









THE
GARDENER'S MAGAZINE,



CONDUCTED

By J. C. LOUDON, F.L.S. H.S. &c.

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PREFACE.

IN this Third Volume of the Gardener's Magazine, the reader will find some improvements on the plan of the former Volumes. These are, the accentuation of botanic names; the indication of generic names as, commemorative, classical, aboriginal, or composed; and, when specific names are Englished, the literal meaning given. The details and the advantages of these improvements are explained in Vol. II. p. 447.

Taking a general view of the improvements in gardening which are recorded in this Volume, the leading feature, and one of very considerable interest in the exotic department, is the mode of heating hot-houses by hot water. Though the invention was made above half a century ago in France, and applied there for artificial incubation, as well as to the hot-houses in the Jardin des Plantes, it does not appear to have been introduced into England till the year 1815, when the house No. 1. in Russel Place, London, was heated in this manner by the Comte Chabannes, and afterwards the hot-houses at Sundridge Park by the same individual, in 1816 and 1817. The use of steam withdrew for a time the attention of engineers from the subject of hot water; but that element has again been resorted to, apparently without any knowledge of what had been already done by others, by Mr. Whale and Mr. Atkinson. Neither of these gentlemen, it appears, was aware of M. Bonne-main's invention in Paris, in 1777, or the Comte Chabanne's operations in London and at Sundridge Park. Mr. Tredgold (p. 427.) has claimed for Mr. Atkinson the merit of having first successfully applied the hot water system to hot-houses in England; and, unquestionably, Mr. Atkinson's apparatus of 1822, is more simple than that of the Comte Chabannes at Sundridge Park of 1816, though not more effectual. The details of which the above is the summary, will be found in pages 186. 254. 365. 368. and 423—432.; and further information on the subject, received even since this Preface was prepared for the press, is unavoidably reserved for our succeeding Volume.

Some most desirable acquisitions to Floriculture are described in the analysis of botanical works in our Catalogue raisonnée; and we refer to pages 342. 385., and Vol. II. p. 460., for some Dutch and German practices, which, if adopted in this country, would, at an easy rate, increase the enjoyments of the wealthy who possess gardens; prove profitable to the tradesman gardener; and advantageous to the public consumer of garden vegetables.

J. C. L.

London, Bayswater, Feb. 1828.

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THE
GARDENER'S MAGAZINE,
SEPTEMBER, 1827.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *On the Apple Tree, as trained against a Wall.* By
Mr. CHARLES HARRISON, F.H.S.

THE kind of soil which I consider most suitable for the apple tree is a strong loam upon a dry bottom; for, if the bottom be wet, the trees are generally diseased and affected with canker.

The border for the trees is constructed in the following manner: The depth is three feet at the wall, and two feet six inches at the front, also twelve or fourteen broad. The surface of the under stratum is so formed, as to have an inclination from the wall to the front of the border of twelve inches. After this is done, a drain is made to run close to the wall, and in a direction with it; also another to run parallel with it, at the front of the border. These drains are open stone drains, and are so made that all superabundant water can be carried entirely away from the border. The drains are so constructed that the tops of them are about three inches higher than the surface of the following composed substratum. After the drains are made, there is laid all over the surface of the under stratum, three inches thick of moderate-sized gravel (if gravel cannot be had, stones or brick bats broken to a small size may be used for the purpose); upon this spread about one inch thick of fine gravel (or instead of it strong road drift); the whole is then well rolled or beaten firm together; after this is done, about three inches more of gravel or small stones is laid, which is also beaten or rolled to an even surface, but not so as to bind them very close together. This method of

forming the substratum of the border ought always to be attended to, when the soil of the border is a very strong loam, unless the bottom is rocky or shaly, when it may be dispensed with.

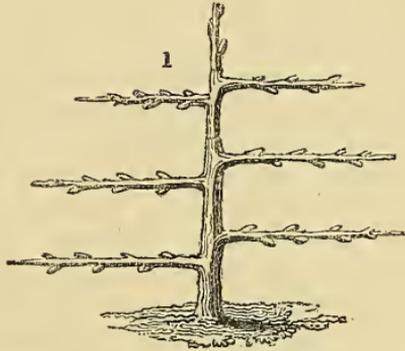
Trees.—I always plant a maiden tree and one that has only one upright stem. In the following instructions I have stated each year's method of pruning, for such a number of years after the planting of the tree, as appears to be necessary in order to convey my practice fully. The commencement of each year I date from the beginning of winter pruning, and which is always performed as early in the winter as possible, with the exception of the first year, as will be perceived. I have only described the practice to that part of each branch produced the first year after the planting of the tree, all other spurs, &c., in the other parts of the tree, requiring the same treatment when at a similar age and condition.

First Year.—Winter Pruning. The tree is headed down just before it begins to push; in doing which, the foot is placed upon the soil, and close to the bole, in order to prevent it from being drawn up by the force which is used in the operation. The cut is made in a sloping direction towards the wall, and about half an inch above the bud which is selected for the leading shoot. The tree is cut down so that seven buds remain. The horizontal mode of training I consider preferable to all others for the apple tree.

Summer Pruning. If all the buds push (which will generally be the case), they are all permitted to grow until they have attained three inches in length, when two of them are rubbed off; those rubbed off are the third and fourth buds, counting upwards from the origin of the tree. The uppermost shoot is trained straight up the wall for a leading stem, and the remaining four horizontally along the wall, two on each side the stem of the tree. These shoots are trained nine inches apart, for when they are much nearer than this they exclude the sun and air from operating upon the buds and wood, in such a manner as is required to keep the tree productive. When the leading upright shoot has attained about fifteen inches in length, the end is pinched off so as to leave it about eleven inches long. This causes shoots to be produced from the upper part of the leader thus stopped, three of which are trained in, the uppermost straight up the wall, and the others one on each side the stem of the leader. This stopping of the leading shoot is not performed later than the end of June or early in July; for, when it is done much later,

those shoots which push afterwards in that season do not arrive at a sufficient degree of maturity to withstand the winter, and are frequently destroyed by frost. When it happens that a tree has not done well in the early part of the season, and the upright shoot is not of a suitable length or vigour at the proper period for stopping it, it is not meddled with afterwards until the winter pruning of the tree. When the tree grows either too weak or too vigorous, I have recourse to lowering the branches or raising them as required.

