royal Gardens seem to have been resorted to for stock to furnish her courtiers' gardens. Thus Armigill Ward, writing to Cecil in March, 1561, says that the gardener at the palace at Greenwich will furnish him with Lavendar, Spike, Hissop, Thyme, Rosemary, and Sage, and if more be required Hampton Court and Richmond can be sent to.

In September of the same year Cecil wrote to Windebank to help him to a man "apt for his garden;" and in the year following to send him over a Lemon, Pomegranite, and a Myrtle tree, with directions for their culture, adding that they may be brought to London with Mr. Carew's trees. They were sent, and Windebank states that the Lemon tree cost 15 crowns, and the Myrtle trees 1 crown each, "which is very cheap."

Bishop Grindall, writing to the same statesman in the August of 1566, expresses his regret that he has no other fruit than Grapes to send him.

We could make many more quotations similarly illustrative of the general awakening of the love of horticulture at that period, but we have published enough to sustain our opinion, but if you desire more we shall be very ready to furnish you with references.]

THE HYBRIDISATION OF FERNS.

ONE of the most interesting of gardening occupations, if not the most interesting of all, is, indisputably, the fertilisation of plants with a view to change the character of species, or to obtain new forms or hybrids.

Whilst we watch with a lively interest the progress of plants which have been fertilised one with the other—a process which in Phanogams is perfectly clear to us, because their organs, whether large or small, can always be distinctly seen, we are, nevertheless, still in darkness as to the fecundation of Ferns and the mode in which it is effected.

The profound and interesting investigations of Münter, Lechinsky, Wigand, Schacht, and others have established the existence in Ferns of reproductive organs of both sexes (antheridia and archegonia), which are borne upon the under side of the pro-embryo (prothallium)—that is, the foliaceous body, which results from the germination of the spore. In conformity with these investigations, which would give to the pro-embryos, so to speak, the character of flowers, most physiologists are of opinion that the artificial fertilisation of Ferns would only take place when the pro-embryos of two distinct species were brought into close contact. The opinion that fertilisation might be effected on the frond at the time of the spores being formed (and this would be analogous to what takes place in Phanogams, and would appear to me more in accordance with the laws of nature), has up to the present time found scarcely an adherent, although from what I have understood, Schacht in his latter days declared himself in favour of this theory.

The above opinion was expressed about ten years ago in "Bonplandia," I believe, by my friend Mons. F. Stange, of Hamburg, but with the details of the article in question I am not acquainted. The experiments which I have made on the hybridisation of Ferns link together, perhaps, the two theories, without admitting either to its full extent. I am inclined to believe that a kind of fecundation takes place at the very moment at which the spores commence to germinate, and when the gelatinous mass of the different spores commingles, and becomes mutually transformed long before a pro-embryo has been produced.

My principal reason for doubting the fecundation of pro-embryos is the fact that a large number of hybrids are frequently found together side by side. Contact between the pro-embryos, therefore, could not have taken place, and it also appears to me that we likewise cannot admit that all these hybrids could have been produced by the mutual opening of the reproductive organs, which takes place as if at a bound. I have my doubts as to fertilisation having taken place on the fronds, because I have obtained hybrids from species which have not been in contact with others of their kind, as I shall now proceed to show.

Some years ago I reported in "Wochenschrift," published at Berlin (1859, page 183), that I had obtained a new and interesting hybrid *Gymnogramma* between *G. chrysophylla* and *G. lanata*. Professors Koch, of Berlin, and Reichenbach, of Leipsic, did me the honour of naming it *G. Stelzneriana*. All the plants of it which I have raised had this peculiarity—namely, that nowhere did they produce spores, although they were in the hands of the most experienced English and German cultivators. I even grew some specimens myself with fronds 3 feet in length, but they did not produce spores, and I believe that the plants which I raised at the above period have now everywhere disappeared. Three years ago I again succeeded in obtaining the same hybrid by sowing *Gymnogramma chrysophylla* and *G. lanata* in the following manner:—I collected on a piece of white paper the spores of the two, and after mixing them as much as possible, sowed them together. In this way I succeeded in obtaining a good proportion of *Gymnogramma Stelzneriana*, which, nevertheless, exhibited two different characters. Some individuals were in every respect like those obtained in 1859, the under side of the fronds being covered with golden dust, and the young fronds slightly crested at their extremities; whilst the others had narrower, more hairy

fronds of less size, and not so powdery. The most singular part of the affair was, that all the plants of each character after less than a year's cultivation yielded perfect spores, which on being sown reproduced the varieties, and their fronds are three times the size of those of their parents. I also made experiments with *Gymnogramma gracilis*, *pulverulenta*, *argyrophylla*, *L'Herminieri*, and *Laucheana* sown indiscriminately together.

The spores of *Gymnogramma gracilis* were those of a plant which I had grown some ten years, when that Fern was quite new, and it was isolated not merely from every other *Gymnogramma*, but also from every other Fern, for it was the only one in the house; the spores of the other species came from plants which had never been in any way in contact either with *Gymnogramma gracilis* or *G. tartarea*. The results were as follow:—

Gymnogramma pulverulenta sulphurea.—Both sides of the fronds were covered with pale yellow dust. I only obtained three plants, which I unfortunately lost in winter.

G. gracilis hybrida, intermediate between *G. gracilis* and *G. lanata*, and resembling *G. tartarea*. Some of the plants are densely covered with a bright silvery dust, others with a yellowish white dust, and in others again it is altogether wanting. All are covered at the base of the fronds with a dense brown down more or less deep in colour.

G. gracilis elegantissima, with very finely-cut fronds densely covered on both sides with a yellowish white powder.

G. gracilis superba, the most ornamental and valuable of all. The fronds, which curve very gracefully, are not nearly so finely cut as in the preceding, but are broad, of a bright glossy green, with a metallic lustre on the upper surface, and covered beneath with a very thick coating of yellowish white powder. This is one of the hardest of all *Gymnogrammas*.

G. hybrida davalliaefolia, the result of a fertilisation of *G. L'Herminieri*. Its merits consist in the number and fineness of its pinnules, forcibly reminding one of some graceful *Davallia*; its fructification is also very ornamental.

Gymnogrammas are readily crossed, but up to the present time other genera have not produced hybrids. I have, it is true, obtained some variations of form, such as *Davallia tenuifolia stricta*, a tufty variety of *D. tenuifolia*, and *Pteris aspericaulis* from the seeds of *Pteris tricolor*, which may, perhaps, tend to prove that the latter is only a hybrid or variety of *Pteris aspericaulis*, and all the more because it is absolutely the same as the latter in its mode of growth. These forms remind one of the hardy Ferns, most of which are so interesting and ornamental, and of which the spores always reproduce the same forms, as I found some years ago by experiment on *Athyrium Filix-femina Frizellii*, and again more recently in the case of *Osmunda regalis cristata*.

Did the last-mentioned forms also result from fecundation? I do not think so, because there are plants, though comparatively few in number, which return to the type after having preserved for a whole year the character of a particular form of that type.

Experience has taught me, as it has many others, that the pro-embryos can be preserved as long as the plants themselves, and that they can be divided and thus serve for propagation where the number of plants obtained is small. All that is necessary to be done is to cut off the young plants with a very sharp knife, always taking care to preserve the pro-embryos. It is more particularly to those of tree and other very large Ferns that this mode of proceeding applies.

My experiments have likewise taught me that a high temperature hastens and is favourable to the germination of the spores, and their hybridisation. I always give a sufficient degree of heat to kill every Phenogamous plant.

As a nurseryman my experiments have naturally been limited, only extending to the most ornamental species sought after in commerce; and for the same reason I could not afford the time and the appliances necessary to attain a definite result if such were possible. It is the part of practical gardeners to perform horticultural labours with intelligence, and to observe the facts and appearances which serve to guide men of science in profound and intricate investigations.—A. STELZNER (*Bulletin du Congrès International de Botanique et d'Horticulture à Amsterdam.*)

PEAR BLOOM ON THE YOUNG WOOD.—A Pear tree, which I believe to be the Easter Beurré, growing on a wall at Fordham Abbey, is well covered with fruit as large as Walnuts. At the

same time a shoot of the present year, has a bunch of blossoms (unfertile) fully expanded.—W. C.

NEW SEEDLING ROSE—MRS. WARD.

I HAVE received from Mr. Ward, the raiser of one of our most renowned English Roses—John Hopper, some blooms of another seedling of his own raising, which, I do not hesitate to say, will in my opinion prove a worthy compeer to that celebrated flower. Not content to run into the common track, and to add another to the many children of Général Jacqueminot with which we are already inundated, he has taken as the parents of his seedlings Jules Margottin and Comtesse Cécile de Chabillant, two of the very best Roses we have; and in the case of Mrs. Ward he has obtained a Rose which partakes most clearly of the qualities of both parents. In shape it is like the Comtesse, beautifully shell-like, with very thick petals. As to colour, it has the colour of Jules Margottin in the centre of the flower, and that of the Comtesse in the outer petals. In habit it partakes of the character of the Comtesse (which, strange as it may sound, is the male parent), the wood being very stout and spiny. I know Mr. Ward's ground well—worse Rose ground I do not know; and I am quite confident that when this Rose is grown in good strong soil it will prove to be one of the very finest exhibition Roses we have. I have been lately through the Rose gardens of Lyons and Paris, and I have seen no new Rose equal to this, and I consider Mr. Ward to have been most fortunate in raising it. I was not wrong about John Hopper, and I am tolerably certain I am correct in my estimate of Mrs. Ward also.—D., Deal.

WEATHER WISDOM.

(Continued from page 348.)

THE report of a Committee appointed to consider "certain questions relating to the meteorological department of the Board of Trade" has recently been issued,* and I think that a few extracts therefrom will not prove uninteresting to those of your readers who have neither the time, will, nor the opportunity to wade through the pages of a parliamentary blue book. The subject of the report is intimately connected with "weather," and the book is well worthy of the study of those who try to attain to "weather wisdom."

The first part of the Report treats of the meteorology of the ocean; the second, of "The prognostication of weather in the British isles, together with observations of the changes of weather within or near these limits, for the purpose of ascertaining the laws upon which such prognostications are or ought to be founded." It is to this section of the report that I now purpose calling the attention of your readers.

The practice of telegraphing and foretelling weather began with the late Admiral Fitzroy (see Report, page 17). Storm-signals were hoisted for the first time in February, 1861, and in August of the same year daily forecasts of the weather, of which a specimen is given in the Appendix, page xxix., appeared in the newspapers (Report, page 19). This system it seems was not confined to the British isles alone. The Report says, "M. Le Verrier has organised a system of storm-warnings similar to our own. For some time his bulletin contained predictions of the probable weather for different parts of France, but we observe that these daily predictions have been recently discontinued." At page 19 of the Report, the public are initiated into the mysteries of English weather-forecasting.

"In making daily forecasts, the area of the British isles is divided into districts, and the average state of the weather in each district is deduced from the weather reports received from the stations contained within it.

"A daily forecast for each district is then made provisionally.

"The separate forecasts are next collated and revised, regard being paid to the following particulars:—

"(a) The mutual actions of the estimated weather in each of the districts of the British isles.

"(b) Scattered information in respect to such distant areas of high and low barometer as the continental stations can afford.

"(c) Geographical conditions of mountain, plain, or sea, by which the free movements of the air may be affected.

"It is the custom of the department to perform the whole of

* "Report of a Committee appointed to consider certain questions relating to the Meteorological Department of the Board of Trade." London: George Edward Eyre, and William Spottiswoode. 1866.

the foregoing operations, and to determine the forecast after a simple inspection of the list of weather-returns. No notes or calculations upon paper are made. The operation occupies about half an hour, and is conducted mentally."

In Appendix, page xx., are certain maxims, which it appears are employed by the department in forecasting weather. "Some of them," says the Report, "rank among the long-established truths of meteorological science, while others are clearly open to considerable doubt."

The Committee next compared the daily forecasts with facts, and with each other. They report, "though it is under the circumstances impossible to make an exact comparison of forecasts with facts, it is possible to make an exact comparison of the forecasts with each other—i.e., to compare the forecast for Thursday made on the Tuesday with the forecast for Thursday made on the Wednesday. * * * * * The forecasts made on two succeeding days for the third day differ from one another in every possible way." Your readers will not, I believe, after such a statement be surprised at the report of the Committee, upon the utility or inutility of daily forecasts (page 23). "As regards the utility of the daily forecasts, we have to observe in the first place, that if there is no sound basis on which they are founded, and no evidence that they have been correct in point of fact, they are wanting in everything which can render them practically useful. But even independently of this, we doubt whether intimations of ordinary coming weather so vague as these forecasts must necessarily be, can be of any real value. If it were possible to tell the sailor in a particular part that the wind for, say, twenty-four or forty-eight hours would be westerly, or to tell the farmer in a given district that he would have rain within that time, or to tell the gardener that his crops would need protection from frost or hail, or to tell the traveller that the weather would be propitious for his journey—these predictions if correct would be useful. But nothing of the kind is attempted. The forecasts indicate, as the department has repeatedly stated, merely the opinion of the department concerning a probability. They extend to large districts without attempting to describe the varied particulars of weather in different parts of those districts, and they thus fail to give that information which alone could make such predictions of practical value." Very soon after occurs this important passage: "And we may add that we can find no evidence that any competent meteorologist believes the science to be at present in such a state as to enable an observer to indicate day by day the weather to be experienced for the next forty-eight hours throughout a wide region of the earth's surface."

Next as to the storm-signals. Storm-warnings seem to have been more satisfactory, though there is considerable room for improvement. How these warnings have been appreciated may be gathered from the abstract of opinions concerning the value attached to them at the present time (see Appendix, page xxxvii.)—opinions certainly most favourable. The Committee themselves say (page 34)—"There would be great regret if they were discontinued." And further on (page 42)—"The system of weather telegraphy, and of foretelling weather, is not in a satisfactory state. It is not carried on by precise rules, and has not been established by a sufficient induction from facts. The storm-warnings have, however, been to a certain degree successful, and are highly prized."

In conclusion, the Committee pay a tribute to the energy and devotedness of the late Admiral Fitzroy. "To his zeal and perseverance is due the credit of establishing a system of storm-warnings, which is already highly prized by the seafaring class. And if a more scientific method should hereafter succeed in placing the practice of foretelling weather on a clear and certain basis, it will not be forgotten that it was Admiral Fitzroy who gave the first impulse to this branch of the inquiry, who induced men of science and the public to take interest in it, and who sacrificed his life to the cause."—X., Surrey.

BIRMINGHAM ROSE SHOW.—Friday, the 29th inst., is the last day on which entries can be made to exhibit at the forthcoming Rose Show, to be held in the Town Hall, Birmingham, on Thursday and Friday, the 5th and 6th of July next. If the copious rains which have recently fallen are followed by such warm sunny days as we may reasonably expect, there can be no doubt about the quality of the Roses which will be staged. Indeed, in that event we may venture to anticipate that the days fixed for the Show will prove most fortunate for catching

the Roses at their very best. Manufacturers of whatever is of interest to the amateur or professional gardener, either to use as an implement or otherwise, or as ornaments in the garden or greenhouse, have every inducement offered to send their goods to this Exhibition. We hope there will be, as usual, a good and varied display.

A PEEP AT THE WOODS IN ODD PLACES.—No. 8.

THE MISSISSIPPI.

"AND a half four!" sings out a lusty voice, and immediately afterwards another voice, which I recognise as that of the captain, exclaims "Stop her!" and I at once feel that the engines are stopped, and then I hear a shout of "Stand by the anchor!" and then, "Let go!" on which follows a heavy splash, and then a tremendous rattling, which shakes the vessel from stem to stern. I quickly tumble out of my berth, and dressing, go on deck, where I find already assembled a large number of passengers, all anxious to know what is the matter. "Nothing, my dear friends, nothing; we have only arrived off the bar at the mouth of the Mississippi, and have come to an anchor to wait until such time as the pilot thinks he can drive her over, as there is here a slight rise in the tide; but we draw some inches more water than there is on the bar, and another large American steamer has stuck in attempting to cross, and lies in the deepest place, so you may rest quietly, and in the afternoon or early to-morrow morning we shall endeavour to get over and steam up the stream to New Orleans. It is not far, only a little more than a hundred miles, and we shall soon be there."

"Go a-head!" exclaims the pilot, and we are once more under steam and steering for the bar. We cross it safely and without sticking, although we have had a hard push through the mud, and now we are in fourteen fathoms of water, with no fear of grounding, unless we run on the banks or some spit; but of that there is no fear, as our pilot is well acquainted with the river, and it is deep enough and wide enough for any craft that can possibly enter. So, now being safe, let us take a look around that we may know in what sort of country we are.

On both sides we see long, low, flat banks—that is, we fancy we see them, for in reality we do nothing of the kind, since that which meets the eye, and appears like *terra firma*, is composed of a continuous bed of reeds growing on the silt, *débris*, rotting trees, and general rubbish, which has been carried down generation after generation by the mighty "Father of Waters," that being the interpretation of the Indian name Mississippi. Reeds, reeds, nothing but reeds, except where diversified here and there by a dead tree, brought down by the current and stopped on the edge of some mud bank to assist in forming an islet, which will be joined on in course of time to the mainland; nothing but reeds till we reach Pilot Town. All this stream, although so close to the sea, is fresh water, or at least quite drinkable, and these reeds are exactly similar to those we find at home in the ponds and pools of old England.

Soon after passing Pilot Town the banks on one side begin to rise a little, and stunted specimens of trees, or rather bushes, begin to show themselves, the first to be noticed being Willows; and it has a very strange appearance that, whilst the banks of the river have a green margin, all the back portion of the country presents on one side an undulating surface of greyish brown from these reeds, whilst on the other we are divided from what is absolutely salt water by a very narrow neck of land. The bed too, of this fresh-water river will be at least from 5 to 7 fathoms below that of the sea divided from it by a strip of land, in many places not exceeding 100 yards in width. Proceeding further up the stream vegetation begins to be a little more varied; the Willow bushes are of larger size, and the Cedar begins to show itself—small, miserable, and stunted at first, though of a much finer growth as we proceed; and here again, in place of cormorants, pelicans, cranes, and canvas-back ducks, we begin to meet with small land birds, kingfishers, turkey-buzzards, and crows. Speaking of cranes and turkey-buzzards, I cannot help mentioning a curious little scene presented to us going up, which would have made a really pretty vignette. Passing along the bank within a distance of a very few yards we came suddenly upon a nook, the edge overhung and shaded with reeds, Willows, and Cedars, whilst the mud from the bed of the river ran quite up to them, forming a bank uncovered by water. Upon this lay, dosing in a half torpid state, for it was now far on in November, a large alligator, about 12 feet long, whilst washed up in one angle of the nook

was the carcase of a bullock, around which were congregated a number of turkey-buzzards, and not far off on the edge of the water were standing three beautiful white cranes in all dignified solemnity, looking out for fish, and, to fill up the whole picture of life, numbers of blackbirds flitted about amongst the branches.