Second Year.—Winter Pruning. At the middle or end of November the tree is pruned. The upright leading shoot is now shortened down to ten inches from the place where it was last stopped. The tree will now be represented by the accompanying sketch. (*fig. 1.*) The side shoots (but which will hereafter be termed branches) are not shortened, but left their full length. If, during summer, the end of a branch should have been accidentally broken or damaged, the general consequence resulting from it is the production of several shoots or fruit buds. If shoots (which is very generally the case) were produced, and were shortened

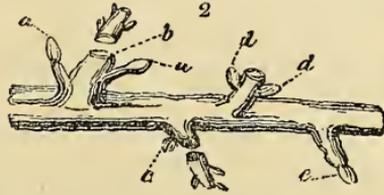


during summer agreeably to directions for similar shoots in the treatment of the tree for the second year (see *Summer Pruning*), they are now cut down to about half an inch in length. (*fig. 2.*) If, instead of shoots, natural fruit buds should have been produced (these are short and stiff, from half an inch to an inch in length, and red at the ends), such are allowed to remain untouched, as it is on those that fruit are produced. The advantage of shortening back the upright shoot as much as is directed to be done is, that by it branches are certain to be produced at those places desired, so that no vacancy occurs. The leading upright shoot thus attended to will reach the top of a wall twelve feet high in seven years, which is as soon as the tree will be able to do, so as to support every part sufficiently. The tree is always loosened from the wall every winter pruning; the wall is swept and washed, also recoloured with paint or coal tar if required; the tree is also anointed with composition. I always lay some fresh mulch to the roots of the trees at this time.

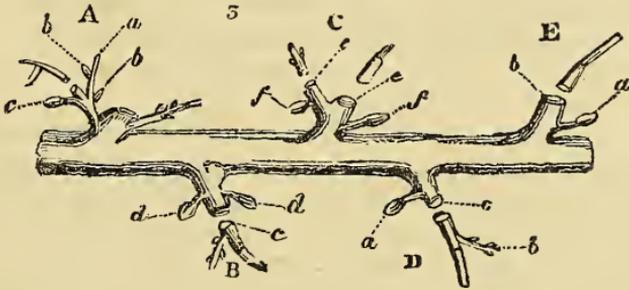
Summer Pruning. When the buds upon that part of the leading stem which was produced last have pushed, they are all rubbed off to the three uppermost. The topmost is trained straight up the wall, for a lead to the main stem; and the two others, one on each side. The instructions given for stopping the leading shoot in summer, also shortening it back in winter pruning, &c., are attended to until the tree arrives at a few inches from the top of the wall. The side branches are allowed to grow without being shortened back at any time, until they have extended as far as can be permitted, when they are pruned in every winter, by cutting back each leading shoot to two buds from where it pushed the previous spring. Any shoots arising from the fore part of the main stem are taken clean away. The buds upon the wood made last year will this summer generally make fruitful ones. If, on the contrary (as is sometimes the case), shoots are produced instead of fruitful buds, they are allowed to grow ten or twelve inches long, until the wood attains a little hardness towards the bottom of it, when they are cut down to about two inches in length; and at the bottom part of what remains, one or two fruit buds are formed, so as to be productive in most cases the next year, but in others not until the second year. Although such a shoot was shortened as directed, yet it will generally push a shoot or more the same season from the top part of it. After such have grown a suitable length (as before described), they are cut back to about two inches from where they pushed. If more than one shoot were produced after the first shortening, and a bud or two is well swelled at the origin of the shoot (as before described), all the shoots are left, and shortened as directed; but, if no such bud is produced, all the shoots are cut clean away excepting one, which is treated in shortening as before directed. The latter practice will generally be found necessary, and also be more advantageous, as a greater portion of sun^r and air is admitted to the buds, which will be considerably strengthened and forwarded to a mature state. If after such treatment fruit buds are not produced from the origin of the shoot, I nail the shoot to the wall, parallel with the branch, which is uniformly successful in producing them.

Third Year.—Winter Pruning. Such of the buds as produced wood shoots the last year, and were shortened during summer as described, are now shortened more. It frequently happens that a fruitful bud, or in some instances two, will have been formed at the lower part of the shoot (*fig. 2. a a*); such shoots are now cut off about quarter of an inch above

the uppermost of the fruitful buds (*b*): but (as it is sometimes the case), if there have not been fruitful buds produced, there will be growing buds, and then the shoots are cut down so as to leave one bud. (*fig. 2. c.*) On some occasions the growing buds and fruitful buds will appear but very indistinctly, and in an embryo state; when this is the case the shoots are cut down so as to leave two of those embryo buds (*d d*). There are generally some natural fruit buds which did not push to shoots, all such are left entire (*e*). They are of a reddish colour, and are easily distinguished from growing buds, which are considerably less and all of a dark colour.



Summer Pruning. This summer the fruitful buds are productive. When the fruit has swelled a little, a shoot generally proceeds from the stem of the spur (which it may now be called), just underneath the fruit: such are allowed to grow eight or ten inches long, and are then shortened back to two inches, or so as to leave three eyes upon each. (*fig. 3. A, a.*) By shortening the shoot, strength is thrown



into the fruit, and, during summer, two or more fruit buds are generally produced at the bottom of the shoot thus cut down (*fig. 3. b b*), or, otherwise, from the lower part of the spur. (*fig. 3. c.*) It sometimes occurs that, when the tree is very vigorous, some of the buds (*fig. 3. b b*) will push into shoots, or occasionally into bloom, during the latter end of summer. If shoots, they are allowed to grow, and are then shortened, as described for similar shoots; but, when bloom is produced, it is immediately cut off close under the blossom.

The shoots (*fig. 2. c*) produced after the third year's winter pruning are allowed to grow, and are then shortened, as already directed for similar shoots. (See *Second Year's Summer Pruning.*) The shoots which were pruned as directed last

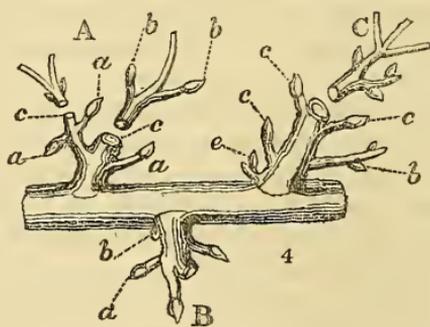
winter, and had embryo buds (*fig. 2. dd*) during this summer, generally have a fruit bud, and in some cases two, formed at their bases. The treatment of all shoots produced upon any of the spurs in future, is agreeably to the previous instructions given.

I always thin the fruit, and, where two are situated together, I take one away; this is done when I perceive them begin to flesh.