These blackbirds are not like ours, although they are so called, for whilst ours are only found in pairs, these are often seen in flocks of many thousands, not being like our beautiful bird stationary and possessed of a delicious note, but migratory and songless, at least only uttering a snatching twitter, not at all like a song, and quite unlike the rich mellow tones of our own exquisite yellow-beaked friend. These seem to belong to all parts of the American continent, for a friend of mine tells me that he has seen them by thousands in Texas and on the Amazon, and I have myself seen them equally plentiful in Canada and Louisiana. The kingfisher which we see on this river is likewise common in Canada, being a bird with a body about the size of a cuckoo, with a large crest, and the plumage white underneath, and blue-grey on the back.

We now begin to see patches of cultivated ground on both sides of the river and trees of some magnitude, along the bank, or levee as it is here called; for a firm, solid bank runs along each side to keep the water from overflowing the land, and this bank has to be kept in repair at the expense of the planters whose property runs up to it, each bearing the expense of such portion as borders his estate. This tax falls very unevenly, since some large plantations are only very narrow, and run directly up from the river, leaving only a small portion of the levee to keep in order, whilst others not nearly so large lie along the bank, and consequently give a much greater extent to attend to, and therefore cause the proprietor much more expense. These plantations were before the war in a most thriving condition, being many of them of very large size, and employing a great number of negroes, and it is most melancholy as you pass up the river to see so many really beautiful houses, with their accompanying little hamlets of nigger quarters, almost entirely untenanted and deserted, whilst noble sugar mills look cold and neglected, with broken doors and other unrepaired damages, and without a vestige of life about them save in the luxuriant growth of rank herbage, silently but surely working out the ruin already begun, and covering with a green leafy veil the rottenness and decay it has already been so instrumental in producing.

All this, however, is now being altered, and the plantations will speedily be brought to their former state of cultivation and richness, though it is very doubtful whether such can be the case with free coloured labour; for niggers will not work like white men, treat them and pay them as you will, for they are naturally careless, lazy, and thoughtless, and certainly carry out the principle, "Sufficient unto day is the evil thereof;" yet there is such a large amount of emigration setting in from Europe towards the Southern States that the nigger will be compelled to work, starve, or migrate. It would indeed be a good thing for America should the blacks be "wiped out" from among its people. England has paid dearly enough for the emancipation of the negro in her West Indian Colonies—property depreciated to an almost fabulous extent, the emancipated slaves became saucy, idle, and truculent, and at last they culminated in attempted rebellion. I can only say, after a considerable acquaintance with the blacks, May they get their deserts.

What can that fine-looking house with the verandah round it be, placed in a beautiful garden with the walk up to the front entrance bordered with noble Orange bushes in full bearing? I call these bushes advisedly in contradistinction to Orange trees, for those which line the drive or pathway up to the main entrance of a Louisiana planter's house are strictly bushes, and often slashed or clipped in the same manner as the trim neat hedges in many parts of England are treated, or as the evergreens such as Yew, Holly, Portugal Laurel, Box, &c., used to be trimmed into those strange, precise, uncomfortably neat-looking, unnatural shapes which used to so delight our ancestors under the title of the Dutch style of gardening, and on which one cannot look without visions of stately dames in long-waisted dresses, with hoops (not the present degenerate flimsy fashion, all sweep, shake, and nothingness, like a balloon, which, being ript, collapses, but good stiff wooden tub-hoops that would stand a push without giving way), and beaux got up extensively in powdered periwig, huge white cravat with lace ends, ruffles, sword, and all the et-cetera of a swell of the year 1700, or thereabouts.

The Orange bushes in these gardens as well as the trees are tended with great care. They produce a most delicious fruit, and bear the soubriquet of Creole Oranges to distinguish them from those brought from Havanna, these latter being generally smaller, redder-skinned, and lacking the peculiar sub-acid so agreeable and remarkable in the Creole fruit, which is also very much more juicy than its foreign relative. Many of these trees are most enormous bearers, and I have heard of one tree which produced 1300 Oranges in one year, though I think this must be a slight exaggeration, since 500 are considered a large yield, but it is a fact that in many places they are so plentiful as to be scarcely worth gathering.

We will now pass by this Orange-orchard with its lovely dark and bright green foliage, golden fruit, and delicious perfume, and get over the fence into that field of what appears to European eyes to be either enormous coarse succulent grass, or most gigantic Leeks planted in rows and carefully weeded and kept in a clean condition. This is a sugar cane plantation, and as the cane is ripe we see hands in another part of the field cutting it and laying it in rows ready to be taken away in carts and passed through the mill, whence, after the juice has been expressed, it is again brought to be used as fodder for the cattle, they being very fond of it, and growing excessively fat upon it. However, whilst we are talking, and it is tremendously hot, let us go under the shade of these trees at the edge of the forest; but, as it is somewhat low and swampy, look out for snakes and alligators, though give them time and either will get out of your way. "Oh! how lovely, how picturesque, how very elegant!" I fancy I hear some of my lady friends exclaiming, as we look at these tall straight-limbed trees; and yet how solemn and funereal is the scene before us! and what a strangely striking object is that noble tree which seems to be clothing itself in grey weeds and plumes ready for its approaching death, for as it adds to its mortuary banners so does it become choked and its sap dried until it becomes a leafless barkless trunk. This is caused by a parasitic plant here indiscriminately called Moss and Barbe d'Espagnol, which grows on the branches of the trees, hanging in long elegant sweeping weepers somewhat after the manner of the Weeping Willow, in colour of a dull greenish grey, and often covering the tree from its very top to the ground. This moss is most useful, and much employed in New Orleans and the Southern States for stuffing mattresses. It is very full of insects, and therefore needs preparation before it can be applied to this use; it is consequently buried for some time, and after a certain amount of decay has taken place it is uncovered and thoroughly well washed and dried, when it presents somewhat the appearance of very rough coarse black hair, and it makes a light, elastic, tolerably durable mattress.—A SURGEON.

LONICERA AUREO-RETICULATA BLOOMING.

This truly beautiful hardy climber is now in full bloom in my garden; and as I have never heard of its having bloomed out of doors in this country before, it occurred to me that many, who, like myself, have cultivated it for the beauty of its foliage alone, will be glad to hear that it can be flowered. It may be well to add that it has been grown on a front wall of a lean-to greenhouse with a south aspect, and that owing to the lowness of the wall we have had to keep it well cut-in, and this has, probably, forced it into bloom.

It is deliciously scented, and should be grown by every one.—J. B. SAUNDERS, *The Laurels, Taunton.*

RED LEAD FOR PRESERVING SOWN SEEDS.

In regard to what was stated in your number of the 19th inst. with respect to the protective character of red lead for seeds, I can state from an experience of some years that I have found it thoroughly effectual against both birds and mice.

I adopted it in consequence of a recommendation to that effect in your pages, and the method of preparation was the same as that described by your correspondent. Early-sown Peas thus coated over have always remained untouched; and even when they are above ground, mice, which so commonly in hard weather then attack them, leave the crops free from injury.

I have since adopted the same plan on my farm for Wheat, Barley, and Oats, and with equal success. Rooks, which abound with us, and other birds, will have nothing to do with corn thus protected; and there is this advantage—that there

is no risk of destroying gamo, or infringing the Act of Parliament against the use of any poisonous preparation for this purpose. Much, too, is thus gained by liberating children from the miserable work of bird-watching, and thus doing away with this common pretext for keeping them away from school.—W.

ROYAL HORTICULTURAL SOCIETY.

JUNE 19TH.

FLORAL COMMITTEE.—Messrs. Veitch exhibited a large collection of beautiful and interesting plants. First-class certificates were awarded to *Adiantum* sp. nova, with the younger fronds of a dark rosy hue; *Verschaffeltia splendida*; *Areca Baueri*, a graceful Palm; and *Gloxinia Prince Teck*, a very beautiful white and pale purple flower. Special certificates were awarded for *Drosera capensis* and a very fine specimen of *D. dichotoma*, curious plants which attracted much attention; also for cut specimens of the beautiful *Fremontia californica*, a hardy flowering shrub. A special certificate was likewise awarded for Messrs. Veitch's general collection, in which were *Drosera spathulata*; *Herrania palmata*, which received a first-class certificate early this year; *Jussiaea* sp.; *Palava flexuosa*; *Maranta Lindenii*, a very beautiful plant, which it was requested should be sent again; *Alternanthera versicolor*, *spathulata*, and *amœna sessilis*, new plants to be used for bedding-purposes on account of their brilliant dark red variegated foliage; *Nepenthes* sp. from Ceylon, *Aerides maculosum* specimen, and *Aerides affine*. Mr. Bull received a first-class certificate for *Verschaffeltia splendida*, and one of the second-class for *Athyrium costale dissectum*, also for *Ophiopogon spicatus foliis argenteo-variegatis*. A special certificate was awarded for his two collections of Pelargoniums, representing the Zonale and Show sections. Among the Zonales were some exquisite flowers, the mass of varied colours had a brilliant effect, and although grown in very small pots there were some fine trusses. Some new seedlings were among them, but were not entered for special examination. Mr. Bull also sent *Maranta Lindenii*, which it was asked should be sent again; *Asplenium leptophyllum*, closely resembling *monanthemum*, *Nephtrodium molle crispum*, and *Nephtrodium molle grandiceps*.

Messrs. Smith, Dulwich, received second-class certificates for seedling Zonale Pelargonium *Van Dyke*, with foliage much like that of *Beauty of Oulton*, and pale salmon-coloured flowers, a very distinct variety; and for Zonale Pelargonium *Glorious*, a well-formed, extremely vivid scarlet flower. A commendation was given for Zonale Pelargonium *Lucey*, one of the marbled section, of which *Sheen Rival* is a type. It is of dwarf habit, has deep-zoned foliage, and bright scarlet trusses, and is a very effective plant for bedding-purposes. There were several other seedlings of considerable merit from the same firm, but not sufficiently distinct from others; also, *Petunia Juno*, a striped variety; *Petunia Minnie*, a liliputian form; and Pelargonium *Sultan*, one of the Show varieties.

Messrs. E. G. Henderson, Wellington Road, exhibited several nice plants. First-class certificates were awarded for Pelargonium *Pink Nosegay*, and *Gloire de Nancy*, a continental double variety, of which mention was made in our last report. From the same firm came also four seedling varieties of *Chionthus Danjéri*; one of them producing partially white flowers, the keel being quite white, was awarded a first-class certificate. *Jasminum* var. *aurea*, and a seedling Zonale Pelargonium, *Christine Nosegay*, were also shown by Messrs. Henderson.

Mr. Pilcher, gardener to S. Rucker, Esq., exhibited some splendid Orchids. First-class certificates were awarded for *Cattleya Warneri*, C. *Ruckeri*, C. *Pilcheri*, three most superb varieties of *C. labiata*, and a special certificate was awarded for a very handsome specimen of *Lælia purpurata*. Messrs. Osborn, Fulham, received a first-class certificate for an English Orchid, a variety of *Orchis maculata*, called *Orchis maculata superba*; this beautiful and interesting variety was found in Ayrshire, and is distinct from the ordinary form, the foliage not being so long or pointed, and it is covered with minute spots. A special certificate was awarded to the same firm for a fine specimen of *Osmonda regalis cristata*. Messrs. Osborn also exhibited a specimen of an old plant, *Cyrtanthus angustifolius*, and *Cochlearia annulus*, a dwarf annual for bedding-purposes.

Mr. Salter, Hammersmith, exhibited a beautiful collection of Pyrethrum, which was awarded a special certificate; also, two Zonale Pelargoniums, *Madame Werle*, a white ground, with pale pink centre, and *Imperial*, the most perfect in form, and in every respect the best Zonale yet seen, bright orange scarlet flowers, well defined zonate foliage, and good habit. This is a continental variety, and has certainly eclipsed *The Clipper*, and all its class. A first-class certificate was given to each of these plants.

From Messrs. Backhouse came a specimen of *Odontoglossum hastatum*, and from Mr. Williams, Holloway, several fine specimens. First-class certificates were awarded to him for *Orchis maculata superba*, *Calamus Imperatrice Marie*, and a tasselled *Adiantum*. In Mr. Williams's collection were also *Dieffenbachia gigantea*, *Teliaanthera fœcidea*, and the three *Alternantheras* exhibited in Messrs. Veitch's collection.

Mr. Turner, Slough, sent some very magnificent seedling Pelargoniums of the Show varieties; these were selected from the seedlings of

the eminent raisers Mr. Hoyle and Mr. Nye. First-class certificates were awarded for *Perfection*, Archbishop, and *Milton*, three very excellent flowers; one of the second-class for *Beauty of Windsor*; and a commendation for *Negress*, with pure white centre, the darkest Pelargonium yet raised. Had the petals been smooth and firm it would have been a first-class plant. It will form a most useful flower for a contrast. A first-class was also awarded to Mr. Turner for a seedling *Pink Princess of Wales*, and he likewise exhibited two seedling fancy Pelargoniums, *Emily Spiller* and *Liberty*. We must not omit to notice the superb and well-grown specimen exhibited by Mr. Turner of *Nosegay Pelargonium*, *Duchess of Sutherland*, which was awarded a first-class certificate last year. We should like very much to see all Zonale specimens shown in the same style. Without doubt Mr. Turner can make as much of the Zonale section as exhibition specimens as he can of the ordinary flowers with which the horticultural world are so well acquainted.

Mr. George Smith, Hornsey, sent a very pretty seedling Zonale Pelargonium with broad white variegation, a very conspicuous variety. Only one plant was shown; its effect could not be properly estimated. James Bateman, Esq., exhibited several cut specimens of Orchids, and a first-class certificate was awarded for *Aerides testaceum* as a novelty. A fine collection of well-grown Zonale Pelargoniums came from the Society's garden at Chiswick, also some fine plants of the new variegated Maize or Indian Corn, to which was awarded a first-class certificate.

FRUIT COMMITTEE.—The only subjects exhibited on this occasion were fruit of a *Granadilla* from the province of Antioquia, New Grenada, sent by J. Peake, Esq., Newcastle-under-Lyne, and of *Zizyphus vulgaris*, shown by J. Bateman, Esq., of Biddulph Grange, whose remarks on both will be found further on.

FORTNIGHTLY MEETING.—S. Rucker, Esq., F.L.S., in the chair. After the election of five new Fellows, and the admission of the Buckinghamshire Floricultural and Horticultural Society into union, the awards of the Floral Committee were reported by the Rev. Joshua Dix.

The Rev. M. J. Berkeley then remarked, in connection with a variety of Portugal Laurel shown at the previous meeting, that *Prunus Insitiana* is far more luxuriant in the Azores, Canary Islands, and Madeira than here. At the same meeting there was also a species of *Cotoneaster*, which had proved on examination to be a form of *C. rotundifolia*, which is even more hardy than *C. microphylla*. A species of *Dieffenbachia* had also been brought from the Society's garden, and it had since been shown under the name of *Dieffenbachia Weirii*. On opening the spathe he had found within it a number of other spathes; but it was rather a work of danger to examine *Dieffenbachias*, and he would recommend those making the attempt to be careful. The *Dumb Cane* (*D. seguina*), for instance, received its name in consequence of its stems when bitten causing the mouth to swell, and producing temporary loss of speech; and *D. Weirii* was also a dangerous plant. Of the variegated Maize it was stated that only a certain proportion of the seedlings came variegated. *Ophiopogon spicatus* and *Eriogonum umbellatum* were then adverted to, after which an unnamed *Sundew* was said to be *Drosera spathulata*. The *Droseras*, of which there were three British and numerous foreign species, were stated to be full of interest; and one in particular, *D. gigantea*, may prove of value as a dye, from its staining the paper between which it is dried a bright magenta colour, which on being treated with ammonia affords a clear yellow. *Ionopsidium acule* was then noticed as being extremely useful for covering ground about plants out of doors, just as the *Selaginellas* are employed under glass. *Fremontia californica*, a flowering branch of which was placed before the meeting by the Messrs. Veitch, next occupied attention, and its principal botanical characters, as well as those of the order *Sterculiaceae*, to which it belongs, were briefly stated. Some doubt was expressed as to whether a plant with very ornamental foliage, exhibited by Mr. Bull under the name of *Samyda nobilis*, was really a *Samyda*, one of the leading characteristics of that genus being alternate leaves, generally marked with pellucid dots, and it was thought to be more nearly allied to *Theobroma*. The pretty *Asplenium leptophyllum* was likewise said to be closely allied to *Asplenium trichomanes*, but to display a great difference in the fructification. Regarding the beautiful *Pyrethrum* shown by Mr. Salter, it was remarked that horticulturists possessed one advantage, that of knowing their whole history from the beginning, and this beginning was a slight change in the number of ray florets observed some years ago by a Paris nurseryman. Now, as an early autumnal flower, the varieties which have since been obtained are equal in beauty to the *China Aster*, but they have a drawback in being of a more straggling habit of growth, and it would be desirable, if possible, to raise *Pompon* varieties.

Mr. Bateman in commencing his remarks on *Fremontia californica*, said he must first draw attention to the very limited number of hardy shrubs and trees with yellow flowers, which we at present possess. With the exception of the old *Corchorus japonicus*, the common *Laburnum*, and *Jasminum Wallichianum*, he really could not recollect any such flowering at this time of year. To such, then, the *Fremontia* would be a valuable addition; it was not, however, absolutely new, one plant of it having been imported into this country about fifteen years ago, and that plant was in the possession of the Horticultural Society; but it obstinately refused to be propagated by layers, cuttings, root-division, or any other means, and this was all the more

tantalsing because the plant was the only one of its kind in Europe. When the Society got into difficulties, among other assets was this unique plant of *Fremontia californica*, and the nurserymen thinking that they could do what the Society could not, there was a lively competition for it, and it was sold to Messrs. Henderson, of the Wellington Road. By them it was passed from propagator to propagator without success, and at last the plant died. Messrs. Veitch, however, having received a few seeds from the native habitat of the plant, succeeded in raising several plants, some of which were turned out of doors to rough it, at Coombe Wood and in the King's Road, and he had seen a plant of it 5 or 6 feet high, on a wall, and which had been there all last winter and the winter before, and had triumphantly withstood the test. We might, therefore, venture to conclude, that we have here a beautiful hardy plant. As already stated, it belonged to the natural order Sterculiaceae, and as seen in this country is remarkable for its large leaves, somewhat resembling those of the Shamrock, but in its native country the leaves are as large as those of the Fig tree; and Torrey describes the plant as having much the appearance of that tree. It must, however, be considered much more handsome when covered with its yellow flowers, one peculiarity of which is, that they have no petals, what are seen being divisions of the calyx, or sepals. The plant is found in various parts of the northern portion of the Sierra Nevada, and is named after Colonel Fremont, who at the head of a band of daring men fought his way through hostile Indians and took the site of San Francisco, and the territory thus acquired was annexed to the United States. Colonel Fremont, however, was not only a soldier, but also a good naturalist, and in his first expedition collected three hundred plants, in a second nearly one thousand, but the male which carried them fell over a precipice and they were dashed to pieces, and in a third expedition the fate of his collections was more disastrous still. Col. Fremont, he might add, had become a candidate for the Presidency of the United States, but had been defeated by Buchanan. Botanists had lately been taken to task for their method of naming plants, and among other grievances complaint was made that the native names were disregarded; but the charge could not be established, for botanists where they could did associate such names with plants. Thus in *Jonesia aseoa*, *aseoa* was the native name. Sometimes, again, something connected with the history of the plant was preserved in the name, and in this way plants would furnish a mnemonic key to a multitude of facts. What a world of history, for instance, there was in the name *Fremontia californica*. There was another plant he might cite, the elegant little *Linnaea borealis*, which was selected to be so named by the celebrated Linnaeus. He knew that some pupil of his would name a plant after him, and fearing that it would be some of the gay flowers, such as were in the room, he chose a very distinct, a very humble, and a very modest plant to bear his name—a little Alpine creeper trailing over rocks and crags in Sweden and the Highlands of Scotland, and which, with a little care, would succeed in more southern parts of this country. With regard to native names botanists had done much to euphonise them, and had in many cases adopted them; but there are few, he thought, who would prefer such a name as *corticantozontecoxothil*, which actually was borne by a *Lælia*, to that which science had given it; and as a further instance that botanists had not neglected native names, he mentioned *Angraecum* which had been euphonised from the native name *angrec*.

With respect to the Orchids exhibited, he would first direct attention to a few from Mr. Anderson, gardener to T. Dawson, Esq., of Meadow Bank, near Glasgow; and to account for their appearance at the meeting, Mr. Bateman said, that having visited that place a few months ago he remonstrated at the fine specimens which he there saw being kept on the north of the Tweed, and he was glad to find that his call had been responded to. He would first direct attention to a magnificent spike of *Odontoglossum Pescatorei* consisting of about sixty flowers, and of which the first blossom had opened on the 18th of March; and this was not a solitary spike, for the plant had produced as many more blossoms on others, some of which came out of the top instead of the bottom of the pseudo-bulbs. Mr. Anderson had, in a paper read at the Botanical Congress, strongly advocated watering Orchids with warm water, but the extraordinary spike, the vigour of the plant, the size of the blooms, almost made one suspect that some stronger drink, mayhap ammonia, had been given. *Odontoglossum Pescatorei* from the colour and long endurance of its flowers was peculiarly a bridal Orchid, and one, too, well adapted for dinner-table decoration, for both of which purposes Orchids offered peculiar resources, and were rapidly rising in favour, and he might add, that the Princess Mary's wedding bouquet chiefly consisted of Orchids. An epigram at a dinner party at which he had lately been particularly struck him by its effect, it being dressed with one species of *Saccobium*. To return, however, to Mr. Anderson's Orchids, there was a beautiful specimen of *Oncidium crispum*, and another of *Dendrobium albo-sanguineum*, also a bridal Orchid, its colours being pure white and orange. Mr. Bateman then drew attention to the pretty nankeen and pink *Aërides testaceum*, and to the fine specimens of *Lælia* and *Cattleya* exhibited by the Chairman, and remarked that though *Lælia purpurata* is a native of St. Catherina, in Brazil, such had been the good of collectors, that if the inhabitants want plants of it they must send to London for them. He desired to impress on the meeting that though three *Cattleyas* were exhibited, Warneri, Pilcheri, and Roeckeri, these were not species but varieties—well-marked varieties to which

all due honour should be given, but which, to prevent confusion, he would repeat, should never be regarded as species.

People in the country, Mr. Bateman observed, are often asked by their friends to bring or send to town plants suitable for table decorations, and are at a loss to know what will prove suitable. He therefore begged to bring under the notice of the meeting a plant introduced some two or three years ago—one of the Amoor Vines, and though his own garden had every disadvantage, being cold, high, and in a most wretched climate, the plant was perfectly hardy there. The leaves, as would be seen, had considerable claims to favour in a decorative point of view, and the tips of the shoots were tinged with red. The banks of the Amoor river, the Himalayas, and parts of the Rocky Mountains, are, it was remarked, all that remain from which it could be hoped to gather much in the way of new plants.

Mr. Bateman then directed attention to a few more Orchids, among which were *Maxillaria venusta* with exactly the fragrance of *Gardenia radicans*, a species of *Buringtonia*, likewise very fragrant, *Eriopsis ruidobulbon*, and the showy *Epidendrum vitellinum*.

Passing from the domains of Flora to those of Pomona, said Mr. Bateman, Mr. Peake had exhibited two *Granadillas*, from Antioquia, but though he (Mr. Bateman) had not learnt the opinion of the Committee, he believed that the fruit had proved agreeable. The pulp and seeds enclosed in the rind had much the appearance of frog's spawn. Of tropical fruits not generally grown, he believed that the *Granadillas* were the only ones likely to repay the cultivator. He had himself a house devoted to the purple *Granadilla*, and his family were very fond of the fruit. Recently a Mr. Hullett had been sending about an account of what he termed *Passiflora macrocarpa splendens*, which was described as an extraordinary species from South America, forming a tree that fruits readily in our stoves, and producing flowers 7 inches in diameter, and fruit weighing upwards of 10 lbs. It was also described as a climber. It had been offered to half the price, and, Mr. Bateman added, he did not know how many of the *ditto* *minores*, himself among the number, and the price asked for so extraordinary a plant was high—five pounds. Now, as no one knew anything of *Passiflora macrocarpa splendens*, except by Mr. Hullett's description, and as botanists were unacquainted with any such species as *Passiflora macrocarpa*, or with any *Passiflora* approaching to that in the size of the fruit which it is said to produce, Mr. Bateman hoped that Mr. Hullett would come forward at the next meeting and give the history and particulars of so extraordinary a fruit, and especially the collector's name, and where and when the plant was found. This would be the best possible advertisement, and it would, therefore, be to Mr. Hullett's interest to do so.

Mr. Bateman then directed attention to the fruit of the *Zizyphus vulgaris*, sold in Covent Garden Market as "Japonicas," and which constitute a pleasant addition to the dessert. From these the jububes of the shops are supposed to be made; but, as in the case of some which he had purchased at a chemist's shop that morning, it had been found more easy and profitable to concoct a mixture of liquorice and gum arabic and sell it as the veritable jubabe. In concluding his remarks, Mr. Bateman said that he hoped to bring before the next meeting a culprit which had done great mischief in certain parts of Cheshire—*Sirex juvenens*, a large boring insect, which was figured by Curtis thirty or forty years ago when it attacked the roof of York Minster, and at the time it was predicted that it would greatly increase the danger in case of fire, and singularly enough a year or two afterwards the Minster roof was burnt.

THE PRESIDENT'S CONVERSAZIONE.—The Duke of Buccleuch issued invitations for a conversazione on the 19th, and it was attended by about two thousand of the Society's Fellows, and others. A more brilliant assembly could not be easily devised. The entire floor of the conservatory was cleared of plants, and carpeted; the pillars sustaining the roof were surrounded by flowers pyramidally grouped in baskets encircling the pillars. These flowers were gorgeous, yet most artistically arranged, and admirably relieved by the healthy foliage of the giant Ferns, Conifers, and climbers, which are the permanent tenants of the conservatory. The statues embowered among the foliage, and the whole illuminated from above by the close banding of lights round the entire architrave within the roof, was so effective as to realise the descriptions which we read in oriental tales. The Prince of Wales was one of the visitors.

TO MARKET GARDENERS, VEGETABLE GROWERS, &c.—A series of large drawings is being prepared for the food department of the South Kensington Museum, to consist of some of our principal kitchen-garden plants, the object being to show what perfection and magnitude certain plants will attain under judicious and careful cultivation. Any of our readers possessing specimens of the following are asked (if so disposed) to forward them for painting, carriage paid, with roots and all leaves attached, to the artist engaged, Mr. W. G. Smith, 12, North Grove West, Mildmay Park, London. The grower's name will in every instance be attached to the portrait of the particular plant painted. List of specimens required—Cabbage, Broccoli, or Cauliflower, any sort, Turnip any sort, Carrot, Parsnip, Celery, and Sea-kale.

CRYSTAL PALACE ROSE SHOW.—JUNE 23RD.

THE extreme lateness of the season tended, as I feared it would do, to diminish the number of exhibitions in Roses, while the fearful storm that burst over London on the night of Thursday completely destroyed the hopes of metropolitan growers; so that on the whole I have never seen so limited a display at the Crystal Palace as on the present occasion. On the other hand, many most remarkable blooms were exhibited, and I should say that as a general rule they were quite in character.

Leaving to other hands the details of the prize list and notes on the general ran of flowers, I would just notice the new Roses, which were indeed not numerous, being only exhibited by Messrs. Paul & Son, who took the first prize, and Mr. Keynes, who was second. In the boxes of the former gentleman I observed Madame Moreau, a large flower, something like the old Boule de Nanteuil; Mademoiselle Amélie Halphen, likely to be a desirable Rose if full enough, the colour is pretty and chaste; Centifolia rosea, rather too thin, I fear, but a pretty Rose; Xavier Olibo, a splendid dark Rose, and I believe likely to be a valuable addition to our dark Roses; Rev. H. Donbrain, good; Souvenir de Wm. Wood, a very dark Rose, in the style of Prince Camille de Rohan; Madame Victor Verdier, very fine; Duchesse de Medina Celi, likely to be a good Rose if it have stuff enough; Frederick Biborel, fine shape, and a very pretty new Rose; Seedling No. 3, very promising, dark fiery red, and good shape; Seedling No. 4, fine shape, and nice rosy colour; Eugène Verdier, very dark; Lord Macaulay, very good, but very like Senateur Vaisse; Pierre Notting, a full dark Rose; Monsieur Boncenne, very dark, velvety, and good; Souvenir de Dr. Jamin, a very dark bluish violet; John Keynes, very fine if it come full enough; Achille Gonod, a showy rosy red flower.

In Mr. Keynes's collection I noticed Charles Margottin, very showy; Gabriel de Peyronny, well-shaped; Xavier Olibo; Madame Victor Verdier; Comtesse de Paris; George Prince, good in shape but common in colour; Marguerite de St. Amand, a very fine flesh-coloured flower; Joseph Finta, large and good; Louis Van Houtte, a very full and good flower if not too full. Besides these, I noticed in one of the other stands Hippolyte Plandrin, a fine, full, rose-coloured flower, and Madame Fillion, in the same class, very good. There is one Rose I have not mentioned, not because it was not good, but because I believe it to be the *facile princeps* of all the Roses of the last three years—viz., *Maréchal Niel*: it was not only exhibited among the new Roses, but shone conspicuously in every winning stand of the day. It is a grand Rose, and I have good hope will prove hardy, at any rate in the south of England. This is the more to be rejoiced at, as I am sorry to say the hope of a yellow Perpetual is still one of the dreams of the future. I shall have more to say about this by-and-by; suffice it now, that I believe, to the intense disappointment of Lacharme himself, his Rose is not yellow.

Need I add that, as usual, the arrangements for all concerned were of the best possible character—that Mr. Wilkinson, as usual, proved himself the most courteous and efficient of superintendents—a brilliant day brought a crowded company, and proved that large shows are not a failure?—D., Deal.

To the above remarks as to the general character of the Show, we have nothing to add save that in their correctness we fully concur. All, therefore, that now remains for us to do is to give the names of some of the varieties which were seen to most advantage in the different stands, and the names of the prizetakers. This we shall do class by class; but before commencing the enumeration (and little else can be done but a mere enumeration of names), it may be well to remark that a large proportion of the blooms were far from perfect, and others, though large, wanted the desirable degree of refinement. Much allowance, however, should be made for the exceptional character of the season, and the difficulties which Rose-growers had to contend with in consequence of the storm of the preceding Thursday, which rendered unfit for exhibition many of their finest blooms.

Class I. was for ninety-six varieties—a long number, in which only a large grower can hope to compete creditably, and which we imagine might be advantageously reduced to seventy-two, as at the National and Birmingham Rose Shows, still the stands, considering all things, were very good. Mr. Keynes, of Salisbury, in this as in the other Nurserymen's classes, was successful in obtaining the first prize with a stand containing, among others, Madame Charles Wood, Comtesse de Chabrilant, Cloth of Gold, La Reine, Xavier Olibo, dark-shaded crimson scarlet, a variety which attracted much attention in this and other stands; Pierre Notting, violet-shaded crimson; Marguerite de St. Amand, rose; Triomphe de la Terre des Roses, violet-shaded rose; Triomphe de Rennes; Prince Camille de Rohan; Madame Rivers; America; Maurice Bernardin; Souvenir de William Wood, almost identical in colour with Prince Camille de Rohan; Vicomte Vigier, Gloire de Dijon, Alphonse Belin, bright and lively in colour; Victor Verdier, Mlle Bonnaire, white, slightly tinged with pink in the centre, very delicate in colour; Gloire de Vitry, Kate Hansburg, and *Maréchal Niel*.

From Messrs. Paul & Son came excellent blooms of Charles Lefebvre, Pierre Notting, *Maréchal Vaillant*, Comtesse de Chabrilant, Mlle. Marie Raby, François Louvat, Xavier Olibo, Duke of Wellington, Denis Helye, Alphonse Damaizin, Gloire de Dijon, Duc de Rohan, Vicomte Vigier, Alba Rosa, Amiral La Peyrouse, Madame C. Crapelet, Madame C. Joigneux, Madame Caillat, Prince Camille de Rohan, Maurice Bernardin, Charles Wood, Beauty of Waltham, and

last and finest of all, *Maréchal Niel*, a glorious bloom, by far the finest of the many fine blooms exhibited of that beautiful variety. In the stands of Mr. Mitchell, Pilldown Nursery, Maresfield, we remarked John Hopper, very fine; Julie Mausais, a pretty Tea; Madame C. Wood; Hippolyte Plandrin, very large and full; Souvenir d'Elise, *Maréchal Niel*, Gloire de Dijon, Madame C. Crapelet, Madame Vidot, Caroline de Sansal, Général Jacqueminot, and Madame Rivers. From Mr. Turner, Slough, many of those already named were noticeable; also Leopold Premier, Madame Manrin, Comte Cavaour, Duc de Cazes, Madame D. Donville, Princess of Wales, Blairii No. 2, Charles Lefebvre, very fine; and M. Joigneux, dark centre, backed by rosy crimson outer petals, forming a striking contrast.

Awards—first, Mr. Keynes; second, Messrs. Paul & Son; third, Mr. Mitchell; fourth, Mr. Turner; fifth, Messrs. Francis & Co.

Class II., forty-eight varieties, three trusses, generally affords a very effective display, and such was the case here. Mr. Keynes again took the first place with, among others, Victor Verdier, *Maréchal Niel*, very fine; Madame Scrtot, Madame Charles Wood, Madame Moreau, Senateur Vaisse, Pierre Notting, Marguerite de St. Amand, Vicomte Vigier, Victor Verdier, Maurice Bernardin, and Centifolia rosea. From Messrs. Paul & Son, the most remarkable were Maurice Bernardin, Olivier Delhomme, Charles Lefebvre, La Brillante, glowing crimson scarlet; Comtesse de Chabrilant, Prince Camille de Rohan, very fine; Beauty of Waltham, Princess Mary of Cambridge, Madame Rivers, Xavier Olibo, Madame C. Crapelet, Lafontaine, Mathurin Regnier, and splendid trusses of *Maréchal Niel*. In the trusses from Messrs. Francis, of Hertford, were buds showing prominently above the surface of the stands, thus relieving that flatness which stands of cut blooms usually present.

Awards—First, Mr. Keynes; second, Messrs. Paul & Son; third, Mr. Mitchell; fourth, Mr. Turner; fifth, Messrs. Francis.

In Class III., twenty-four varieties, three trusses, we noticed in the stands of Messrs. Keynes, Turner, Paul & Son, and Fraser, good trusses of many of the varieties shown in the preceding class, Paul Ricaut, Louise de Savoie, Prince Henri de Pays Bas, Anna de Diezbach, Devoniensis, and Charles Lefebvre particularly good.

Awards—First, Mr. Keynes; second, Mr. Turner; third, Messrs. Paul & Son; fourth, Messrs. Francis; fifth, Mr. Fraser.

In Class IV., twenty-four varieties, single trusses, and in Class V., twelve varieties, were fine blooms of Souvenir de Malmaison, *Maréchal Niel*, Madame Vidot, Devoniensis, Gloire de Dijon, Madame Manrin, Charles Lefebvre, Madame Damaizin, John Hopper, and Mrs. Rivers; also Madame Moreau, Marguerite de St. Amand, Achille Gonod, and Belle Normande, all unusually large, but somewhat rough.

Awards—For twenty-four: first, Mr. Keynes; second, Mr. Turner; third, Mr. Walker, Thame. For twelve: first, Mr. Keynes; second, Mr. Turner; third, Messrs. Francis; fourth, Mr. Walker.

In Class VI., for thirty-six trusses (Amateurs), Mr. J. T. Hedge, Reed Hall, Colchester, had fine examples of Général Jacqueminot, Le Rhone, Mathurin Regnier, Beauty of Waltham, Cloth of Gold, and *Maréchal Niel*; and Mr. J. W. Chard, Salisbury, Madame C. Wood in beautiful condition, and John Hopper large and fine. In other stands were very good examples of Madame Victor Verdier, Emile Dnlac (beautiful bright rose), Comtesse de Conrey, Triomphe de Caen, Prince Camille de Rohan, Princess of Wales, Madame Bravy, Maurice Bernardin, and Niphotos, the exhibitors being Mr. A. Moffat, gardener to Hon. Mrs. Maynard, Danmow; Mr. Wright, gardener to Mrs. Ramsden, Twickenham; Dr. Cooper, Slough; and Messrs. Plester, Ingle, Laxton, A. H. Kent, Bristow, Moore, Marcham, Dennis, Postans, and Hollingworth.

Awards—First, Mr. Hedge; second, Mr. Chard; third, Mr. Moffat; fourth, Mr. Wright; fifth, Dr. Cooper.

In other classes we remarked very good examples of Senateur Vaisse, L'Enfant Trouvé, Charles Lawson, Madame Bell, Pauline Lanzeur, Le Rhone, Celine Forestier, Comte de Nanteuil, Madame Bontin, Souvenir d'un Ami, Caroline de Sansal, Olivier Delhomme, Madame Vidot, Comtesse de Chabrilant, Charles Lefebvre, Mlle. Bonnaire, and Maurice Bernardin, and many more might be added if any advantage could result from giving a mere list of names. Taking all circumstances into consideration the amateurs' classes were very creditable.

Awards: For twenty-four, first, Mr. Moffat; second, Mr. Hedge; third, Mr. Chard; fourth, Mr. Stoddart, gardener to J. G. Rebow, Esq., M.P., Colchester; fifth, Mr. Mercer, Staplehurst; extra, Mr. Wright. For eighteen: first, Mr. Hedge; second, Mr. Moffat; third, Mr. Dennis, gardener to H. S. Hayward, Esq., Hurst Green; fourth, Mr. Chard; extra, Mr. Ingle. For twelve: first, Rev. V. Knox Child; second, Mr. Hedge; third, Mr. Ingle; fourth, Mr. Dennis; extra, Mr. W. Lacey, gardener to C. S. Mortimer, Esq., Morden Park.