Fourth Year. — Winter Pruning. The spurs (*fig. 3. A B*) which were productive last summer, and upon which a shoot was made and shortened (*fig. 3. a*, spur A), are now regulated in the following manner: — If there be two good fruit buds formed upon the stem of the spur (*fig. 3. dd*, spur B), all that part of it above such buds is cut away, about a quarter of an inch above the uppermost (as at *c*): but, if there is only one good fruit bud upon the stem, and one upon the shoot which was cut in during summer (as at *a*, spur A), then it is pruned off (as at spur C, *ee*), so that two buds only remain (as *ff*). When there is only one fruit bud upon the stem of the spur (as spur D, *a*), and no fruitful buds at the shoot (*b*), then all the spur is pruned away (as at *c*). Sometimes those spurs that bear fruit will not have a shoot produced, but, instead of it, a fruitful bud (as spur E, *a*); it is then pruned off just above such bud (as at *b*).

Summer Pruning. All shoots are pruned, as already directed in the second and third years.

Fifth Year. — Winter Pruning. All the spurs are allowed to retain three fruitful buds each; but, as there are generally more than is required to keep, some of them are thinned away, retaining the best buds. The ripest buds are most plump and red at the ends. If such buds are situated near to the origin of the spur (as *fig. 4. spur A, a a a*), they are retained in preference to similar fruitful buds that are nigher the end of the spur (as *bb*); the spur is then cut off (as at *cc*). When there are no fruitful buds near to the origin of the spur, those are left that are further off; but I always take care to preserve the bud situated nearest to the branch which supports the spur,

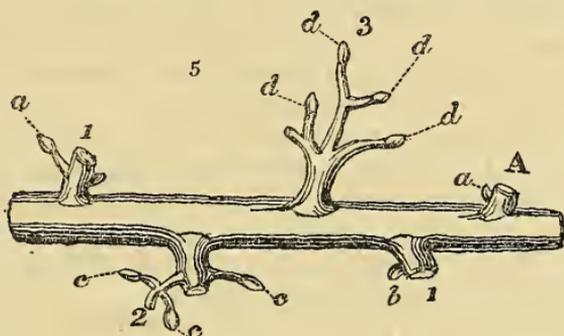


whether it be a growing or a fruitful one (as spur B, in which α is a fruitful bud, and b a growing one).

If there be a suitable supply of buds upon the old part of the spur (as c, c, c), they are retained in preference to those buds formed at the bases of shoots which have been pruned during summer (as e, b): for, when there is a proper supply on the old part of the spur, all such shoots are cut clean away, with the exception of one that is situated near to the origin of the spur (as e), when that bud and the two next are only left.

Summer Pruning is performed as before directed.

Sixth Year.—Winter Pruning. In order to convey a correct method of my treatment of the spurs in future, it will be necessary to point them out by numbers, as 1, 2, and 3. The enumeration will proceed from the bole of the tree, along the branch. After three spurs are thus numbered, I begin again, and proceed with No. 1. &c. (agreeably to *fig. 5.*).

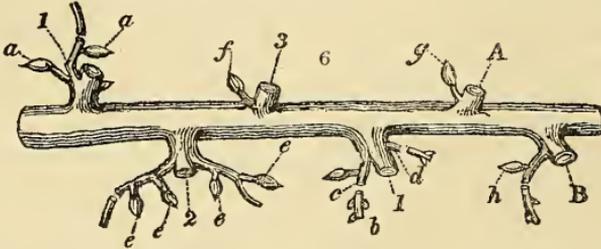


Every spur No. 1. is now cut down to the lowest bud there is upon it, whether it be a fruitful bud (as a), or growing bud (as b). Every spur No. 2. to have three fruit buds (as c, c, c), and every spur No. 3. to have four fruit buds (as d, d, d, d). When a spur No. 1. is destitute of either a fruitful or a growing bud towards the lower part of it, such a spur is cut down so low as only to leave about one half inch remaining (as *fig. 5. A*). There is generally an eye or embryo of a bud situated near to the origin of the spur (as a , spur A); from this a shoot or a fruitful bud is produced the ensuing summer, and thus a supply is obtained for that cut away.

Summer Pruning. All shoots are shortened during summer, as before directed. Particular care is paid to the spurs No. 1., as a shoot or a fruitful bud is generally produced nearer to the base of the spur than to the bud that was left at winter pruning, and most commonly at the opposite side of the spur to it. Either a shoot or a fruitful bud generally

pushes from those spurs that were cut entirely down (as spur A, *fig. 5.*); the shoots are cut down, as directed for others.

Seventh Year. — Winter Pruning. The spurs No. 1. now generally have two fruit buds each; they are allowed to retain them (as *fig. 6. a a*). If, instead of a fruitful bud, a shoot pushed

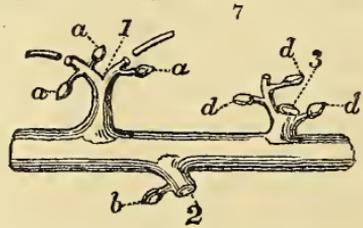


(as *b*), and a fruitful bud was formed at the lower part of it, the shoot is then cut off just above it (as at *c*); but, if there is not a fruitful bud formed, it is cut down, so as to leave it half an inch long (as at *d*). The spurs No. 2. have four fruit buds left upon each (as *eeee*); the spurs No. 3. are now cut down, so that only one fruitful bud remains (as *f*).

If a fruit bud has been produced from the spur cut entirely away (as spur A, *fig 5.*), it is left entire (as *fig. 6. g*); but, if a shoot, instead of a fruitful bud, it is cut off just above the lowest bud, whether a fruitful or a growing bud (as at *h*, spur B). This treatment to such spurs cut entirely down, is always pursued to similar ones in future.

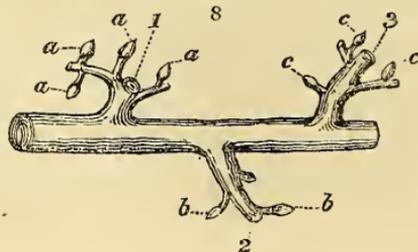
Summer Pruning. This is attended to agreeably to the foregoing directions.

Eighth Year. — Winter Pruning. The spurs No. 1. are allowed to retain three fruit buds each (as *fig. 7. a a a*), and the spurs No. 2. are now cut down (as *b*); the spurs No. 3. are regulated as was done to spurs No. 1. and 2. (See *Sixth and Seventh Year's Summer Pruning.*)



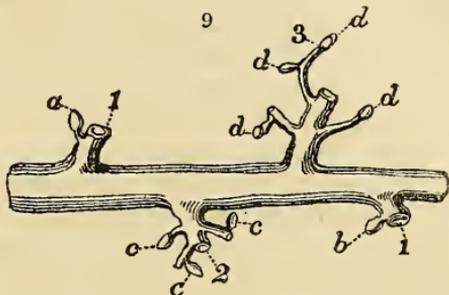
Summer Pruning. This is performed as before directed.