Baskets or vases of Roses exhibited much sameness, March's stands being, with one exception, employed by all the prizetakers; and the blooms rested on various Ferns at the base, and were interspersed with these in the top dishes. Mr. Ingle, gardener to C. S. Round, Esq., Colchester, was first with an arrangement in which the glass stem was entwined with a variegated Jasmine, and Maiden-hair Fern was introduced among the blooms in the top dish. Mr. Hedge was second, and Mr. Marlow, gardener to J. Wigan, Esq., Mortlake, third, both using variegated Japanese Honeysuckle up the stem. Mr. March was fourth with the elegant stand for drawing-room decoration represented in No. 271, and having Cissus discolor on the central column. Messrs. Carter & Co. contributed some neat hanging-baskets mossed with

Selaginellas, and filled with Roses, Dracenas, and Cordylines indivisa; and hanging-baskets were also shown by Messrs. Cutbush and by the Crystal Palace Company. The latter were of small size, and suitable for placing on a table or similar position; they were made of wickerwork, and the basket was suspended by a wicker chain from a tripod of the same material. Other baskets were supported on small green-painted iron tripods. The most effective exhibition in this way was the Leicester Vase, measuring from 7 to 8 feet in diameter, and formed of iron ribs some inches apart; and these being turfed over, the vase was filled with a row of *Coleus Verschaffeltii*, then with *Geraniums*, *Mignonette*, and *Hydrangeas*, with a tall pyramidal *Fuchsia* in the centre.

Roses in pots were not in the fine condition that they were seen earlier in the season. The best twenty-five came from Messrs. Paul and Son, Mr. Turner being second, and Messrs. Francis third. Messrs. Paul & Son also received a first prize for the best twelve sent out in 1865.

Among miscellaneous subjects were Variegated Maize and several pretty tricolor-leaved and *Zonale Pelargoniums* from Messrs. Carter and Co.; and Messrs. Downie Laird, & Laing, exhibited Wiltshire Lass, a remarkably fine pink variety, which has already been noticed in these columns; fancy and bedding Pansies, of which Imperial Blue was very attractive; an unnamed *Zonale Pelargonium* with leaves 5 inches across, pale green, marked with a bronzy zone; and Stanstead Rival, with very large salmon scarlet pips. Mr. T. Smith, Long Wittenham, exhibited a *Delphinium*, called *Smithii*, with large deep blue flowers with a white eye; and Mr. S. Brown, Sudbury, Invincible Sweet Pea and some pretty early-flowering *Gladioli*. The most striking of these were *Insignis*, rich salmon, blotched on three petals with bright violet; *Eclipse*, pink and white, and *Incomparabilis*, cream and violet crimson.

A GLANCE AT THE FLORA OF THE CARBONIFEROUS PERIOD.

BY DR. HORATIO C. WOOD, JUN., PHILADELPHIA.

Read before Pennsylvania Horticultural Society, August, 1865.

ONE of the most curious and interesting discoveries of modern science is that of the vegetable origin of coal. It has become so familiar to us—we are so used to looking on great heaps of coal, and remembering that ages ago they were formed from vegetable matter—that nothing can be more trite than this opening sentence. Yet it is a wonderful discovery, one that awakened strange emotions in the breasts of the earlier investigators, and carried them back, in fancy, to the untold ages buried in the abyss of the past—to the waving forests and thick brakes of that olden time. In the light of more modern science, the fact is still more strangely interesting, as affording an unanswerable example of the indestructibility of a force. For whence did those plants receive the power to draw the immense mountains of carbon from the air and earth, but from the rays of the olden sun? It takes no vivid fancy to see in the glowing, burning coal, the sunlight of a day long fled ere man was: for science, stranger than fiction, can actually measure the power drawn so long since from the sun, and stored away deep in the bowels of the earth, to minister to man's wants. This is not the place to do more than allude to this modern doctrine of the convertibility of force, and its indestructibility. It would be a pleasant task to show how the plant lays hold of the chemical part of the sun's rays and binds them in its cells, making those wondrous little entities so many prison-houses of force. But our task is with the Flora of the carboniferous period, and we must hasten on.

If we subject wood to the action of a slow fire, in the absence of a sufficient supply of air, charcoal is formed, the physical characters of which you are all familiar with. Intermingled with the coal are found small masses of charcoal, closely agreeing in external appearance with that from the Jersey Pines. Further, in and all about the coal are vegetable *relique* in vast abundance and endless variety: huge trunks, many feet in length; innumerable impressions of Ferns; seed-vessels, fruits, leaves, roots—yea, sometimes the stumps of whole forests; and in one or two places on the coasts of Nova Scotia, the forests themselves, standing erect, imbedded in the solid rock. The coal measures are, in truth, Nature's herbarium, where she has stored away the history of the botany of a wonderful period—a botany with strange, weird plants, worthy to grow side by side with the winged saurian lizards, and huge, uncouth, ferocious sea monsters, which make our largest and fiercest reptiles seem but playthings.

The two crowning decisive proofs of the vegetable origin of coal are the following:—First, the fact that if thin slices of it are properly prepared and examined with the microscope, a peculiar structure is visible, so closely resembling that of existent plants, that we often can assert not only the source from

which it has come, but even the classes to which the component plants belonged. Second, the circumstance that the first stage of the formation of coal is at present going on. Of this more will be said after the discussion of the climate and conditions under which the carboniferous vegetation flourished.

Many things have been said and written about the climate of the coal age—some of them more strange and wonderful than even the truth itself. Men have laid hold of the axis of the earth, and turned it to suit their purposes and theories. The great difficulty lies in the existence of coal in Melville Island, Lat. 75° N. The plants brought from that locality seem to be similar, indeed often identical with those found in our coal measures.

The inquiry at once arises in every thinking mind, How could these plants have lived and flourished in that region of ice and snow—that home of frozen death, cold Winter's favourite resting place? The only plants which now grow there are the hardiest of the Alpine flora—even the Birch and the Willow are fain to content themselves with creeping along the ground, not daring to raise their heads more than a few inches into that chilling air; but the coal shows that a flora must have existed there formerly worthy to rival that of the tropics in its luxuriant abundance. Whence, then, the heat and light to foster and nourish such a vegetation? In order to account for the existence of coal so near the pole, Messrs. Lindley and Hutton, two of the most famous investigators in fossil botany, invented the monstrous theory, that the axis of the earth had a different inclination formerly from what it has at present; but where in Nature have we any evidence of such gigantic change—a change which would involve in its influence not merely our globe and its satellite, but all our solar system? Let us, then, see if it is necessary to overstep the bounds of reason to explain this problem. That coal could not at present be formed in those regions is self-evident. In that primeval age there must have been more light, and especially more heat *thero*.

What is the great equaliser of the temperature of the earth at the present day? No doubt the air has much to do with the climate. No doubt it is the hot sirocco-breath of the Saharan furnace, tempered by great draughts from the Mediterranean, which gives southern Europe its genial climate, and ripens the Grape on the banks of the Vine-clad Rhine. But is not water a more powerful modifier of the temperature of a country than the air? Is it a curious fact, that if you take a pound of water at 60° Fah., and a pound of lead at 60° Fah., and heat them to 120° Fah., you will find that it has taken about twice as much fuel to bring the water to that temperature as to bring the lead up. Again, if you take these heated bodies, and measure the heat given off during cooling, you will find that the water has given off about twice as much as the lead. The thermometer does not indicate the *amount* but the *degree* of heat in a body, and water actually requires twice as much heat as the same weight of lead, to raise it to any given temperature. If you pour on a mass of granite a gill of water, the stone will at once appear wet; but pour a gill of water on a brick fresh from the kiln, and it will all soak into the brick, and, hid away in the interior, will give no token of its presence. The absorbing power of the brick is much greater than that of the stone. So it is with water and heat. The Creator has given to water a great power of absorbing heat and hiding it away in its interior. Is it not evident how this property fits it for being the great equaliser of the earth's temperature? It is notorious, that in the winter the sea-coast is not so cold as the inland, whilst in summer it is not so hot. The reason of this is, that the water absorbs the heat of the one season, and gives it off to moderate the cold of the other.

Glance for a moment at a map, and you will see that the gloomy, frozen coast of Labrador—the native home of the seal and the iceberg—is in the same latitude with the fertile England, with its mild climate and busy multitude of men. The great cause of all this difference is the Gulf Stream, that great oceanic river, ever flowing from the Tropics and stranding itself on Northern Europe. It is made up of millions of drops of water, and each sparkling drop is a little casket with its treasure of heat locked up within it. From the fierce burning sun of the tropics it receives it, and hurries away with it to make fertile and inhabitable the western shores of the Old World.

As water is thus the great equaliser of climates, the great distributor of equatorial heat, it is easily seen that if the surface of the globe was almost covered with water, the extremes

of temperature would to a greater or less extent disappear. Now geological facts indicate that in the coal period the greater portion of the earth's surface was covered with water, and that the land which did exist was low and marshy.

The key to unlock the mystery of the existence in high latitudes of the heat requisite to the growth of the coal plants seems to me to be found in this circumstance: The immense mass of water composing the almost universal ocean, was doubtless traversed in all parts by currents similar to the Gulf Stream, but on a still more magnificent scale—and these it was which enabled the coal plants to flourish so near the pole. I have said nothing of the possibility of the crust of the earth having been warmed by the inner fires. This may have contributed somewhat to the growth of the coal flora, but how much, if at all, seems impossible to be judged.

The problem, how the plants received their supply of light, is not so easily solved. It is, however, by no means settled how far plants can endure the absence of light. According to Professor Lyell, Palms flourish under glass in St. Petersburg, lat. 65° N., where the shortest days are only five hours long, and seem scarcely more than a glimmering twilight. How much greater departure from their normal supply of light these plants would endure is not known; but this fact certainly shows that they will bear much greater vicissitudes of light than of heat. Further, many of the living congeners of the carboniferous flora, flourish in the darkest recesses of tropical primeval forests, where no sunbeam ever pierces through the thick foliage, but where a shadowy twilight is alone filtered through the dark screen of living green. If Palms, used to the burning sun of the desert, flourish in lat. 65° N., how much further north can tree Ferns, Club Mosses, &c., native denizens of gloom, exist? And is it not possible that the ancient flora may have had greater powers of enduring the absence of light than the modern allied families?

But there was undoubtedly more light in those northern latitudes formerly than at present. What is coal but carbon? and these millions of tons of carbon have come from plants which must have obtained them directly or indirectly from the atmosphere. Carbon can exist in the air only as carbonic acid. Therefore the atmosphere must have been in that ancient time very largely composed of that gas. Although this gas is so destructive to animals, yet it is a powerful stimulant to vegetation, and its superabundance must have been a great cause of the wondrous, luxuriant profusion of the carboniferous flora.

We know that, owing to the refraction of the atmosphere, the sun is seen by us when actually several degrees below the horizon. Now the refracting power of carbonic acid far exceeds that of either nitrogen and oxygen singly or associated. In a latitude where the sun revolves for days a few degrees below the horizon, it is very evident what an effect this great refracting power must have had on the length of the days and nights. What a very prolonged twilight must have existed there. Taking into consideration these two thoughts—the small supply of light actually necessary to the growth of some plants, and the prolonged twilights produced by the high refracting power of the carbonised atmosphere, is it necessary to imagine that the world has turned a somersault, in order to account for the coal beds of Melville Island?

Although the ocean covered so much of the earth's surface during the carboniferous era, yet coal is not an oceanic deposit. No marine remains are found in it either vegetable or animal. The plants out of which coal is formed must have contained a large proportion of lignin or woody fibre to have yielded so much solid carbon. Now, seaweeds have singularly little of this in them. They are mere pulpy, fleshy masses, which, when dried, are but the shadow of their former selves. On the other hand, the coal could not have been produced in a very dry atmosphere, for the Euphorbias, Cacti, &c., which flourish on dry inland table-lands, are succulent, fleshy plants, composed very largely of watery juices, with but very little solid permanent tissue. Again, when plants die and fall to the ground in an ordinary forest they gradually decay until all that remains of them is a black rich mould. Decomposition or decay is nothing but a slow process of combustion; and, as in that process, if a plentiful supply of air is at hand, continues until not only hydrogen, nitrogen, and other unstable elements are liberated, but the very carbon itself oxidised. To obtain the carbon by slow decay, just as to obtain it by rapid decay—i.e., combustion, only enough oxygen must be present to consume the less resisting, more changeable portions of the wood. The only known method by which this can be done on a large scale in Nature is through the agency of water,

If you examine a log which has lain for years at the bottom of a pond, you will find that, although a similar log on the shore would have crumbled in the same period into mould, yet it is hard and resistant, only blackened by the touch of time. The air has been excluded in great measure from it, and the carbon remains untouched. The Creator has given a constitution to marsh plants, which peculiarly fits them for the formation of coal. They contain a remarkably large amount of woody fibre. Take the soft plant sphagnum or bog moss, and delicate as it seems, it actually contains a large proportion of lignin—will yield more carbon, pound for pound, than the firm, hard giants of the forest.

It has been shown that coal has been formed under water, and this peculiar constitution of marsh plants would indicate that it had been formed in bogs or marshes, and not at the deltas of rivers. This is confirmed by many circumstances, among which are these two:—First, the fact that so many stumps and even trunks of trees are found standing in an upright condition, apparently just as they grew; second, the immense length and breadth of some of the coal fields, coupled with the circumstance of there having been but so little land in those days, seem strongly to oppose the idea of their formation at the mouth of a river.

It seems certain, upon looking at all sides of the question, that there were immense swamps in the coal ages similar to the famous peat bogs of Ireland and other northern countries, and that it was in them that the depositions of carbon took place. The top of a peat bog is covered over by a luxuriant, living, growing vegetation, whilst underneath is an ever-increasing mass of dead, decaying, vegetable matter. The plants which form by far the larger proportion of each of these are the Mosses.

Upon examining peat taken from near the surface, it will be seen to consist of a matted interwoven mass of stems and roots, blackened by incipient decay, but preserving their form and structure. The further from the surface the more marked is the effect of the slow combustion, till at last a point is reached where the form of the component plants is lost, and the peat is reduced to a black, carbonaceous, spongy mass. Now this material needs only heat and pressure to form it into coal. It has actually been dug out, dried, exposed to a great pressure and heat, and an artificial coal thus been made.

As impressions and even parts of individual plants are found scattered through the coal, so even in the fully-formed peat portions of many species of plants exist. The Moss, however, never retains its structure or form, but is converted into the black, uniform, carbonaceous mass, which constitutes by far the greater part of the peat. No traces of Mosses have as yet been found in the coal. Does it follow from this that they did not exist in the carboniferous era? Much of the coal when examined by the microscope does not exhibit any definite structure; and is it not very probable that it corresponds to the structureless portion of the peat in origin as well as constitution, and that Mosses flourished abundantly in that ancient flora?

The plants that have written their history most profusely on the coal and surrounding shales are the Ferns. Everywhere are their traces visible. Sometimes a single frond, nicely smoothed out as though pressed for an herbarium; again, great piles of them, the fronds crossing, recrossing, and intermingling with one another in endless confusion. Although, as has just been indicated, the abundance of structural *relicue* is an index rather of the indestructibility of the plant than its pristine profusion, yet it cannot be doubted that the Filices held a very prominent place in the coal flora: their appearance must have been very similar to the tropical Ferns of the present day. There are found imbedded in the coal huge trunks which have their surface fretted with very large, more or less semi-lunar scars. By means of the microscope, Messrs. Lindley and Hutton have been enabled to demonstrate that these were the trunks of immense tree Ferns. The ordinary frondose Ferns were apparently much the more abundant then, as now.

Mr. Corda, some years since, described some peculiar *relicue*, which he called Psaronius. These are very abundant in some localities; they are always in the form of a short thick stump, with a thick hard bark, whose surface is covered with a dense mass of rootlets. These, according to Professor Lesquereux resemble, both in external form and internal structure, the short rootstocks of some of the immense Ferns of the island of Java.

The study of fossil Ferns is environed with almost insur-

mountable difficulties. Very rarely is the fructification sufficiently well preserved for any characters to be drawn from it. In the hundreds of specimens which I have examined, there has not been one such. The student is forced back on the form of the fronds, and the distribution of the nervules, both for family, generic, and specific characters. For this reason, there is scarcely another study in natural history so uncertain and unsatisfactory. Different portions of the same plant often belong to different sub-orders.

The most strikingly beautiful of all impressions left on the coal are those made by the *Lepidodendra*. These plants were more closely allied to the *Lycopodiaceæ* or Club Moss family, than to any other living plants. The living representatives of this family do not attain to above a few inches in height, generally trailing on the ground; but not so with the *Lepidodendra* of the coal age. The remains of their trunks are often 20, 30, and 40 or even more feet in length, indicating the immense size to which they attained. They must have been a very striking feature of that ancient flora, very probably forming in some places groves themselves, in others mingling with the Conifers and tree Ferns.

All through the coal measures are found in abundance sections of peculiar, long, cylindrical stems. These are remarkable for being articulated, with their joints very close together, and surrounded by a sheath, mostly formed of acute, closely-set teeth. Their surfaces are generally canaliculate, the channels or grooves often alternating at the joints.

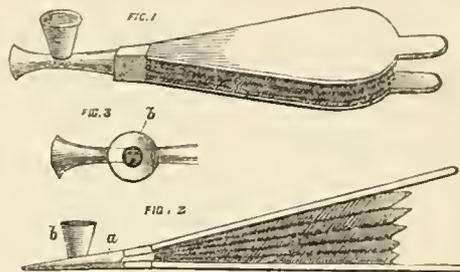
These fossils are the *Calamites* of systematists. On account of their external resemblance to the existent *Equisetaceæ* or Horse-tail tribe, they have been considered as allied to them; but recent investigations have revealed more truly and completely their history. The microscopical examination of their stems has shown that they were Conifers; and the discovery of their fructification has confirmed this curious revelation. A peculiar form of vegetable *reliquæ* has long been known to be abundant in the coal measures, especially where the *Calamites* appear to have flourished. They consist of minute stems or branches most generally, but not always, simple, and beset at short intervals with whorls of linear, single-nerved leaves. These leaves resemble more nearly the awl-shaped foliage of our Pines than that of any other existing plant. Now the perfected fructification of these plants has been discovered. It consists of compressed, apparently monospermous nutlets, which are generally more or less acute, often encircled by a narrow wing, and always situated in the axils of the whorls. The male flowers have also been found. They are terminal ear-like spikes, of appressed scales, enclosed in a mass of united appressed leaf-like bracts. These vegetable remains are the *Asterophyllites* of Brongniart. Various theories have been advanced as to their botanical relations, all founded on the premise that they were distinct, perfect plants; but these have all been disproved by the recent discovery that they are nothing but the branches of the *Calamites*. According to Professor Lesquereux, these *Calamites* were probably annuals, or, at least, short-lived plants, which grew up very rapidly. As they grew, they gave off constantly towards their summits these branches. The individual branches soon died, and were at all times easily detached from the parent stem. In the more perfectly preserved *Calamites* the little scars left by them can still be seen around the joints. These stems probably grew in rich marshes, and very close together, forming, like the Bamboo of India, or our own southern Cane, almost impenetrable brakes. The constantly shed branches and decaying falling stems, covered the surface of the marsh in which they grew, and furnished much carbon to the accumulating peat. Intermingled with the *Asterophyllites* are found vegetable *reliquæ*, somewhat similar in appearance to them, but which are still thought to be the remains of separate plants. I refer to the *Annularias* and *Sphærophyllums*. These are jointed branching stems, with verticillate leaves at the articulations.

The leaves are not so strictly linear as those of the *Asterophyllites*, and are very generally more or less wedge shaped. A good deal of mystery still hangs about their botanical affinities, but Professor Lesquereux considers that they were plants living on the mud; now partially immersed in the water, again running over the surface, much as the existent *Azolla caroliniana*. On the other hand, their fructification has been discovered, and so much resembles that of the *Asterophyllites* as to suggest immediately that they, like the latter, were, merely the branches of some huge coniferous plants.

No plants of higher organisation than the Conifers have as yet been found in the coal measures.

APPLYING SULPHUR TO VINES AND OTHER PLANTS.

I SEND you a rough sketch of my bellows. Any moderately ingenious man can make one. I know this, for I made my own! The nozzle is flattened at the end, presenting a wide, narrow opening, as shown in *figs. 2* and *3*. The only dif-



ference between this and the common bellows, is the small valve marked *a*, the flattened nozzle, and the receptacle *b* for the sulphur and lime. Sulphur alone is liable to clog; mixed with the lime, it is blown in a fine cloud to the distance of several feet, and thoroughly distributed among the foliage of the Vines. The lime also adds apparently to the good effects of sulphur, and if used early, and as often as symptoms of mildew appear, is nearest a specific for the disease of anything I have found.—GEO. W. CAMPBELL, *Bloomington Nurseries, Chicago* (in *Prairie Farmer*).

NEW BOOK.

A Manual of Weathercasts and Storm Prognostics, or the Signs whereby to Judge of Coming Weather. Compiled by ANDREW STEINMETZ. London: G. Routledge & Sons.

A GOOD compilation is far more valuable than a bad original—by a bad original we mean a book of which the contents are a little novelty diluted with a large quantity of verbiage. This manual is a good compilation, and though there is little in it that cannot be found in Fitzroy and Forster's works, yet the collected information is well condensed and well arranged. We can afford space for but one extract.

"When rain is coming ravens caw, swallows chatter, cats 'wash their faces,' small birds prune themselves and make a show of washing, crows make a great noise in the evening, geese cackle more than usual. The reason is, because these creatures love wet weather, and rejoice at the approach of it. Sheep huddle together at the approach of bad weather, and turn their tails towards its direction. Before a storm at sea the cat scampers about the deck with its tail sticking out like that of certain heraldic lions. Rooks are observed to make a sort of gliding motion, called 'playing at football,' before stormy weather. When pigs carry straw to their styes bad weather may be expected. When leeches kept in water remain low down, settled weather may be relied on; but if they rise to the surface, expect wind or rain. Dogs and cats feel lazy and drowsy at the approach of rain. The reason is, because the air is deficient in oxygen, and the damp depresses the nervous system. Horses neigh, cattle low, and sheep bleat against rain, for the same reason as above—difficulty of breathing, &c.; and human beings yawn and gape in like manner.

"At the approach of rain cats turn their backs to the fire and rub their ears, and some nervous people scratch and rub their heads. This is owing either to the incipient humidity getting between the hair, or the air being srrcharged with electricity, both which causes produce the sensation of itching. It is as though we were covered with cobwebs, a feeling which all of us know more or less, but which the cat experiences intensely, its hair being very electrical, which may be easily proved in some cases by rubbing it with the hand, when it 'crackles.' Of course, the cat being a tidy creature, merely rubs its hair to keep it down and smooth, for in this state the hair always tends to get ruffled and erect.

"When birds of long flight, rooks, swallows, and others, hang about the homestead, and fly up and down low, then rain and wind may be expected. The reason is, because the insects which they pursue have taken refuge from the cold upper regions of the air, where the change is beginning, in the warmer air near the earth. They fly low because their food is low.

"In spring time, when magpies fly abroad singly, the weather either is or will soon be stormy; but when both birds are seen together the weather must be mild or will soon become so. Hence it is considered unlucky for anglers to see a single magpie in spring, because it forebodes bad weather for fishing. We need scarcely state, that when only

one bird is seen, the other stays at home to keep the nest warm for the little ones.

"When a strong wind and stormy weather are forthcoming, sea-birds, gulls, &c., hang about the land or over it, sometimes flying inward; the reason is, because the fishes upon which they feed keep deeper at the prospect of the stormy winds that blow; and the consequence is, that the gulls must seek a dinner somewhere else, and resort accordingly to the worms on land; and curious to tell, that sort of weather actually makes the worms uncomfortable in the ground, and they wriggle out to be swallowed up by the gulls. Thus does Nature provide for all her dumb creatures, and has even taught the lapwing to stamp on the ground and so make the worms wriggle out, when it wants its breakfast!

"When the gulls, &c., fly out early, and far to seaward, moderate wind and fair weather may be expected, because, if the weather were not likely to be moderate, they would not expect to find the fishes at the surface of the water.

"The stormy petrels, or Mother Carey's chickens, so ominous to sailors, either forecast a storm or show that one has been raging in the latitude where they appear so mysteriously, as it were "walking on the sea," like St. Peter in the gospel (whence their Italian name, from *pedrillo*, "little Peter.") The cause of their appearance is the presence of the marine insects upon which they feed, which are kept on the surface by the agitated waves of the tempest, or the "swell" that precedes it.

"When animals seek sheltered places instead of spreading over their usual range, an unfavourable change of weather is probable, if not certain rain or stormy weather.

"If oxen lie on their right sides, look towards the south, and lick their hoofs; if cows look up in the air, and sniff it ("the cattle also concerning the vapour," Job, xxxvi., 33); if asses bray violently; and if cocks crow at unusual hours, but especially when a hen and chickens crowd into the house, these are sure signs of rain. Cocks are prized in Japan for this reason.

Insects also are very sensible of such changes of weather. Flies cling to the ceiling, or disappear; hornets, wasps, and gnats sting more frequently against wet weather than in fair; spiders are restless and uneasy, and frequently drop from the wall, the moist air getting into their webs and making them heavy.* Frogs croak importunately; worms creep out of the ground; moles throw up more than earth usual; beetles and crickets are troublesome and noisy. But the surest sign of rain is given by bees: as soon as rain impends they cease to leave their hives, either remaining in them all day, or else flying only to a short distance.

"Horses stretch out their necks and sniff up the air just before a fall of rain. The fact is, they smell the odour of plants and hay, which moisture tends to disseminate, or prevents from rising above.

"Inanimate creation also sounds the alarm of coming wet or change of weather. Paper, straw, &c., fly about before rain. If, during calm, the smoke from chimneys does not ascend readily, or straight upwards, an unfavourable change is probable, with rain, simply because the air has lost density, and is unable to float up the smoke so readily as when drier and denser.

"Just before rain, flowers smell stronger and sweeter, for the reason before given, the vapours of the air preventing the scented particles of their perfume from ascending, as they would in drier air.

"Precisely for the same reason the cesspools, dunghills, water-closets, &c., give note of their existence before rain.

"Flowers and plants are otherwise good barometers. The Pimpernel, which is a very common flower, shuts itself up extremely close against rainy weather. The Trefoil swells in the stalk against rain, so that it stands up very stiff, but the leaves droop and hang down.

"If the Siberian Sowthistle shuts at night, the ensuing day will be fine; if it opens, it will be cloudy and rainy. If the African Marigold continues shut after seven in the morning, rain is at hand. The *Convolvulus arvensis*, the *Calendula fluvialis*, and the *Anagallis arvensis*, or Poor Man's Weather-glass, close on the approach of rain. It is obvious from these facts that we may make a meteorological garden by cultivating these hardy flowers, the observation of which would be a pleasing, and perhaps a profitable occupation."

Mr. Steinmetz does not seem to be aware that *Anagallis arvensis* and the Pimpernel are one and the same.

GARDENING IN CANTERBURY.

I FIND this season that one dozen of Williams's Bon Chrétien Peas will weigh 8½ lbs.; of Summer Bon Chrétien, 7 lbs.; of Flemish Beauty, or Fondante en Bois, 8 lbs.

I find that the leaves of Pear trees are attacked by the slimy grub, as they are in England.

I send you a dozen Ribston Pippins which have been gathered for one month; and in adding my opinion of their

respective merits, I never saw any equal to them in England for size, colour, and flavour, which says much for the culture of the Ribston Pippin here.—W. SWALE, Canterbury, New Zealand, March 30th.

WORK FOR THE WEEK.

KITCHEN GARDEN.

Now is a good time to apply salt to Asparagus and Sea-kale beds, about a pound to a square yard is sufficient. It is a great waste to lay it on after the plants have done growing, particularly when the soil is at all inclined to be cold and stiff. Stimulants applied now will enable the roots to lay up a good store of organised matter for another season, and therefore, in addition to salt, occasional applications of liquid manure should be supplied, if possible. The effect of this kind of treatment will be perceived in the autumn by the plants retaining their green colour much longer than others not so treated, and in the spring by increased size and productiveness, showing that the longer the functions of the plants can be preserved by the application of stimulants, the greater the amount of matter that will be stored up for the ensuing season. *Beans*, continue to top them, also *Peas* as they advance, and keep them well gathered as they become fit for table. *Broccoli*, the planting-out of this and *Winter Greens*, *Kales*, *Cabbages*, and *Cauliflowers* must be vigorously prosecuted, and every vacant space should now be kept well filled up. Liquid manure will be in continual request. *Celery*, the trenches for the main crops should now be prepared; for this purpose the spaces between the rows of Peas are very appropriate—the shade from the Peas will be useful to the Celery in its earliest stages, and the Peas will be entirely removed by the time they are likely to be injurious. *Kidney Beans*, another sowing may be made for succession, and advancing crops both of these and *Scarlet Runners* should be well thinned out. Keep the soil around them well forked up and pulverised; continued experience goes far to prove that the fork is the best instrument that can be used amongst widely planted crops. *Peas*, make another sowing; the Early Frame is the best sort for this and the next sowing, after which time there is little chance of their coming to perfection. *Lettuce*, continue to make occasional sowings of the White Silesian for stewing, and the Bath Cos and Green Cos for salads. *Turnips*, keep them well thinned-out, and watered when needful. *Tomatoes*, see that they are well thinned-out and nailed to the walls.

FRUIT GARDEN.

If dry weather set in we would recommend that due attention be given to watering fruit trees in general, for as the fly and other insects are unusually prevalent, an extra exhaustion will be the consequence. It is impossible to apply tobacco water in extent commensurate with the evil; clean water can, however, be forcibly dashed on the infested trees, and in such cases it is well to have some fresh-slaked lime at hand with which to cover the ground at the foot of the trees, for unless something is done the insects will re-ascend. To those who are particularly anxious about the future success of their favourite fruits, or who have been planting new kinds, we would say, Make strenuous efforts during the present period to extirpate insects, and to assist weakly or overborne trees. Rest assured that no mode of planting, winter pruning, or complicated modes of training, will be of any avail unless the vegetation of the summer's growth be attended to in due time. Gross shoots, or robbers of all kinds, should be constantly stopped when about 6 inches long throughout the growing season. A very general mulching should now be provided in the fruit garden where trees are properly planted and possess, as they ought to do, an abundance of surface roots. This proceeding is of the utmost importance. It is, moreover, easily accomplished, and when properly carried out, by no means unsightly. Now is the best time to thin out the young canes of Raspberries. Pinch off the tops of the young shoots of Figs, and thin the fruit if too thick. As soon as the Grapes on the open wall are set they should be well thinned; it amply repays the extra trouble.

FLOWER GARDEN.

Preparations should now be made for propagating border varieties of Pinks. Choose a shady situation on the north side of a wall or fence; prepare the ground by adding about 2 inches deep of fine, light, sandy soil, to be gently patted with the back of a spade, and then the pippings are pulled from the old plants and inserted without any further preparation, or

* Before stormy weather the spider draws in the threads of his web to the shortest extent; when these are long the weather will be fine. If he remains inactive rain will follow; if during rain he begins to stir, expect fair weather.

rather pressed into the soil. Afterwards give a gentle watering through a fine rose. See that a good number of Pansy cuttings are put in. Ranunculuses, Tulips, Hyacinths, &c., should now be taken up, and after they are dried stored away in some dry room. In light dry soils many things will be benefited by a thorough soaking of water, especially coniferous plants, most of which make but one growth during the season, and should be encouraged at the proper time when rapid growth is wished. This attention will be especially necessary in the case of young specimens growing on lawns. If Stocks, China Asters, &c., are not already planted-out where they are to flower, take advantage of favourable weather to do so, and attend to them with water, &c., for a few days until they become established. Stir the surface of the soil among the bedding-out stock, which will prevent the growth of weeds and greatly promote the progress of the plants. Let Carnations and Picotees be layered as soon as the shoots are in a proper state for that purpose. They make very useful border flowers, and are much prized in a cut state. See, therefore, that plenty of them are secured for next season. All boundary or other hedges should be clipped forthwith. A little pains taken with the walks at this season will be amply repaid by the air of comfort and pleasure which well-kept walks give to any place. The herbaceous tribes will now require a thorough staking. Do not form the plants like bosoms, but use sticks enough—sometimes two or three to a plant. Remember the late Mr. London's directions—"Let no two plants touch, if possible."

GREENHOUSE AND CONSERVATORY.

Many of the popular beauties here being at this period of a somewhat ephemeral character, means must be constantly resorted to in order to insure a constant succession of gaiety until frost set in, when the gap will be filled by Chrysanthemums, Camellias, Chinese Primroses, and several other midwinter flowers. The latter lead the way to the forced flowers of returning spring. Those who keep a sharp eye to such matters will always take care to have a surplus stock in hand after the massing of bedding plants has been completed. Such stock should be most ample—not less, but more than is wanted, in order to provide against gaps in the flower garden, and to supply the various in-door demands. Everything remaining in store pots of the spring propagation should be potted off forthwith, and placed on or plunged in ashes in a sheltered spot—sheltered, we mean, from the wind. Balsams, Cockscombs, and other tender annuals for succession, should receive their last shift before they become potbound, and plenty of the Achimenes family should be potted-off, some in large masses. A lot of the best scarlet and Rollisson's Unique Geraniums should be selected for flowering next winter; these should be grown rapidly and frequently stopped. Towards August they will become rather potbound; they must not, however, be shifted, but merely hardened in a very exposed situation until the end of September, in order to make them very sturdy and short-jointed. A light and warm shelf near the glass will then make them objects of great interest all the ensuing winter. Let the Fuchsia have ample supplies of water, and provide succession stock in case of exhaustion. The early-flowered Pelargoniums, now rather exhausted, should have the bulk of their tops removed, and made into cuttings. The old stools may then be laid on their sides in a shady situation until they break buds half an inch in length, when they must be disrooted and repotted in rather reduced pots. Exhausted Cinerarias may be put in an old frame or pit, and fumigated; they may then be cut down, and turned out into a raised bed in the garden. They will there feed and produce an abundance of suckers with a little attention in regard to watering, &c. The Perpetual and Bourbon Roses which have been forced should be placed in a cool situation, with the view of repressing further activity; after a season of rest the soil should be shaken from them, and all decayed roots removed, after which they should be repotted in fresh rich earth, and be removed to the protection of a cold pit, and there plunged.—W. KEANE.

DOINGS OF THE LAST WEEK.

KITCHEN GARDEN.

If we had time we would prick out separately most of the Winter Greens, Broccolis, &c., as the rains, since we last wrote, have made them large and crowd each other in the seed-beds; but if we cannot do so, we hope ere long to plant out a lot of these and Coleworts. Took advantage of such dripping

weather by transplanting a lot of Turnips where they were rather patchy, and planted some at from 6 to 9 inches apart in beds whence bedding plants had been taken. We have frequently had these doing first-rate, making nice crisp bulbs, and they come in in succession to the bed whence they were thinned. The general idea is that the Swedish Turnip only answers for transplanting-purposes; but we have often proved that the White Dutch and other early kinds answer very well if one precaution is attended to, and that is planting the root, but not burying the young bulb. Very often transplanted Onions make far better, sounder, and larger bulbs than those not transplanted; but in that case, too, the roots, properly speaking, must alone be planted, and the bottom of the future bulb should scarcely go into the ground; just so with these Turnips. So well do all the varieties of the Swedes transplant, that were we sowing a large field we would devote a few poles to a sowing, where the plants could more easily be protected from the fly, and then in a dripping day all vacancies could be filled up. We have seen whole rows thus transplanted, and turn out by far the best in the field. In fact, in the case of some small holdings, we have known the cultivator plant his Swedes just as he planted his own Cabbages; but on a large scale the farmer would be too dependant on the weather to follow such a course.

Asparagus.—Pretty well gave over cutting, as we wish most for forcing next year. What is cut very late is of little use the next season for any purpose. Gave a slight dressing of salt to all, and especially the young rows that will be forced the season after next. This will not only help vigorous growth, but will kill many little weeds that this showery weather is bringing on in abundance.

Sea-kale.—Gave this also a little salt, and would thin some seed-beds if we could. If, however, the plants stand pretty thickly the first season, and are planted-out early next spring in good, rich, rather light soil, and tolerably well cared for during the summer, they will make nice serviceable plants for forcing in the following winter. There is no greater help to the gardener than this delicious vegetable, which may be had with but little trouble from November to the end of May. What has not been forced this season, or rather blanched out of doors by some of the simple modes referred to, will now most likely be in bloom, and what is not wanted for seed had better be cut off, as it greatly exhausts the stool. That head of bloom, just when the flower opens, is most delicious when cooked like any other vegetable. A pinch of carbonate of soda in the water will make it all the more tender, and will injure no one. This is a great help to all green vegetables, and it is more pleasant to see them turned out green and tender as marrow, instead of being of a dingy yellow, half boiled, and pretty well as tough as pieces and ribands of soaked leather. Many cooks holding a high place in their profession consider it beneath them to attend to the boiling of a Cabbage or a Potato, and consequently these vegetables are often sent up to dinner in a state in which even a peasant would not venture to touch them.

Onions.—Will thin them out properly, if possible, before the ground become dry again, they will come out so nicely; and then we shall prick out some thickly on a sandy hard surface, to obtain button Onions, and others we will lay in by the heels neatly to suit for salads, before the last sowing come in. When Onions in a small state, like stacking needles in size, are in demand for salads, seed should be sown in small beds every fortnight up to October, and then early in spring under glass. The worst of the health-keeping Onion is, that it leaves such a scent behind it. For Lettuce, Celery, &c., and general work, see last week.

FRUIT GARDEN.

The fruit of some of the Strawberries out of doors is colouring, and still we have a good supply under glass frames, &c., which is very useful for sending to a distance in this moist weather, as pack how you will, damp fruit, and especially damp Strawberries, travel badly; but though the weather is damp, and there must be plenty of soft food now to be had, the thrushes, blackbirds, and sparrows, are on us in shoals, and no sooner does a berry become red on one side, than it is scooped out like an empty coal-scuttle. Just now the sparrows seem to divide their attention between the Peas and the Strawberries, and their firm strong bills can do fearful execution on both.