Ninth Year. — Winter Pruning. The spurs No. 1. are allowed to have four fruit buds each (as *fig. 8. a a a a*); the spurs No. 2. to have two fruitful buds (as *b b*), and the spurs No. 3. to have three (as *c c c*).



Summer Pruning. Performed as before.

Tenth Year.—*Winter Pruning.* The spurs No. 1. are now cut down again (as *fig. 9. a*, a fruitful bud, and *b*, a growing bud). The spurs No. 2. are pruned to three fruit buds (as *ccc*), and the spurs No. 3. to four fruit buds (as *ddd*).



It will be observed that the spurs No. 1. have now been cut down twice; the first time in the sixth year, and the second in the tenth. Thus, those

spurs cut down to a fruitful bud (as *fig. 5. a*) have borne fruit four years; and those spurs cut entirely down, or to a growing bud (as *a, b, fig. 5.*), would have only borne fruit three years. In these two cases, I always leave the spurs with three fruit buds each this winter, and cut them down the following winter, unless they have grown very vigorous and straggling.

The system already detailed, of cutting down and renewing the spurs, is practised with all others as here directed. Thus, the next year, the spurs No. 3. are cut down (as in *fig. 6. f*), and the second year from this time, the spurs No. 2. (as *fig. 7. b*), and in the fourth year from the present time, the spurs No. 1. cut down (as *fig. 5. a*, and *fig. 9. a*) require to be cut down again.

Conclusion.—To some the above directions may appear tedious and intricate; but it became necessary to enter into minute details, in order to illustrate the principle of this system of pruning, the object of which is to obtain spurs always at a proper distance from each other, so that a suitable portion of sun and air may be admitted to them, and so that the spurs may always be kept supplied with young healthy wood and fruitful buds. This renewal of spurs may be practised for a great many times, and thus those long injurious straggling spurs which are so generally shown, may be avoided.

ART. II. *On the Preservation of Apples.* By MR. DAVID GIBB, Gardener to the Dowager Marchioness of Londonderry, North Cray Place, Kent.

Sir,

I HAVE seen some communications in your excellent Magazine respecting the preserving of apples, but, as neither of

them appears to coincide entirely with my own experience, a few additional observations may not be thought unworthy of insertion.

My plan, then, is this:—The fruit should be gathered a little before it is quite ripe. In conveying it to the fruit-room shallow baskets should be used, in which the apples are to be placed singly, and handled as carefully as if they were eggs. On reaching the fruit-room the apples are to be taken singly out of the baskets, and placed upon shelves a very little apart from each other; but care should be taken that the room is previously well aired, and the shelves perfectly dry. In winter, if the weather is clear and frosty, the windows or ventilators should be kept open several hours each day; but when the weather is damp they are to be kept entirely shut, and no fire should ever be used in the fruit-room, as it always causes a damp to arise, which does infinite injury to the fruit. I have found by experience that frost does not materially affect apples, for I have had apples completely frozen that kept equally well with the rest; but then no artificial means must be used to thaw the frost. After the 1st of March the fruit-room must be close shut up, for I have experienced that the admission of much air after that period causes the fruit to shrivel up and lose their colour; and they should be handled as little as possible after the month of May, nor should they ever be wiped until they are about to be used for the table, for they soon become unsound after being so treated. Apples will be found to keep better and much longer by this simple way, than by the usual practice of covering with hay, straw, moss, or any thing else whatever; for fruit crowded together or covered up with any material will in a short time become heated, and deprived not only of its gloss and colour, but also of its flavour. In the way recommended above I have kept all the codlins and softer kinds of baking apples good to the end of June, and the pippins, as well as various sorts of dessert apples, to the end of October, with their colour as fresh as when they were first gathered, and their flavour not in the least deteriorated. I have found, by repeated experiments, that apples covered up any time are apt to contract a flavour of whatever materials they have been covered with. If laid, for example, in brown paper they will taste of tar. I have tried apples by wrapping them up in white paper, and, although they keep nearly as long in this way, they are always apt to shrivel up, which renders them unsightly. Apples, when pitted like potatoes, will retain their colour for a long time; but this method deteriorates the flavour more than any other,

as they become quite insipid after being some months under ground. I have experienced also that the fruit of full grown trees preserve better, or keep rather longer, than those of young trees.

I remain, Sir, &c.

DAVID GIBB.

Foot's Cray, January, 1827.

The keeping fruits, seeds, and roots in horticulture is open to as much improvement from chemistry as the management of soils. (Vol. II. p. 405.) We invite chemists who have gardens, and especially medical men in the country, to direct their attention to the subject, and we wish all gardeners would devote some of their leisure hours to the study of chemistry; a sufficient knowledge of it for their purpose may be obtained from *Fife's Practical Chemistry* (8vo. 7s.), and they will find this knowledge a great help towards accounting for various results which take place in gardens. In the meantime we rely on our medical readers and correspondents. It is highly gratifying to us to see the names of so many of this profession among our list of authors; our only farther wish is, that we may be enabled to increase a taste for horticulture among country clergymen, and to induce them to make experiments and become contributors. — *Cond.*

ART. III. *On prolonging the Season of hardy Fruits.* By
Mr. J. FORBES, Gardener to His Grace the Duke of Bedford, at Woburn Abbey.

Sir,

It is much to be regretted that the season of those summer fruits which form at our table the principal part of the dessert is of so short a duration, and that no effectual means have yet been devised to prolong it. In the course of my experiments for this purpose, I have tried various coverings to ascertain the most effective, and have invariably found a covering of *bunting* preferable to all others. By its use, I have successfully retarded peaches, plums, apricots, and cherries, without injuring their flavour, to a late period of the season, covering the trees just when the fruit begins to ripen. Being of a thin woollen texture, it readily admits a sufficiency of light and air for maturing the fruit, whilst it lessens the general action of the atmosphere. To these advantages is added another of yet greater consequence, that of its effectually excluding, if

carefully applied, the wasps and flies, those incessant agents of destruction.