The Peach-house and Fig-house we look over almost every day, for though in the former we have placed soft hay on the floor, in case the fruit should fall, a fallen Peach is generally more or less injured, and shows the mark of the fall,

when it lies a day or two, whilst those picked carefully before they are quite ripe, will keep well some days, and always travel better. The very hot days the other week will prevent us gathering in one house for so many weeks as usual, but the bright sun has given a fine colour to the fruit. Thinned out a few of the smaller shoots and leaves from the pretty-well untrained Fig plants in the pit, that more light and air should reach the fruit. We believe that often a Fig is scorched into a flavourless thing when exposed fully to the sun, but then the shade of the leaves should not be too dense. On some trees out of doors not touched at all as yet in the way of pruning or regulating, the crop seems to be very heavy, and is swelling fast this moist weather.

Cherries out of doors are changing and becoming soft enough for the birds to be at them, and so must be netted. Have gathered for ten days some nice dishes from the coolest orchard-house, and earlier from the other, which we keep a little closer by shutting it up earlier. We have only had one thrush inside as yet; if birds visit under glass we must net the ventilator-openings.

Cherries are one of the fruits from which great gatherings can be had from pots, and the trees will bear heavily for years, whilst scarcely increasing in size; but they must have plenty of water, and the water must not be stagnant. One or two of our little plants that produced heavily for some years, have shown signs of weakness this season in not setting heavy crops, though the bloom was abundant. For that time the plants have been lifted out of the soil every autumn, breaking any roots through the drainage holes, and then they were well watered, and before winter the surface soil was picked and scraped off and fresh compost added, and this, with the exception of watering, is all the trouble they have occasioned. Once or twice during the summer they are mulched with rotten dung. We would use horse-droppings, but we do not like to be troubled with the corn that grows from them. If we can make the opportunity we have some thought of repotting all these productive plants in the autumn—that is, to take the ball out, carefully reducing it with a pointed stick or the finger, and to replace it with fresh compost in the same-sized pot; and we would do this if we could as soon as the buds were firm, and the leaves had a good deal of green on them, as we should like the rooting process to go on at once. Merely on account of watering, were we sole regulator in the affair, we should be inclined to plant them out, and keep them within bounds by root-pruning; but for amateurs with little space there can be nothing more simple and pleasing than pot culture, and a small plant will produce nicely in an eight-inch pot, as well in proportion as a larger plant will do in a 14 or 18-inch pot.

Orchard-houses.—Went regularly over the trees in a wet day, greatly thinning the fruit, and most likely leaving too many, this thinning being the best security for carrying Peaches and Nectarines over the stoning without dropping or other signs of distress. Nipped out the points of the shoots, and thinned them so as to let them have a fair amount of sun and air, and to keep down *red spider*. Washed again with soap water and Gishurst, treated as described the other week. Though after such a regular washing we could with a glass detect scarcely one insect alive, in two or three days we could detect by the same means, when carefully looked for, a few whitish-coloured ones, showing that they had not been long hatched into life. Until the very hot weather about ten days ago, we had scarcely seen a trace of red spider this season, and began to think that for one season it was going to give us no trouble. Its first appearance was in the Peach-house, on a part of a tree that comes quite close to the heating pipes, and which arrangement we cannot alter without pulling the whole old concern to pieces, and then we know it is so rickety that though it may stand if let alone, it will never be fit to put up again. This part of a flat pipe was heavily coated with sulphur, and bricks were placed on it flatwise, also encrusted and lined with sulphur; but, nevertheless, here for the space of a couple of square feet the marked appearance of the leaves told of the enemy, whilst all the rest of the house seemed untouched. This part was all sponged, but that did not quite arrest the insect, though even now there is little appearance of it in the house, and it will be easy to destroy it when the fruit is all gathered. The orchard-house is very near this Peach-house on the same wall, and we have no doubt the insects went from the one place to the other, unless the heat hatched some eggs that all our washings, &c., had left to live on through the winter and spring.

As a proof of how easily such insects may be carried from one house to another, and from one garden to another, we may

repeat what was before stated, that some Strawberry plants in the Peach-house began also to show signs of the visitors, and on watering them on a raised shelf, one of our young men observed something like the finest dots of sand on the sleeve of a light dark coat. These were so small, that with the naked eye we could notice no movement; but when examined through a microscope we could see in motion the tiny limbs of very small, young, white-coloured red spiders. Of course we took out the Strawberry plants carefully and syringed the house where we dared on account of the Peaches, and still the first part of the house affected continues to be the place where more than traces can be seen. When taken in this young state these insects are more easily destroyed, and were it not for the successive broods produced so quickly and in such abundance, it would be no great matter to keep a place free of them where washings can be resorted to. We mention this about the sleeve of the coat to show how easy it is to carry these insects even by our clothes from one place to another, and we do this the more particularly because some friends have been inclined to make merry and joke at a statement of ours, that insects were often taken from one garden to another by the clothea of visitors. We have no doubt that in a nice warm day these young Acari would have lived for hours on the sleeve of the coat, and if the wearer had gone to a garden five or ten miles off, and accidentally brushed against some branches or leaves in the houses so as to dislodge the tiny dots, that there at once they would consider that they had happily come into a rich feeding ground, and would take possession accordingly.

There are a few gardeners who, either on the untidy Mrs. McLarty's principle of "I cannot be fashed," or from the foolish pride that would tempt them to be independent of appearances, make a sort of apologetic boast when they visit another garden—"Oh, I just started as I was," not sensitive enough to perceive the fact that the gardener visited would be ashamed when in their company to meet a respectably-dressed person. A slight regard to our own self-respect—the feeling that enables a working man to plant his foot more firmly on the ground, and bear his head more upright when he is clean and fresh in person and clothing; the respect for our neighbour, that he should not be ashamed of our appearance, whatever company might be with him; aye, and the fact of the insects on working clothes above referred to, ought to induce us when we visit not to go out "as we are;" not by any means as dandies, and gilded popinjays, but clean and respectable in our appearance, and in garments different from those in which we perform our usual work.

Injuries.—We have as yet seen no trace of insects here, though they have never been syringed; but we must not be too confident that they will not come, and yet from the time the fruit has been cleared from each house, they have scarcely been empty of plants, except when the houses were washed. We have just been taking out most things, as little light can now reach them from the roof. In the first division, Sweetwaters are ripening, and some Hamburgs beginning to colour, and from this house we will now clear everything as soon as possible, in order that we may keep the atmosphere drier, and as under-crops in the other succession-houses, we will place Ferns, and fine-leaved Begonias, &c., where enough of light can be obtained for them. The front of such houses with front glass is a capital place for Gloxinias and Gesneras, provided the glass is dulled a little higher than the flowers of the former and the foliage of the latter. Watered the Vines against the back wall of such houses with manure water, and threw some scot and superphosphate on the border out of doors, where the rains would wash them into the border. Proceeded with the first thinning of the late house—a work of great labour amongst so many bunches, though only one bunch was left to a shoot. In order to have a great supply, we have allowed the Vines pretty well to cover the roof, instead of confining them to the rafter, a system which answers that purpose very well as to quantity and weight; but it is much against growing many plants in pots beneath the Vines, after the leaves of the latter keep out so much light from the floor.

ORNAMENTAL DEPARTMENT.

Out of doors the work has chiefly been mowing, sweeping, rolling, weeding, &c., when the weather would admit of it. Pottling, tying, and propagating in-doors, especially when wet, such plants as alluded to a fortnight ago. Thinned Hollyhock stems, some for cuttings; planted out half-hardy annuals; sowed hardy annuals for succession, Mignonette for autumn, and in pots for early winter; potted Chrysanthemums, and

cleaned Azaleas. If the dull weather continue must reduce our shade of whitening from plant-houses, or the plants will be too much drawn. Attended to the security of bedding plants in the high winds. Were we to enlarge we would only be repeating the doings of some previous weeks, but we must refer to

Watering, as alluded to last week. Two or three notes have come, which, though without true names, state in so friendly a manner the inability of the writers to appreciate the importance of watering plants out of doors in drizzly weather, whether the weather afterwards should be wet or dry, that we would gladly clear up all these doubts if we could. If they were sure the weather would be dry, it would be all right enough, but why water, when, as the event happened, there have been heavy showers since, and rather dull weather? To this we simply reply, that we were not weather prophet enough to make sure that we should have so much rain; but besides all that, we have ocular demonstration that it was right to water under the circumstances described, whether the succeeding weather in a moderate degree should prove dry or wet. The beds so watered at the roots have gone on nicely, a bright burst of sun did not affect a single leaf. A part unwatered, and chiefly on account of the showers of that and the following day, does not look nearly so well. Though the showers have been heavy, and have wetted the ground considerably, yet they were long in reaching the roots of the fresh-planted plants, and, therefore, there is the fact, that whilst the watered plants have not a single yellow leaf, there is a considerable number of these signs, and proof of a want of reciprocal action between the roots and the branches in the beds of plants that were not so watered, even with the frequent showers up to the time of writing. All these plants were watered separately at planting, but the second watering, as detailed last week, has proved of benefit.—R. F.

COVENT GARDEN MARKET.—JUNE 23.

HEAVY supplies may be noticed in all departments of our trade, and reduced prices in some; but a fair amount of business is now doing. Among our imports is a large cargo of West India Pines, being the first this season. Good samples of Potatoes still come from the Channel Islands, and seem to take the lead in point of quality.

VEGETABLES.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes	each	0	3	0	6	Leeks	bunch	0	3	0	0
Asparagus	bundle	3	0	6	0	Lettuce	per doz.	1	0	1	6
Beans, Broad	bushel	0	0	0	0	Mushrooms	pottle	3	0	4	0
Kidney	100	1	0	2	0	Mustd. & Cress	punnet	0	2	0	0
Beet, Red	doz.	2	0	3	0	Onions	bushel	6	0	8	0
Broccoli	bundle	1	0	1	6	Parsley	½ sieve	2	0	0	0
Brs. Sprouts	½ sieve	0	0	0	0	Parsnips	doz.	0	9	1	6
Cabbage	doz.	1	0	0	2	Peas	per quart	0	9	1	3
Capicums	100	0	0	0	0	Potatoes	bushel	2	6	4	0
Carrots	bunch	0	4	0	8	Kidney	do.	3	0	4	0
Cauliflower	doz.	2	0	6	0	Radishes	doz. hands	0	6	1	0
Celery	bundle	2	0	3	0	Rhubarb	bundle	0	4	0	8
Cucumbers	each	0	4	1	0	Savoy	doz.	0	0	0	0
pickling	doz.	0	4	1	0	Sea-kale	basket	0	0	0	0
Endive	doz.	2	0	0	0	Shallots	lb.	0	8	0	0
Fennel	bunch	0	3	0	0	Spinach	bushel	2	0	3	0
Garlic	lb.	1	0	0	0	Tomatoes	per doz.	2	0	4	0
Herbs	bunch	0	3	0	0	Turnips	bunch	0	6	0	9
Horsersdich	bundle	2	6	4	0	Vegetable Marrows	dz.	0	0	0	0

FRUIT.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples	½ sieve	0	0	0	0	Melons	each	4	0	8	0
Apricots	doz.	4	0	6	0	Nectarines	doz.	10	0	20	0
Cherries	lb.	0	6	1	6	Oranges	100	6	0	12	0
Chestnuts	bush.	0	0	6	0	Peaches	doz.	10	6	15	0
Currants	sieve	5	0	6	0	Pears (dessert)	doz.	0	0	0	0
Black	do.	0	0	0	0	Kitchen	doz.	0	0	0	0
Figs	doz.	8	0	15	0	Pine Apples	lb.	5	0	10	0
Fiberts	lb.	0	0	0	0	Plums	½ sieve	0	0	0	0
Cobs	100 lbs.	0	0	0	0	Quinces	½ sieve	0	0	0	0
Gooseberries	quart	3	4	0	6	Raspberries	lb.	0	0	0	0
Grapes, Hothouse	lb.	3	6	6	0	Strawberries	lb.	0	3	3	0
Lemons	100	6	0	10	0	Walnuts	bush.	14	0	20	0

TRADE CATALOGUES RECEIVED.

F. & A. Smith, Park Road, West Dulwich.—Retail Catalogue of New and Choice Plants.

Smith & Simons, 1, Buchanan Street, Glasgow.—Descriptive Priced Catalogue of Dutch and other Flowering Bulbs, New and Select Roses, &c., 1866-7.

George Matthews, Moray Place, Dunedin, New Zealand.—Garden Calendar, and List of Seeds, Trees, Shrubs, &c.

TO CORRESPONDENTS.

“We request that no one will write privately to the departmental writers of the ‘Journal of Horticulture, Cottage Gardener, and Country Gentleman.’ By so doing they are subjected to unjustifiable trouble and expense. All communications should therefore be addressed solely to The Editors of the Journal of Horticulture, &c., 171, Fleet Street, London, E.C.

We also request that correspondents will not mix up in the same sheet questions relating to Gardening and those on Poultry and Bee subjects, if they expect to get them answered promptly and conveniently, but write them on separate communications. Also never to send more than two or three questions at once.

N.B.—Many questions must remain unanswered until next week.

“LIVE AND LEARN” will oblige by returning the plants to Gaylard Hadwen, Esq., Birch House, Lens, near Manchester.

BEDDING GERANIUMS.—I must correct an error in my notes on these. I said that Senior Wrangler was exhibited by Mr. Jabez Chater, of Braintree. It should have been of Gonville Nursery, Cambridge.—D., Deal.

TOBACCO-GROWING IN ENGLAND (A Gardener, Winchester).—You will have seen what is stated in our last Number. Legally it cannot be grown at all for gardening-purposes.

PROPAGATING PAULOWNIA IMPERIALIS (C. E., Suffolk).—The readiest way is by layers; the shoots being layered in spring will be well rooted by autumn, and may then be detached from the parent. They are best layered with a tongue. Sometimes suckers come from the root; these, taken off in spring with any root they may have, and potted in sandy loam and peat, strike readily in a gentle heat. Another mode of increasing the plant is by cuttings of the growth of the current year taken off when three parts ripe, or in September, with three or five leaves or joints, cutting them transversely below the lowest joint. After removing the leaves for two-thirds of the length of the cutting, insert the part thus divested of leaves in sandy soil, cover the cuttings with a hand-glass, and keep them close and shaded from bright sun. Their rooting will be hastened by placing them in pots in equal parts of sandy peat, loam, and sand, plunging the pots to the rim in ashes, tan, or sawdust over a gentle hotbed, and affording them the protection of a greenhouse in winter. An equally certain method is, when the shoots have made a growth of 5 or 6 inches, to take them off close to the stem whence they take their rise, and with a sort of heel. This is to be pared smooth with a knife, and the cuttings inserted half their length in the compost previously mentioned, but with their base resting on silver sand, with which, also, they should be surrounded by filling up the pot with it. A mild hotbed of from 70° to 75° is essential, and a moist atmosphere with slight shade from bright sun; care should be taken not to overwater the soil but to keep it just moist. In a month the cuttings will be rooted, or a callosity will be formed; then admit air more freely, and harden off.

VINE CULTURE (T. P.).—You may now apply a dressing of bone dust, and neatly point it in with a fork, but this is best done before the Vines commence growth. The Vines would be all the better of a good syringing at the time of shutting up the house, which we apprehend you do early; and maintaining a moist atmosphere by syringing or sprinkling the floors, walls, &c., twice or thrice a-day is also calculated to promote growth. With the late heavy rains the ground will be sufficiently moist, but you may water the border well if a dry period occur before September. A little Lettuce may be grown on the border, but it will not do the Vines any good. By night the temperature at this season for Vines in active growth should be from 60° to 65°; from 70° to 75° by day in dull and somewhat cloudy weather; and from 75° to 80° on clear days. The temperature may rise to 85° or 90° on hot days with plenty of air.

CLIMBERS FOR CONSERVATORY (W. L.).—Habenorrhodum Abellii, H. aurantiacum, and H. elegans; Mandevilla suaveolens, Rhyncospermum jasminoides, Sollya heterophylla, Passiflora Newmanni, P. cœrulea racemosa, and P. Imperatrice Eugénie; Lapageria rosea, Jasminum gracile variegatum, Plumbago capensis, Clematis Jackmanni, Kennedyia inophylla floribunda, K. rubicunda superba, Hibbertia Cunninghamii, Bignonia jasminoides, B. grandiflora, Mimosa prostrata, and Brachysema acuminata.

SAND ON SHELVES—DESTROYING THRIps (An Old Subscriber).—Common red sand put 3 inches thick on the shelves of a stage will not produce thrips, and it is, as far as we know, not injurious to plants standing upon it in pots. Fine gravel, with the sand or dirt sifted out, is better than sand. A dry atmosphere is the principal cause of the presence of thrips. The best remedy is to have the foliage of the plants dry, to close the house, and on a calm evening to fill the house with tobacco smoke, so that the plants inside the house cannot be seen from the outside. Repeat this fumigation the next night but one, and again in a week twice as before, and do this every week for six weeks. Syringe twice daily, directing the force of the water against the under sides of the leaves, and along with this keep the paths, floors, walls, &c., sprinkled with water twice daily. Syringe and give air early in the morning before the sun shines powerfully upon the house. We fear you do not fumigate sufficiently, and expect one good smoking to kill the insects. That it will do; but no amount of smoking will kill their eggs, and these hatching in a short time give you as many insects as before. If you continue to fill the house with tobacco smoke whenever an insect is seen you will assuredly overcome thrips.

GRAPES COLOURING (M. T.).—Continue watering the greenhouse to secure a moist atmosphere, and admit air very freely. Colour in the berries depends much upon the free circulation of air. We admit it all night in warm weather.

STEAM FROM ZINC TROUGHS (J. F.).—We have had an open tank of zinc and never found the steam arising from it in any way injurious to the plants in the house, and we have had troughs made of zinc to fit the flow-pipe of a viney, and though we kept them full of water the steam did not in the slightest degree produce any scorching effects on the leaves of the Vines. We can only account for the leaves being scorched by supposing them to have had the moisture from the troughs condensed on them during the night, and the sun shining on the leaves whilst wet would, exposing there was no air, cause scorching. Through straining the pipes on a dull morning to raise steam, and the sun breaking out unexpectedly, we have had leaves scorched when no air was given to allow of the escape of the moisture as it became rapidly heated by the sun's rays, or rather from the atmosphere being saturated with moisture, so that there was no evaporation of the water on the leaves; the water standing on the leaves consequently became so heated as to scorch them.

SLUGS (E. B.).—All that you can do to protect your plants, either in the kitchen garden or flower garden, is to water the surface slightly every evening with lime water. Sprinkling slaked lime among the kitchen garden crops will also keep the slugs in check. As the soil is naturally wet, the only effectual preventives will be draining it, and burning about six inches of the entire surface.

PLANTS EATEN BY CATERPILLARS (G. K. S.).—We think the leaves of the *Calceolarias* and *Verbenas* enclosed are eaten by some caterpillar, which we think you will find if you examine the under side of the leaves minutely. Your only plan will be to have them picked off by hand. Perhaps if you were to look later in the evening than seven o'clock you would be able to find your enemy at work. To the kitchen garden we would advise a dressing of fresh-lacked lime over the whole of the crops, and sprinkling dry soot over those particularly infested. Apply the lime in the evening before dark, but the later the better.