I have practised this method also with grapes, and feel convinced from experience that, wherever it is used, this delicious fruit, the most grateful, perhaps, of all fruits to the palate, in the heats of summer and early autumn, may be preserved to a very late season. In proof of this, I may just mention that I have at the present time (Nov. 20.) some very fine fruit of this kind against the walls, which, by the process I describe, will keep admirably well till near Christmas. In hot-houses, where the trees are trained close under the glass, the entire roof must be covered with bunting, admitting at all times plenty of air into the house, by sliding down the sashes, or opening the ventilators. In damp weather, at an advanced period of the year, a little fire occasionally will be necessary to expel the moisture. As regards gooseberries and currants, which are a luxury at the latter end of the year, the season of them is prolonged by enveloping the bushes in either bunting or mats when the fruit is changing its colour. My red and white currants are thus generally in good preservation till after Christmas. The kinds of gooseberries I find best adapted for this purpose are the late red hairy sorts; the greens and yellows, with smooth skins, do not keep so long, nor retain their flavour equal to the former.

In conclusion, I beg to state that I find both gooseberries and currants keep best by not being divested of their summer shoots till the fruit is all gathered. The bunting will also be found an economical covering for wall trees when in blossom.

Hoping that these cursory observations may, through the medium of your important *Miscellany*, be of some service,

I remain, Sir, &c.

J. FORBES.

Woburn Abbey Gardens, Nov. 20. 1826.

ART. IV. *On the Prolongation of the ripe Grape on the Vine.* By J. M.

Sir,

IN the middle of June, 1825, I removed six three years old black Hamburg vines from a different part of my garden, divesting the roots from all the mould, and replanting them in a green-house I had then just completed. The roots were planted outside of the house, and the stems were introduced

through apertures in the front; of course the vines were in full foliage, but the leaves did not appear to be the least affected by their removal. They were permitted to grow to about twenty feet, and in February, 1826, were pruned to about eight feet. In the spring they broke strong, but, with very few exceptions, I only permitted one bunch to remain on a shoot; some of these weighed 2 lbs. each, and they were ripe by the end of August; but I was desirous to see how long I could keep them free from decay, and in a state fit for the table. I will not trouble you with my other experiments, but that which succeeded best was tying the bunch in a paper bag, and leaving it on the vine, by which means I cut a bunch the first of March last, in a perfectly good and highly flavoured state. I send you this communication as an encouragement to other young grape-growers, and to convince them how easily, and at how little expense, they may acquire the luxury of, I think, the very best and most delicious of our fruits for the unprecedented period of six months in the year. I ought to have stated that mine is literally a green-house, having no flue; using neither tan or dung, but depending entirely on solar heat, and a pretty good vine border.

Brighton, April 22. 1827.

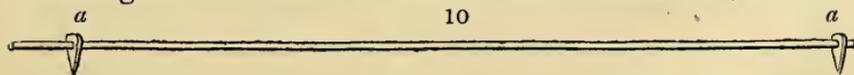
J. M.

ART. V. *On fixing Wire against Garden Walls for training Fruit Trees.* By Mr. THOMAS INGRAM, Gardener to Her Royal Highness the Princess Augusta, at Frogmore.

Dear Sir,

MAY I be permitted to offer a few remarks on the protection of walls from the ill effects of using nails in training trees. Every season thousands of holes, or, as they may be termed, receptacles for insects, are made by that practice; and the walls in the course of time, become next to useless, as is the case in many old gardens.

These evils may in a great measure be obviated, by fixing wires to the walls, at six inches apart, placed horizontally, leaving about half an inch between the wire and wall, for the



convenience of tying the shoots; a little matting is all that is requisite for that purpose. Small iron pins, two inches long, (*fig. 10. a a*) are driven into the wall, at three feet apart, and

through the holes of these the wire is drawn, and fixed at the extreme ends.

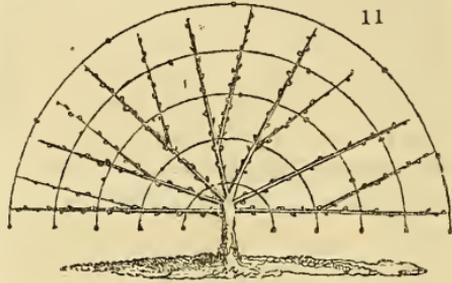
Part of a wall is wired in the above manner, in these gardens; the good effects are obvious, and the appearance is very neat.

I am, dear Sir, &c.

THOMAS INGRAM.

Frogmore Gardens, Dec. 11. 1826.

In a late visit to Frogmore Gardens, we inspected the wall to which Mr. Ingram alludes, and fully concur in his recommendation of the plan. C. Holford, Esq. has employed wire for the same purpose, but placed perpendicularly. (*Encyc. of Gard. § 1575.*) We have also seen it on the open wall, in the garden of William Strutt, Esq. at Derby, applied in semicircles (*fig. 11.*); and on the back wall of the vinery of Joseph Strutt, Esq. of the same place. In the latter instance, annealed wire is used, and a wrinkle is left at the extreme ends



of each length of wire to allow for contraction and expansion. Copper wire is generally preferred, as being less liable to rust, for training peach trees, which require so frequently to be unnailed and refixed. Wiring of walls appears a very desirable practice. Where trees are trained horizontally, such as the pear, plum, cherry, &c., it becomes less necessary, especially if the precaution is taken of boiling the cast-iron nails in oil (a practice first introduced, we believe, by William Atkinson, Esq.) before they are used, to prevent their rusting; and, in drawing them, to begin by a pop with the hammer on the head of the nail, to lessen its adhesion to the mortar, &c. In Germany it is a very common practice to drive in the nails, and either run lines of cord from nail to nail in the manner of Mr. Ingram's wires, or tie the shoots to the nails with bass, and when the shoots require to be loosened, or altered in position, the nails are not drawn, but the shoots untied and replaced by means of the fixed nails, and probably one or two in addition. This practice — leaving the nails as fixtures, — we certainly think, deserves imitation in this country. The trees look a great deal neater when newly trained, and decaying strings of bass are much less unsightly than taylor-looking, ragged, rotting, black and red lists. — *Cond.*

ART. VI. *Autobiography, and various Hints.*

By AGRONOME.

Dear Sir,

I HAVE got the pen in hand, and the paper and ink before me, and am determined to write something; but what it shall be I cannot determine at present. I have dropped the salt, which is said to be a very bad omen, and I rather think there must be some truth in the saying, for I cannot think what article I should pick up next; and when I have laid hold of an article, I have no notion how I ought to handle it, nor do I know how this letter will look till after I have finished it, any more than I do what my volume will be like when I have finished it. You must therefore excuse me giving my name or address until you have had the quire of paper, at least, when if I have said nothing worthy of being talked about, I will shrink back into my former obscurity or littleness, and conclude that my organs are not properly formed for making any great noise in the world.