EXUDATION ON BLACK HAMBURG GRAPES (M. A. H.).—The Grapes was crushed by the stamping of the post-office officials, so that no exudation could be detected. Probably it arises from the very vigorous growth of the Vines. Admit air more liberally, and keep the roots drier.

SEEDLING CALCEOLARIAS (S. W. E.).—They are pretty, but far inferior in size and form to many others. The colours and marks are not novel.

NAMES OF PLANTS (W. T.).—1, *Clematis montana*; 2, *Linaria cymbalaria*; 3, *Sedum acre*; 4, *Taxodium distichum*. (Mr. M.).—*Callistemon lanceolatus*. (Mr. Aldred).—*Rubus odoratus*. (Isa).—*Poa*, uncertain what species. (L. A.).—1, *Escallonia rubra*; 2, *Leucathoa axillaris*, var. (*Alex. Ingram*).—The fragments forwarded to us are insufficient for determining anything more than the family.

METEOROLOGICAL OBSERVATIONS in the Suburbs of London for the Week ending June 23rd.

DATE.	BAROMETER.		THERMOMETER.				Wind.	Rain in inches.	GENERAL REMARKS.
	Max.	Min.	Air.		Earth.				
			Max.	Min.	1 ft. dp.	2 ft. dp.			
Sun. . . 17	29.739	29.544	66	39	60	57	N.W.	.05	Cold and hoisterous, with dusky white clouds; cold at night.
Mon. . . 18	29.652	29.490	61	47	60	57	S.W.	.69	Cold rain; boisterous and showery; rain at night.
Tues. . . 19	29.824	29.610	67	34	59½	56½	W.	.02	Masses of white clouds; rather boisterous; nearly freezing at night.
Wed. . . 20	30.014	29.959	72	49	59	56½	S.W.	.01	Cloudy; masses of white clouds; fine; cloudy. (heavy rain.)
Thurs. . 21	29.889	29.809	82	53	60	57	S.W.	.84	Very fine; cloudy; hot; thunderstorm with much lightning and
Fri. . . 22	29.995	29.846	78	43	59½	57½	S.W.	.00	Cloudy; very fine, with white clouds in bright blue sky; very fine.
Sat. . . 23	30.102	30.078	81	46	60	59	S.E.	.00	Very fine throughout; dark haze.
Mean	29.889	29.762	72.43	44.43	59.71	57.21	..	1.01	

POULTRY, BEE, and HOUSEHOLD CHRONICLE.

POULTRY AT READING.

It is always agreeable to the feelings to look upon robust old age—old age when the mind is strengthened rather than weakened by time, and the body stands, as stands some ivy-covered Gothic tower, strong as the day it was finished, and far more ornamental. Such was the old age of our Lyndhurst and Palmerston; and not infrequently we elergymen find aged poor whose minds have been in their latter years improved and refined by religion, while their bodies have continued perfectly vigorous. Next to persons, I like to look upon places that are old, but bear no traces of decay. Such, for instance, is Reading, where was buried, in a rich and noble abbey, King Henry I.—a place of mark then, in the twelfth century; and in the time of the civil war Reading was esteemed a place of considerable strength, and the king's garrison which lay nearest to London was here, and 18,000 men—so formidable was Reading—were obliged to carry on the siege by regular approaches, so that it was a town having a large population in the seventeenth century. And now in the latter half of the nineteenth century I find Reading rich, and busy, and increasing, as its new houses for rich and poor, and its new churches, plainly show. So here is an old town vigorous and thriving, extending each year further and further, and holding up its head as importantly as ever among the towns of gravelly, sunny, Thames-bounded Berkshire.

I found the Show at a convenient distance from the station; and although my eye was as yet somewhat filled with Salisbury Show, and therefore almost any such meeting must look small by comparison, yet I soon found that I was present at an exhibition well worthy in all its parts of careful attention. I was among those early ones who were kept waiting outside the gate until the clock struck eleven. It is always pleasant to be early at a show. "The early bird gets the worm," (how foolish of the worm not to go to his bed a little sooner); and one who arrives first is sure to be rewarded with some extra amusement in watching the coming-in of others. Away at once to where those vigorous crows beckon me. I find myself almost alone, save those sleepy-looking guardians of their master's and mistress's fowls, who delight to loll on bundles of straw or sit on empty hampers, and then doze and yawn. Soon come in the exhibitors, breathless, highly excited, as eager to know their fate as ministers after a reform debate. There at

a quick march, almost double quick, come a brace of ladies. An eye-glass is raised, and I hear a loudly expressed "Well done! I have won the first prize. What a triumph! How very nice, dear!" Then the answer from the devoted friend whose vision is clearer—"I don't think those are your birds, dear. The catalogue says they belong to Mr. —." The delighted smile gives place to a look of amazement, that to disappointment, that to despair and depression combined, soon, however, alleviated by a good fit of grumbling, in which the Judge, the Committee, and the other exhibitors are not spared; and ten minutes afterwards self-compacency is entirely restored, and the words, "Wo'n't I beat next time, that's all!" are heard. The poultry tent was of sufficient size; so were the pens, which were not made of wood with wire fronts—not pens, in fact, of the rabbit-hutch type—but the sides were of galvanised iron, and top, back, and front wire. Hence there was a lightness and coolness, for a summer show especially, which was excellent. Then, the middle rows standing back to back, you saw through two pens at once, and the effect was very pleasing, and the Show appeared twice its size. It was the difference between an ugly wooden fence and a division of light iron railings. Away, then, with the wooden rabbit-hutches. Let committees of smaller shows hire these pens. I heard they came from Sheffield. They are light for carriage, and I think take to pieces, and if so, would pack in small compass. Let us everywhere have these, or such-like elegant, durable pens, where no vermin can lurk, and where the means of seeing is so much improved by there being light at the back of the birds.

I found that the Dorkings were here Class A—their right place in my humble opinion, as they, beyond all fowls, are the most useful. It was a strong class, there being fourteen pens, but Captain Lane's was by far the best; the cock is a wonderful bird. The youngest amateur present would as readily have given the first prize to this pen as the Judge, the superiority of the bird was so marked. Miss Milward was second, Mr. Parlett third. The Game class was a good one, especially considering that not one pen came from the north of England, so without such mighty help we could look upon good birds, which was creditable to the south. Polands,—there were my old black friends from Lyndhurst, and it is encouraging to the few Polish breeders that every one of the four pens was distinguished by prizes or high commendations. Spanish, only three pens present; Mr. Heath's were entered, but did not appear, probably worn out by their week at Salisbury. A week is too long a time for a summer show, but one day is certainly too short for such a show as the Hants and Berks. I forgot to

notice in their order that there were only two pens of Cochins to compete for three prizes! Of the Hamburgs I must say the Silver-pencilled were but indifferent, the Golden the best in both varieties, though one Silver-spangled was good, though deservedly beaten by a very superior Golden pen. There were thirteen pens of Hamburgs in all—not amiss, and so far from the midland counties.

The Brahmans are certainly advancing in favour. Eleven pens here to two of Cochins. It was a case of "the old man being beaten by the boy." Mr. Pares was in his old place with Light Brahmans, and Captain Lane first with his Dark. Among the "variety class," a class which sadly needs dividing, was a good pen of Silver-laced Bantams and a good pen of Malays (Mr. Hinton's); these, I noticed, many fanciers admired. I learnt from a very experienced London gentleman that Malays were formerly, and I believed now, much kept in some of the most confined parts of London, and that in tiny back yards they lived healthily and laid abundantly; so that if I became rector of one of those city churches, and lived near them, I still might keep a few Malays to cheer my eye, and their newly-laid eggs would adorn my breakfast-table. I am glad to speak a word for this variety, as my poultry-conscience tells me I have given it many a hit, and the birds look so very hard at me that I feel it best to keep a respectful distance from the pens. It is certainly something that you can find a fowl which will do well in a state of confinement, which even a Spanish or a Cochin could not stand. So, Malays, you are not handsome I must own; but if useful, and if you give pleasure where no other fowls could do so, long may your long forms be seen in little close back yards. Ducks, Turkeys, Geese, all good and numerous. There were a few Pigeons—too few—and some Rabbits, which gave interest to the Show. The doe with young ones called forth praise from visitors of what our Editors call "the Eve variety."

For the first time in my life I must praise the refreshments. I actually got a decent dinner; not, as at Salisbury, being offered a plate of coarse half-raw beef, a loaf with a bit of soft, wet, unbaked dough in the middle, and when I asked for lettuce, seeing some about, I was told by a facetious or, rather, impudent waiter, "That's a growing, Sir." Though I went for my lunch at but two o'clock, when there ought to have been plenty, instead of decent food, I had offered me (I did not eat it), what I know my servant boy would refuse. How long will English people bear to be cheated in this way? for I had first to pay for a lunch ticket. At Reading I found good food and civility, though no grand tent such as at Salisbury.

I never enjoyed any show more than the Hants and Berks, a pleasant, sizeable, nice show it was; jolly farmers with gig umbrellas on their shoulders, kind agricultural faces, high-born ladies, old poultry friends, and a fine, day, not hot, but pleasantly cool, contributed to amuse, please and gratify—WILTSHIRE RECTOR.

EVIL EVENTS AT WOODBRIDGE POULTRY SHOW.

I AM one of the many unfortunates whose fowls arrived too late for competition at Woodbridge; the pecuniary loss to me was about 25s. entrance money, and 7s. 6d. carriage. However, there is a doubt as regards the punctuality of my poultry man, and, perhaps (in my case), the railway company were not to blame, I give them the benefit of the doubt; but there is one little circumstance connected with that Show which I am unable to understand. A beautiful pen of Pile Game Bantams I sent, has never returned, nor can I obtain any information respecting them. The Secretary wrote and told me that a tent was blown down, and that several birds escaped. On inquiring of him for the missing Piles, he has not honoured me with a reply, so I presume the birds have "flown away," unless they are being detained at Woodbridge (as a couple of Brahma hens of mine once were), until another exhibition elsewhere be over.

This is not encouraging on the whole, but I am still simple enough to believe that if the fact be mentioned in the columns of "our Journal," it may come under the notice of the holder of the birds, and he may be induced to restore them. I have plenty of their chickens, but I am sure none better than the parents, so I really should like to recover them.—T. C. H.

PREVENTING A HEN SITTING.—Seeing several remedies for sitting hens, I have one which I used when a boy with good

success, making much fun: Take a red rag as large as your two hands, and tie it on to the hen's tail firmly, and let her go; she will not stop to sit. The rag must be very red.—W. L. P.

SPANISH FOWLS PLUCKING EACH OTHER AT THE SALISBURY SHOW.

SEEING in the Journal some remarks by "WILTSHIRE RECTOR" about the first-prize Spanish fowls at the Bath and West of England Show, held at Salisbury, having plucked each other bare, I beg to state that as soon as the judging was over Dr. Brent, the senior Steward, allowed me to remove the hens to empty pens; but they were put back by Mr. Bush, and he gave orders they were not to be removed unless one bird was actually killing the other. The plucking was caused by one of the hens only going to Beverley the previous week, and the other hen being added for the Salisbury Show; and though they had all been previously running together, the temporary separation for Beverley caused it. The refusal of Mr. Bush to allow them to be removed after the judging was over has completely spoiled the pen for months to come.—JOHN MARTIN, Poultry Manager for Viscountess Holmesdale.

THE THORNE AGRICULTURAL AND POULTRY EXHIBITION.

FROM the visitation of rinderpest all agricultural shows of the present season have suffered exceedingly, whilst not a few such meetings have been much assisted this year by the poultry department in carrying out the annual exhibition. We rejoice to say the Thorne Show just closed has been a most successful one, although the positively drenching rains of the two preceding days agured most inauspiciously. The afternoon of the Tuesday was one continuous blinding sheet of rain, and everything foretold a most comfortless meeting; but happily for all parties the Wednesday proved all that the most ardent well-wisher of the Thorne Meeting could desire. It is true that the look of the morning sun was watery in the extreme on Wednesday last, and a soaking day seemed then inevitable. As time went on, however, all things began to brighten; so much so, that the most downcast of the Committee ventured then to hope for better things. About 10 A.M. the weather seemed to settle down for a fine day, and the result proved that such conclusions were the true ones, although an occasional heavy drop or so of rain showed that the atmosphere was still changeable. We cannot dwell on what might have been the consequence of the weather had it continued as it was the day previous to the Show, it must have resulted in an absolute failure, however, as all the Exhibition was thoroughly exposed; but we turn with unfeigned pleasure to the fact, that on the day of the meeting all was summer-like throughout, and every one who attended thoroughly enjoyed this annual re-union.

The Show was remarkably well attended, and the truly indefatigable Secretary, Mr. Richardson, displayed, as usual, his willing attention to every inquirer, and thus obtained not only the continuance of the good wishes of old friends, but equally enlisted the good opinion of those parties who now met that gentleman for the first time. Such a Secretary is indeed the greatest acquisition to any show.

The *Spanish* was one of the best classes on the ground, and the three principal pens of this breed were very close rivals. *Dorkings*, on the contrary, were not nearly so good; the condition of the birds throughout being not by any means perfection. At one of the previous Thorne Shows has there been so small an entry of *Cochins*, and although the winning birds were quite equal, perhaps, to usual, the class was by no means remarkable for excellence. The *Game* classes necessarily (in June) lacked that most important feature "condition;" so much so, that in the class for Whites and Piles the second prize was altogether withheld. Many of the pens of the *Brahmas* were exceedingly good birds, but the matching of the birds was most unfortunate. In the Single Game class there was a very good competition, though the condition was not first-rate. In this class Mr. Vallenante, of Littleborough, the exhibitor of pen 498, had tried to impose upon the Arbitrators by two or more feathers of his Game cock's tail being tied on; a first glance easily revealed the deception, as it was done most laughingly, whoever might be the operator; and these deceptions when attempted certainly require a little more artistic skill than was displayed in this instance. Decidedly the best class in the Show-yard was the one for "A pair of single hens of any breed;" in fact so good were they, that the Arbitrators admitted they scarcely "ever saw a better." The class for single cocks of any variety was scarcely less creditable.

Turkeys and adult *Geese* were well worthy of especial mention, but the gulls—or, as here called, "gibs"—that is, *Geese* of the current year's hatching, were not so good and matured as would be natural to the midland and southern counties of England. *Guinea Fowls* were excellent.

A poor dog fox, caught only a few days prior to the Show on the Moors, was the very unwillig occupant of a large pen; he appeared to be quite willing, however, to have foregone all public admiration to have gained his natural liberty. We admit that he looked with a longing eye, if not lovingly, on his feathered neighbours, but seemed as though some slight idea flitted occasionally across his mind that the doom of a "bagged Fox" is not one to be too closely sifted or reflected on.

We again repeat our congratulations on the fineness of the weather that prevailed. The thoughts of damp feet seemed never to have entered into the consideration of the fairer portion of the visitors, and the Show of 1866 proved a complete success.

With so highly deserving a Committee, and so indefatigable a Secretary, such a result is most gratifying, and we ourselves earnestly hope, ere another season comes round, the rinderpest may prove a bygone, and the Thorne Meeting may again attain its former proportions.

SPANISH.—First, Messrs. Birch & Boulter, Sheffield. Second, H. Beldon, Bingley. Highly Commended, J. Thresh, Manchester. Commended, W. Harvey Sheffield; F. Marchant, Halifax.

COCHIN-CHINA.—First, C. W. Brierley, Manchester. Second, H. Beldon.

BRAMA POOTRA.—First, G. H. Roberts, Preston. Second, W. Harvey.

DORKING.—First, W. Harvey. Second, D. White, Driffield.

GAME (White and Piles).—Prize, Messrs. Sales & Bentley, Crowle.

GAME (Black-breasted and other Reds).—First, E. Akroyd, Bradford.

Second, Messrs. Sales and Bentley. Commended, H. Beldon.

GAME (Duckwings, and other Greys and Blues).—First, R. Pashley, Worksop. Second, F. Wright, Sheffield. Commended, Master Cocking, Crowle.

GAME (Any breed).—Cup, C. W. Brierley, Middleton. Second and Extra Second, Messrs. Sales and Bentley.

GAME COCK (Any breed).—Cup, C. W. Brierley. Second, E. Akroyd, Extra Second, R. Pashley, Worksop. Highly Commended, J. D. Newsome, Batley; Messrs. Sales & Bentley.

POLAND (Any variety).—First and Second, H. Beldon.

HAMBURGH (Silver-spangled).—First, H. Beldon. Second, A. K. Wood, Kendall.

HAMBURGH (Golden-spangled).—First, H. Beldon. Second, A. K. Wood.

HAMBURGH (Silver-pencilled).—First, A. K. Wood. Second, H. Beldon.

HAMBURGH (Golden-pencilled).—First, H. Beldon. Second, G. Holmes, Driffield.

ANY FARMYARD CROSS.—First, H. Beldon (Black Hamburgs). Second, Hon. F. C. H. Hawke, Womersley Park (Red Caps).

GAME BANTAMS (Any breed).—Silver Cup and Second, Master G. Crossland, Wakefield. Highly Commended, J. D. Newsome, Batley.

BANTAMS (Silver or Golden-laced).—First, Messrs. S. & R. Ashton, Nottram. Second, T. C. Harrison, Hull.

BANTAMS (Black, White, or any coloured).—First and Second, J. R. Jessop, Hull. Highly Commended, Messrs. J. & A. Briggs, Leeds.

COCK (Any breed).—First, W. Harvey, Sheffield (Buff Cochins). Second, H. Beldon (Golden-spangled Poland). Highly Commended, Messrs. Burch & Boulter, Sheffield (Black Spanish). Commended, Messrs. S. and B. Ashton (Silver-spangled Hamburgs); F. Marchant, Halifax (Black Red Game Bantam).

HENS (Any breed).—First, E. Brown (Spanish). Second, F. Sales, Crowle (Redcaps). Equal Second, W. Harvey (Cochin Bantams). Highly Commended, Messrs. Burch & Boulter (Golden-spangled Hamburgs and Spanish); H. Beldon (Spanish). Commended, G. H. Roberts, Preston (Brahmas); S. Slater, Doncaster (Golden-spangled Hamburgs); J. Sledmore, Epworth (Grey Dorkings).

CHICKENS (Any pure breed).—First, W. Wilkinson, Wath (Black Red Game). Second, Messrs. Burch & Boulter (Spanish). Extra Second, C. Spencer, Attleborough, Norfolk (Buff Cochins). Highly Commended, F. Key, Beverley (Grey Dorkings).

GUINEA FOWLS.—First, C. A. Young, Driffield. Second, H. Beldon. Highly Commended, T. C. Harrison, Hull.

TERKEYS.—First, W. Harvey. Second, A. O. Worthington, Newton Park.

GESE.—First, O. A. Young. Second, Mrs. Lee, Thorne. *Gibs.*—First, Mrs. S. Hodgson, Thorne Quay. Second, W. H. Kellitt, Thorne.

DUCKS (Any breed).—First, J. R. Jessop, Hull. Second, T. C. Harrison, Hull.

DUCKS (Aylesbury).—Prize, O. A. Young.

EXTRA STOCK.—Prize, G. Rowskill, Doncaster (Peacock).

PIGEONS.