Ah, Sir! the want of a good education is a shocking want to such as wish to make a figure in the world. I am fearful that my attempts to become an author are little better than those of a quack-doctor endeavouring to become a learned physician. I am just now labouring under a severe fit of the spleen, and perhaps encroaching on what is forbidden in the tenth commandment, viz. "envying and grieving at the good (education) of my neighbours," &c. But I will snuff the candle, mend my pen, and pluck up my spirits. — Surely I was not idle all the time that my neighbours were at college. Was I not watching the progress of the animal and vegetable creation? Was I not learning the management of horses, cows, sheep, and pigs? Yes, Sir; I learned to assist the females in their extremities, to discipline the males, and to shear the sheep according to the literal sense of the word. I have also been fortunate in setting broken limbs, or straightening such as were crooked; I learned butchering very perfectly without serving an apprenticeship to the trade, but merely by practising on such as had died, or would have died prematurely. I also learned to hold the plough without wheels, and to guide the horses without a driver; to deposit the various seeds in the earth, and to gather and secure the various crops, for the consumption of man and beast.

I learned gardening not particularly from choice, but being the youngest son of a poor old farmer, I could not afford to put myself out to any other trade. In my self-conceit, I shall

therefore conclude that I am as learned as my neighbour, though my college was neither Oxford nor Cambridge, and my kind of learning not so much prized as divinity, law, or physic. Yet, in my humble opinion, it ought to be prized as the mainspring of all other callings in the world, and I shall glory in not having spent seven years of my precious life in a college, learning dead languages, or the like. My school education was finished at twelve years of age; it is true, I afterwards bought a Latin dictionary and grammar, and pored over them for some winter evenings, just till I could translate a motto on a coat of arms, or an epitaph on a tombstone, or the like. I also bought a lot of French books at a sale for four shillings, among which was *Le Nouveau Testament de notre Seigneur*. I commenced reading in good earnest, and before I got through the Apocalypse, I understood it nearly as well as the English version, and though I cannot *parler à la Française*, I can understand French books tolerably well. I was always fond of books, but the book which did me the most good, or, as I may say, "let me get my head above water," was *Hutton's Mathematics*, in 2 vols., which I redeemed out of a pawnbroker's shop for one of my companions. I got a case of instruments, and commenced operations with such enthusiasm, that, in far less time than I had calculated upon, I got acquainted with far more problems and theorems than ever I had occasion for in practice.

I would just here give a hint to all young gardeners, &c., to be sure to get perfectly acquainted with mensuration in all its various cases, as when once a man can measure every kind of tradesman's work, it is a grand step towards not being obliged to work very hard himself, particularly after he becomes very old, and not very able to work very hard; and indeed no gardener should look upon himself as any thing superior to a common labourer, who cannot make himself thus useful on a gentleman's premises.

The scale and compasses should be very familiar to every gardener. What is the use of visiting distant gardens, &c., if one cannot bring home dimensions near enough to imitate or improve upon? And here I must give myself a severe wiper, for though I can take the plans of buildings, and the like, I am the worst at taking off landscapes, &c., in the world. *Drawing, indeed!* why, I never could *write* fit to be seen, much less make pictures. One study I was always very fond of, and that was the nature of fluids; the learned call it hydrostatics, and pneumatics, but I merely mean air, fire, and water. From the first time that I saw a conservatory flue

discharge its smoke on a level grass-plot, without any shaft or chimney, I have never been at a loss to cure the most obstinate smoky flue or chimney that came in my way. I should like to remind all gardeners who have any thing to do with drains, or lead pipes, or waterworks, &c., not to forget the powers of the syphon. A most eminent stone-mason and builder informed me, that he lately lost forty pounds by merely *forgetting* the powers of the syphon. He cut a great drain through a stubborn, yet useless rock, to lay his quarry dry; whereas thirty pounds would have purchased a lead pipe, which would have answered every purpose, and been a good pipe after the work was completed: and I may add that I have seen several forty pounds thrown away in a similar manner, but whether from *forgetting*, or from never knowing, I leave the joint-stock-water-companies to judge. But I perceive I have again nearly filled my sheet without entering upon any subject, for this seems only a sort of autobiography; but I have picked up a subject this moment which will likely occupy a good many sheets, and that is, I will describe a situation for a mansion-house, then build it, and all its necessary appendages, then decorate and beautify it, with all the luxuries that England can afford; but lest I get giddy-headed, and build castles in the air, I will at the present subscribe myself

Yours, &c.

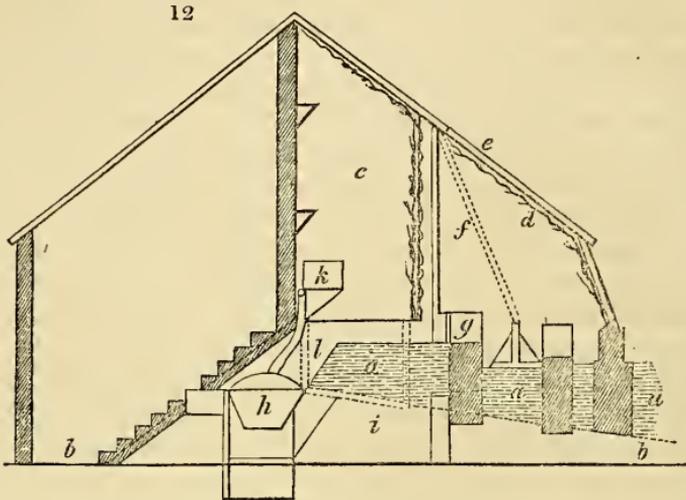
AGRONOME.

ART. VII. *Design for a Vinery, by which the earliest and the latest Grapes may be obtained in the same Structure.* By
Mr. A. MIDDLETON.

Sir,

I HAVE long had an opinion that the construction of vine-ries might be improved, as well on the principle of economy, as for extending the advantages to be derived from them; but, being an obscure individual, and a stranger in this country, I have not had the boldness to submit my plan to the notice of those better qualified to judge of it than myself. I may in the first place refer to the ordinary way of making a border for vines, which I think is generally erroneous. A pit three or four feet deep is dug out, and filled with rich compost; and, not being properly drained, the lower part of this compost soon becomes saturated with stagnant water, altogether unsuitable for the vine. Instead of this, I recommend that

all the border (*fig. 12. a a a*) be made above the surface (*b b*), especially for early forcing, and that sufficient width should be given instead of unnecessary depth. This will be



found far more suitable for the plants, as at no time does the vine require much water. In the next place, and in order to obtain every advantage of such a building, I would propose to have the house in two divisions (*c d*), having vines planted in each to be forced separately. The back division (*c*) I should consider the best adapted for early forcing; and I propose to enclose it completely from the other, by removing the lower sloping sash (*e*), and fixing it by temporary means (*f*), so as to include all the plants, the soil, and the return of the flue (*g*) belonging to the first division. A steam boiler (*h*) may or may not be made use of both for heating the atmosphere of the upper division, and for heating the soil over the steam vault (*i*). To the practical gardener I need not add more. The advantages appear to be threefold: first, a succession of fruit from April or May to February, by forcing the back division from Christmas to May, and only using fire in the front division to ripen the wood; secondly, by the elevation of the border and a proper preparation of the bottom by paving or otherwise, the luxuriance of the vines will be diminished, and their productiveness and the high flavour of the fruit increased; thirdly, by means of the steam vault (*i*), as complete a command is obtained of the roots of the early division as if they were in a pot, and steam may be admitted to this division either to heat the water of a cistern (*k*), or directly from the supply pipe (*l*), which will deliver the

steam to the cistern (*k*), to the atmosphere of the house (*c*), or to the steam vault (*i*) at pleasure.

I am, Sir, &c.

A. MIDDLETON.

Clapton Nursery, March, 1827.

ART. VIII. *On the Culture of the Potato, in respect to Earliness, the Curl, the Worm, and other Circumstances.* By a DENBIGHSHIRE GARDENER.

Sir,

It has been a very old custom to obtain potatoes for sets from cold situations and poor soils, it being conceived that a change from such a soil and climate would make them grow better and more luxuriant in rich soils and warm situations, like removing an animal from a cold country and short pasture to the rich pastures in the warm valleys, not attributing it to the true cause — that they were unripe. I have endeavoured to trace the effects, long and well known, to their true causes, and to combine the whole in one connected system, which, if correctly attended to, will produce every variety of the potato six weeks earlier than they are at present obtained, without any additional trouble or expense whatever.

Obtaining a crop six weeks earlier than usual is an object deserving the highest consideration; its coming into use at the season of the year when the poor man's garden affords him no new vegetables, when the stock of the old potatoes is become short and dear, and, withal, so bitter, unpalatable, and unwholesome; to have then a crop of new potatoes is a delicacy indeed, especially to the poor, depending so much for their support upon the potato; still more so to the Irish poor, to whom the potato may be said to be the staff of life.

I have planted several rows of early pink-eyes from ripe tubers, which are now coming up, almost all curled. Not a curl appears upon any of the same variety from unripe tubers, although planted within a few yards of each other. The last autumn being warm and long, enabled the worm to grow stronger and more vigorous to attack the potato, in which it made holes, and therein, perhaps, deposited its eggs, which, nourished by the heat, acquired life and strength; and, after the potato was planted and began to grow soft, it grew vigorous, and preyed upon its sap, rendering the plant weak and curled. I am inclined to think that the worm is the cause of

the curl; and that, if potatoes intended for sets were taken up before being ripe (before they are full-grown), the worm will not have attacked them; and that, if it has, exposing the potatoes to the sun, as I have described (Vol. II. p. 171.), will kill the worm before it has deposited any of its eggs. This hint I submit to your intelligent readers. I must own, however, that it requires more experiments than I have yet made, to come to a final conclusion on the subject.

The worms prevailed last autumn in the potato, to that destructive degree, that they consumed much of the wheat sown upon the potato ground, before they were destroyed by the frost. In this and the adjoining counties, in almost all the ground where potatoes were grown, large patches appear naked, without a plant of wheat, although the plants now remaining are strong and healthy.

Allow me to impress on the minds of your readers the facts, that taking up the potatoes intended for seed next year before they are ripe (before they are full-grown), and exposing them to the sun for a month or six weeks, and, at planting time, observing the eye-cut and placing it upward, will secure, without any other trouble or expense, a crop of every variety of the potato, six weeks earlier than the same variety of the potato, if allowed to grow ripe, will produce.

I am, Sir, &c.

June 9. 1827.

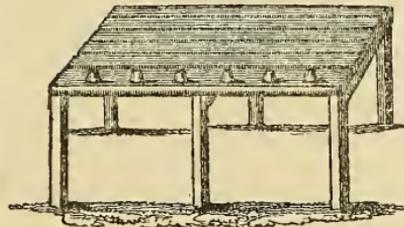
A DENBIGHSHIRE GARDENER.

ART. IX. *Description of a Structure, to be heated by Dung, for growing Cucumbers and Melons.* By MENTOR.

Sir,

BEING anxious to acquire a knowledge of the best method of raising cucumbers and melons, without either pit, steam, or fire heat, I have tried in succession all the new inventions, from Mr. Vachell's bed raised on faggots, to the last new plan in the *Horticultural Transactions*, of resting the frame on four brick pillars, as recommended by Mr. Dickens, and I have not been satisfied with any of them, as they do not give sufficient bottom heat, and the little there is is too soon expended; and, if a fresh supply of hot stable-dung is not in readiness, the plants are frequently injured past remedy. To avoid this evil, I have therefore now made up my bed in a different manner from any of the plans which have been made public in the *Horticultural Transactions* or in your Magazine, but com-

binning some part of each, in the most simple and economical form possible. This I have accomplished by supporting my frame, of two lights, on six posts, each about three feet high, placed in two rows at the back and front (*fig. 13.*); these posts are braced together at the top by pieces of fir, about two inches thick and three inches wide; these are halved together at the corners, that the frame may have an equal bearing. The two ends have three pieces of inch-deal, nailed across them from back