CARRIERS.—First, J. Thackray, York. Second, H. Yardley, Birmingham. Highly Commended, W. Ashforth, Sheffield; J. Smith, Sheffield.

CHOPPERS.—First, J. Thackray. Second, H. Yardley.

TUMBLERS.—First, G. Wostenholm, Sheffield. Second, H. Yardley. Highly Commended, H. Yardley; J. Thackray.

JACOBS.—First, H. Beldon. Second, H. Yardley.

NUCS.—First, E. Newbitt, Epworth. Second, G. Pickering, Driffield.

TRUMPETERS.—Prize, F. Key.

TURBITS.—First, H. Yardley. Second, H. Beldon.

FANTALS.—First, H. Yardley. Second, T. C. Newbitt. Highly Commended, F. Key.

OWLS.—First, J. W. Fielding, Rochdale. Second, G. H. Roberts, Preston. Highly Commended, W. Pepper, Sheffield; H. Yardley.

BARBS.—First, H. Beldon. Second, J. Thackray.

The Judges of Poultry were Mr. Edward Hewitt, of Sparkbrook, Birmingham, and Mr. John Douglas, of Clumber, Worksop. Mr. John Crossland, of Wakefield, awarded the Pigeon prizes.

ing," and the "WILTSHIRE RECTOR" is, doubtless, like the bees, storing up treats for your readers, amongst the gardens, fields, and woods about Hilltop Rectory. One must, therefore, be jolly, and good-tempered, and thankful, and all that kind of thing in spite of railway charges, and birds delayed and lost. But talking about Wiltshire Rectors and railway directors, brings one gradually in the direction of Salisbury.

They have had a poultry show there, and it was a good one, and they even induced the railway authorities to be liberal in conveying the birds, but I did not avail myself of the opportunity, because the instructions were complex, and my birds were few, but they gave me two prizes, one for each pen that I sent. And why did I send so few? Because it was a long time for birds to be away in hot tents and confined to their baskets or their pens. Many thought as I did; but what was the result? Why the Show ended on Friday at four o'clock, and on Saturday at one o'clock I received my birds, some fifty miles down the Great Eastern, in as good, as bright, and sprightly a condition as when they left me. This ought to have been my text, because it was with this before me that I began to write, and it is this that I want to make known, for it shows a promptitude and care that the managers of other shows would do well to imitate.

Well, they have had not only a poultry show but an agricultural show of no ordinary merit, where, because they could not muster fat beeves in these perilous times, they added the fine arts to field labour, and never was seen such a collection of machinery and agricultural implements. But, the fine arts at an agricultural show! And why not? It may have astonished many of the yokels with things never seen before. All the better. "A little learning is a dangerous thing," and in these days, as men will get all they can for themselves, the more they see and know the better. We have mind among the spindles, and why not among the spades? I want to see it there. "How can he get wisdom that holdeth the plough, and that glorieth in the goad that driveth oxen, and is occupied in their labours, and whose talk is of bullocks?" has been asked of old; but there cannot be harm in trying to impart knowledge, which if not misused is godly to him that "giveth his mind to make furrows, and is diligent to give the kine fodder." Furrows will not be less straight, nor cattle worse tended from a knowledge of their properties and uses. But farm labourers will misuse knowledge, their masters tell me. I grant it; but how do they use ignorance? My agricultural friends are always more ready to object than to answer, and this question seems to prevent a reply altogether.—EGOMET.

PROFIT FROM DUCKS.

I was particularly struck with a communication signed "B. A.," and headed "Profit from Ducks," in last week's Journal. The writer states that he can keep fourteen Ducks for eight weeks, at a cost of 12s. 1½d. He says the only addition to the food mentioned was the refuse from the house and garden. Surely the said refuse must have been in sufficient quantity to constitute at least half their food, or else there must be a grand mistake in the amount set down for food consumed. Does not he also value the Ducks rather above the market price? as in this part Ducks hatched on March 21st, three weeks earlier than his, are only now worth 2s. 6d. or 3s. at the most.

I will now give my experience in Duck-breeding; and I must say that I found their appetites so voracious, that I am sure 12s. 1½d. would not have kept fourteen of mine more than half the time "B. A." mentions. Mine, like "B. A.'s," were common farmyard Ducks, and were likewise kept shut up. The number of the brood was eight, and they were hatched on the 21st of March. The cost of their keep was as follows:—

	£	s.	d.
Sitting of eggs	0	1	0
Food for hen	0	0	6
Loss of time for ditto	0	0	6
Half bushel of barley meal	0	2	3
3 pecks of middlings	0	1	6
7 lbs. rice	0	0	7
Potatoes	0	0	6
	£0	6	10

At five weeks and three days old these eight Ducks were sold for 8s., a fair market price, as other Ducks of the same size were selling in this part; and if my Ducks had not been hatched till April 11th, as "B. A.'s" were, they would not have been worth, at five weeks old, more than 10d. each.

LAY SERMONETTE ON THE BATH AND WEST OF ENGLAND SHOW.

THE weather does not come on kindly, but flowers are out, and birds are singing, and chickens are growing, "all a-grow-

If "B. A.'s" accounts are correct, which my experience makes me think impossible, would he have any objection to give an outline of his management, feeding, and so on—how often the Ducks were fed—the size of the place they were kept in—and how long the hen went with them? If he would do so I have no doubt many of your readers would feel obliged, and none more so than myself; for any one acquainted with a Duck's appetite must have been struck with the small amount put down for food, and the necessarily large balance on the right side in "B. A.'s" communication.—J. R. BERTON.

QUEEN REMOVED WITH A SUPER.

In removing a super from a stock hive of bees, does it ever happen that the queen is in the super and is removed in the same? How may I distinguish the queen from the workers and drones?

On June 15th, in consequence of my bees having swarmed the day before, I wished to remove the small straw super (Payne's, 8 inches diameter, 7 inches deep), from the stock hive in order to place it on the swarm, intending to leave the box placed between the straw super and the stock hive a few days back, on the stock, as the bees were busy building comb in it. My stock is a common straw hive with a hole in the top, the bees a last year's swarm. I carefully lifted off the super, which seemed very heavy, and placed it on a board with a piece of stick an inch thick under one side, but for a quarter of an hour hardly a bee left. I then turned it up, and found it full of bees. After I set it down again a number of bees, I should think about half, left during the next half-hour; after which I could not induce any more to leave. Again I turned it up, and with a feather tried to brush them out; but they ran down between the combs, and would do anything but leave. After about two hours of this sort of work I thought there must be some reason, and, being a novice, determined to put it back on the stock and apply to you for advice. All this time I had to keep carrying the super about the garden to prevent other bees from entering. The stock hive all this time was as quiet as usual. Can you account for the bees refusing to leave? Do you think the queen was in the super, considering the fact that half the bees or more went home? The inside of the super contained five combs, but they were not joined to the sides anywhere, but only to the top. There was about half an inch between the end of each comb and the straw, so that the bees could pass all round. Is this usual? The two outside combs only seemed to contain honey, and these I took out before returning it to the stock hive. In the three middle combs the cells were much larger; some of them empty, the others covered not with a flat cover, but with a dome-shaped one; some with bees partly protruding. Is this brood? Are supers always so? Can it be prevented?—A NOVICE.

[The queen is sometimes removed with a super, and in this case the fact is generally made evident by the confusion which results in the stock hive as soon as the bees discover their loss. She may be readily distinguished from all others by her being much longer than a worker and less bulky than a drone. A queen might not have been hatched out the day after the issue of a first swarm, or, if hatched, would not be at all likely to be in the super, which was probably not completed, or the combs would have been attached to its sides. The large cells with dome-shaped covers contained drone brood, which is not unusual, but which made the bees reluctant to leave. It need not have been preserved. It is said that the queen may be confined to the stock hive, and breeding in supers entirely prevented by the communication being restricted to narrow slits not exceeding one-fifth of an inch in width. As we have had no experience of this plan, we should be glad if any of our readers who have tried it would report the results.]

REMOVING BEES FROM A WALL.

Which would be the best method of removing and securing in a hive a colony of bees which took possession of a hollow in a garden wall in 1864, and have lived there ever since? The entrance to their abode is 6 feet from the ground, just over a door leading from a garden to an orchard, and so rather an inconvenient place for them to be allowed to continue to hold. The wall is 12 feet high, and very old, so that the bees have had plenty of room to spread between the stones. I was in hopes they would have swarmed, but to the best of my knowledge

they have not done so during the three seasons they have been there, so you may imagine that they are very strong, as they have had it all their own way, no honey having been got from them. If in the evening I opened a hole in the wall, so as to lay bare the bees and combs, and then removed some of the brood combs with the bees on them and fastened them in a flat-topped straw hive, would it be possible to get the remainder of the bees into the hive?—Co. DUBLIN SUBSCRIBER.

[If you can open a hole in the wall sufficient to lay bare the combs, an experienced apiarian would have little difficulty in cutting them out and fitting them into a frame hive, keeping at the same time a bright look-out for and securing the queen. So many unforeseen contingencies are likely to arise, which must be met on the instant, and to combat which the operator must rely on his own resources, that it is difficult, if not altogether impossible, to give precise directions. The middle of a fine day is, however, the best time for performing the operation, which may be much facilitated by the use of just sufficient smoke to intimidate without actually stupefying the bees.]

WEIGHT OF SWARMS.

I HAVE had a second swarm only four days after the first, it weighed 2 lbs. (the first weighed 2½ lbs.). The time between the two swarms seems so short, that I am afraid that what I consider the first swarm was in reality the second, and that the first went away unperceived. Please give me your opinion. I found mine on the following extract from Payne's book:—"The period which usually transpires between the first and second swarms is from nine to thirteen days, between the second and third the time is much shorter."—J. R. BERTON.

[We fear your first swarm must have escaped, and that those which have been secured are really the second and third. The small weight of the supposed first swarm, taken in conjunction with the fact of one issuing only four days after the other, seems to us tolerably conclusive on the point. "Books" should be substituted for "hives," in our answer to you at page 448.]

CARE NEEDED IN DRIVING BEES.

On the 10th of June my bees, in a common straw hive, were hanging out very thickly, and appeared about to swarm. I took an empty clean hive, and drove them in the open way spoken of in your Journal about two years ago. It was my first experiment with bees, and I found no difficulty in getting them into the new hive. When I had driven as many as I considered sufficient, probably about two-thirds of the stock, I placed the new hive on the floor-board of the old hive in the place which it occupied before, and I set the stock hive on a new floor-board at a distance of about 8 yards. The driven bees appear to be doing very well, and are as busy as possible, but I am not quite satisfied with the appearance of the stock hive. There are very few bees about it, and they do not seem to be at work. They alight on all parts of the floor-board round the hive, and on the hive itself, but not many seem to be going in and out. I observe, also, a good many dead bees on the ground beneath the stock hive. I am in doubt what to do, whether or not it would be advisable to place the old hive in its old place again or not.

I must tell you that the stock hive, when I turned it up, seemed quite full of comb, and was very heavy. I did not obtain any honey from it last year, as the bees refused to build in the super, nor did I have a swarm. The reason was, I imagine, because the hive had had a journey last May, and a good many of the bees had died. I had a good superful of honey the year before.

I should be greatly obliged by your advice on two points.

1. As to whether I can do anything to improve the condition of the stock hive?

2. What steps I should take to procure honey this year? Should I super the driven bees? and if so, when? or should I super the old stock? I should be much obliged if you would answer these questions in your Journal, and give me any other hints on the subject. I only have these two hives.—AN AMATEUR, Surrey.

[You have by your manipulation formed a strong swarm, but have in all probability inflicted fatal injury on the stock hive, which when removed to its new position was doubtless

deserted by every bee that could find its way to the old spot. The immature bees which remained behind are likely to fail in raising a queen, whilst they cannot cover or hatch out nearly all the brood, the bulk of which must, therefore, become chilled and abortive. The best and perhaps almost the only remedy is to shake a swarm (a second swarm will do), into the hive, and this should be done with as little delay as possible. Returning the stock hive to its old stand would at this time seriously injure the swarm, and would probably fail in restoring the parent stock. When you had driven two-thirds of the bees the stock hive should have been restored to its place, and the swarm conveyed immediately to a distance of not less than a mile and a half, whence in five or six weeks' time it might be re-transferred to your own apiary. When this temporary removal to a distance cannot be effected, artificial swarming with common hives had better not be attempted unless two stocks are employed, as advised at page 428. You may super the driven bees forthwith, but it would, of course, be useless to put a super on the old stock.]

MANAGEMENT OF SUPERS.

SEEMING in your Journal that the bees remaining in a stock hive will not generally fill a super after throwing out a swarm, I am induced to ask your advice as to the following case:—

Hive No. 1 had a box super placed upon it in April, and a glass super upon the box. The glass was filled with honey, and the box with comb, when a swarm left the hive and was lost.

Hive No. 2 had a straw super placed upon it in April, and now seems crowded.

Could I remove the box from No. 1, and place it between the super and stock hive of No. 2? or should I place the super of No. 2 on the top of the box on No. 1, instead of the glass, placing a fresh super on No. 2 to give more room? and must I in either case remove the bees from the different supers before making the alteration?—T. E. BAGGE.

[We should remove the box from No. 1, and place it between the super and stock hive of No. 2. All the bees should be expelled before the box is placed in its new position.]

SPARROWS EATING LIVE BEES.

REFERRING you to my last communication under this head (page 411), I certainly thought that I should not again have had to complain of my quondam friends the sparrows annoying my bees, but I was mistaken. On Sunday last (June 17th), I again saw the sparrows doing exactly the same thing under my hives, notwithstanding that I had provided myself with what is called a "bird-scarer," in the shape of a zinc cat suspended to an iron rod, and swinging with the wind. There were plenty of dead bees lying about, as I had only two days before taken off a box of honey weighing 28 lbs., and in doing so had to destroy about a hundred bees; but live game alone would satisfy these harpies, and they were deliberately again jumping up at the laden bees as they came home, and after considerable pounding of the bodies carrying them off to their nests. Again the mandate went forth, and the next morning my man destroyed no less than than thirty-eight young sparrows and twenty eggs in different nests round my premises!

I should like to know if any other apiarian has been troubled this year in a similar manner? and I say *this* year, because, as I never before noticed such a foray, I cannot help thinking it must be something peculiar to the season. One nest alone, just over my dining-room window, was spared, as the inmates were a worthy couple not guilty of apicide, I having carefully watched them feeding their young with moths and caterpillars.—A BLACKHEATHAN.

BEE SUPERSTITION.

A CORRESPONDENT of one of the New Zealand papers gives the following story as being told by a Buckinghamshire keeper. He relates as follows:—

"Superstitions Indulged in with Regard to Bees.—These are many and curious. I remember when I lived in Buckinghamshire, and kept bees there, noting some strange beliefs respecting them. One evening I was stopping at the house of a farmer, whose mother had died that morning. His wife went out in the evening, and tapped at every hive, repeating before

each, 'Bees, bees, your mistress is dead;' and she gravely assured me that if she had not done so the bees would inevitably have forsaken the spot. One day a difficulty occurred between myself and my gardener in respect to the bees. He wanted to have his way in reference to some arrangements for them, and I had rather a desire to have mine, and we had a little difference on the subject which I cut short by ordering my wishes to be promptly attended to; whereupon the fellow went half-snivolling, half-aulkily away, saying, 'The bees will all die, they'll all die, because there's been words about them.' Now, as I did not wish his words to come true, I took the liberty of smoking my last weed at night up and down the garden walk by which the bees stood, and by a curious coincidence, the gardener came prowling round there, and was rather surprised at finding me out at that time. The same thing happened the next night; and finding that I did not mean to permit an epidemic amongst the bees if I could avoid it, he did not come again, and my bees did not die after all. If I had not suspected that the rascal would strive to avenge me out, no doubt my bees would have perished, and I should have been requested to believe that it was in consequence of there having been words about them; which, after all, would no doubt, in one sense, have been perfectly true."

LIGURIANS versus BLACK BEES.—One of my correspondents writes to me as follows:—"A stock of pure Ligurians in the possession of a clergyman in Essex sent out two very large swarms in May, and a third on the 4th of June. If the season continue favourable this stock will probably increase to seven in one year! such is the enormous fecundity of pure Ligurian queens."—W. J. P., Dover.

CRYSTAL PALACE.—A list of the newly-added specialities to be seen daily would be too long to insert here. A young hippopotamus; a new aviary of owls, eagles, hawks, and other British birds; an exhibition of bees; and a newly-patented incubator for hatching and nursing poultry and game, deserve remark as forming matters of interest and instruction to young persons in what may be regarded as an addition to the thousand and one ordinary—because happily usual—attractions of the Palace.

OUR LETTER BOX.

GAME FOWL (Black Game).—We cannot give you the information you seek, for we have only seen the first Number.

HANTS AND BERKS POULTRY SHOW.—We are informed that the first prize for Spanish was awarded to Mr. James Jenner, of Lewes, Sussex, and not to Mr. A. Heath, of Calce.

PIGEON DISEASE (A. L. Z.).—The substance taken from your dead hen Trumpeter, is evidently an indurated yolk, which has been retained owing to some injury or disease of the egg-organs.—B. P. BRENT.

PEA AND GUINEA FOWLS' TIME OF INCUBATING.—HEAT OF INCUBATOR (W. B.).—Pea Fowls' eggs require twenty-eight days for hatching, and the eggs of Guinea Fowls (Gallinas, as you call them) twenty-eight to thirty days. The temperature of the incubator should be 104°.

BEES IN A WOODBURY HIVE (W. D. A.).—1, If a swarm fills a Woodbury hive the first season, it is as much as can be expected of it. 2, The union of two swarms in the manner proposed will generally succeed, although a fight is not absolutely impossible. 3, We do not see that you can do anything more to prevent the issue of a swarm.

REARING YOUNG BULLFINCHES (Cecil L.).—A fortnight is a good age to take the young bullfinches from the nest in order to rear them by hand. They are best well feathered, always provided they are not too old to open their mouths. Place them nest and all in a covered basket. The food may be made as follows:—Scald and well wash some rape seed, so as to soften it and remove its pungency. Soak some stale bread, and beat the two into a stiff paste. Feed every two hours, and give as much each time as they will open their mouths for. Australian crows may be fed like magpies, they are almost omnivorous.—B. P. B.

GALVANISED IRON WATER CISTERNS.—Messrs. Motley & Green have sent us copies of several testimonials in favour of these, and they state that they have had long experience of their durability and efficiency, and have never had a complaint about them.

POULTRY MARKET.—JUNE 25.

Our supply gradually increases, and the tendency is rather to a reduction of prices, except in large fowls.

	s. d.						
Large Fowls.....	4	0	4	6	0	0	0
Smaller do.....	3	0	5	6	0	0	0
Fowls.....	0	0	0	0	0	0	0
Chickens.....	2	0	2	3	1	4	1
Green Geese.....	5	6	6	0	0	8	0
Duckings.....	2	0	3	0	0	8	0
Guinea Fowls.....	0	0	0	0	0	0	0
Partridges.....	0	0	0	0	0	0	0
Hares.....	0	0	0	0	0	0	0
Rabbits.....	1	4	1	9			
Wild do.....	0	8	0	5			
Pigeons.....	0	8	0	9			



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