to front, as has also the centre, by which the space under the frame is divided into two compartments. The upper part, on which the frame rests, has rails nailed across from side to side, leaving openings of three or four inches between each, except in the front, where a space is left about nine inches wide. This is covered by a board having six round holes sawed in at equal distances, each six inches in diameter, which holes are covered by as many common flower-pots, reversed and luted down (see *fig. 13.*), so as to prevent the steam from passing into the bed, except when wanted; for which purpose the holes at the top of the pots are fitted with plugs which can be removed at pleasure. These reversed pots appear to answer all the purposes of the flue in M'Phail's pit, and I find them very useful in assisting to throw a fine heat into the bed. I have added these pots on the suggestion of Mr. W. Mitchinson, who is, I believe, a contributor to your Magazine, and is a very clever and scientific gardener. Over the other openings, laths or other pieces of straight wood are nailed, but not entirely close. On this flooring I put first a layer of straw an inch or two thick, and then about the same depth of very rotten stable dung; but I have not allowed either the straw or rotten dung to overlay the board on which the reversed pots are fixed. I then placed the frame on the stage, and filled the two compartments with hot stable-dung, and added a light lining round the outside nearly to the top of the frame. This lining is covered by four broad boards to keep off the rain, and to draw up the heat; under each light I placed as usual about a cubic foot of compost, and in forty-eight hours the heat came up sufficiently to warm the earth in the bed; but, as the steam came partially through the stratum of rotten dung, I pressed it very firmly down, and particularly so round the sides, which entirely excluded it, and the following day I put in my plants,

since which time I have had a constant growing heat in the bed, seldom lower than 70° by night, and in the day from 80° to 85° , according to the quantity of air admitted. The advantage which I expect to derive from this method is, that when the heat begins to decline, I can, by taking down half of either the back or front lining, remove the dung from one of the compartments and replace it with a fresh supply, which will renovate the decaying heat for at least a fortnight, and when it again declines I can remove the other compartment, still continuing the slight linings, which may, if necessary, be also renewed; but hitherto my bed has not required any assistance, although the weather has been extremely unfavourable for early forcing, not so much from frost as from high and cold winds from E. and N.E. I am, Sir, &c.

March 10. 1827.

MENTOR.

June 21. — In a postscript of this date to a communication from “Mentor” on another subject, he informs us that the movable frame for early forcing has fully answered every expectation; that the first cucumber cut from it was fifteen inches long, without a seed, and from the time it was set was only sixteen days in growing to that size. — *Cond.*

ART. X. *Suggestions for a movable Cucumber Bed to be heated by Dung.* By Mr. THOMAS HAWKINS.

MR. HAWKINS suggests the idea of an iron rim the length and breadth of a common hot-bed frame, having a rebate, on which spars or boards could be supported so as to form a bottom for the mould, and a common frame might be set on the same rebate for the sides. “Screws with handles might be fixed on occasionally at the four corners of the iron bottom, whereby four men might be enabled to remove or shift it with its contents to a new or fresh-made bed prepared for its reception, and the old one might then be converted into a new bed for another frame, or put to any other use. As I have heard many gardeners complain of the uncertainty of the regular diffusion of heat by means of linings to hot-beds, I think, by adopting this method, it would completely remove the defect.”

The Haw, near Gloucester,

March, 1827.

ART. XI. *On a Mode of procuring a Crop of Cucumbers during Winter, by forming the Hot-bed within a Vinery.* By MR. JAMES REED.

THE gardener that is most successful in growing early cucumbers is generally considered clever in every other part of his business. This is not altogether without reason, for the man who bestows the necessary attention to keeping up the proper degree of heat, giving and taking away air, covering and uncovering, &c., to a cucumber frame, during the winter months, is likely to be of regular habits and careful attention, and these qualities go far towards ensuring success in whatever is taken in hand.

The duties of gardeners in small places near large towns are generally very different from those of their brethren in the country. In the former case, their attention is confined to a few objects, and of course greater excellence is attained; in the latter, the gardener has often the charge of extensive shrubberies, park scenery, and distant plantations, and these necessarily take him away great part of his time from the kitchen-garden, and leave him dependent upon his assistants. It was the experience of the uncertain results connected with this dependence, which led me to the plan of placing my winter cucumber bed in a vinery, and to manage the vinery and bed in the manner I am now about to describe.

This vinery was forty feet long, sixteen feet broad, twelve-feet high at the back, and five feet and a half high in the front, with one fireplace, and a flue which passed round the house. The air could be admitted both by the top and front lights.

On or about the 20th of September, cucumber seeds were sown on a moderate hot-bed in the open air, and treated in the usual manner till they were ready to ridge out. This generally happened about the beginning of November, at which time the shoots of the vines were withdrawn from the house, and a dung bed formed in the floor in the usual way. After placing the frame and mould on the bed, it may be left without the lights till the rank steam has passed off. After this the plants being placed in the hills, and the sashes put on, the following are the leading features of management during the winter:—

Make fires in the evening, so as to warm the air of the house to from 56° to 60° , and in very severe frosts it may be raised to 70° . In the mornings of the coldest weather, and shortest days, make a strong fire, so as to raise the heat to nearly 70° , when the house is shut up. About eight o'clock

and from that time to half-past nine, give plenty of fresh air, by opening the front sashes and top lights, after which, and during the remainder of the day, give plenty of air to the cucumbers, by tilting the sashes in the usual way.

In mild weather and during sunshine the lights may be taken entirely off the cucumbers for some hours each day; and, immediately after forming new linings, the top lights may be left down a little all night, to permit the escape of any rank steam.

The advantage of this mode of growing cucumbers during winter is the comparative certainty of an early and good crop, at one third of the trouble and expense of the common method out of doors. The expense is lessened by no covering up being required, and by all the labour attending renewal of linings, &c. &c., admitting of being done in wet weather.

By this practice fruit may be cut in January. The vines may be introduced in the beginning of March, and will break beautifully and regularly in consequence of the genial steam of the dung. In April the shade of the vine leaves will have rendered the house too dark for the culture of the cucumber; and, as by this time cucumbers are plentiful in the common hot-beds out of doors, the bed in the house may be cleared out, and the vines treated in the usual way till the following November.

I am, Sir, &c.

Bristol, 24. Broad Street,
January 11. 1827.

JAMES REED.

ART. XII. *On a superior Method of raising the Vine from Layers.* By Mr. W. GREEN.

THE following method of propagating grape vines in the open air succeeds far better than any other: Make a layer or layers in pots of the size No. 32, any time before June; for, if they are laid ever so early in the spring, they will make no roots before the middle of July. It is not necessary to ring, pierce, twist, or tongue the shoots before they are laid, as they will put forth abundance of roots without any operation of this kind; they only require to be well supplied with water. Separate the layers from the stool in the last week in August; plant them immediately where they are intended to remain; keep them well supplied with water during the remainder of the autumn, and they will make roots a yard long before the winter sets in. Shorten the young plants to one or two

eyes, and they will shoot strong and fine in the succeeding spring.

If they are suffered to remain on the old stool after the last week in August, it will be found upon inspection that they have less and less roots every time they are examined (as they die off); and, when not planted before the spring, when that time arrives it will be found that there is scarcely any root left alive. The points upon which I lay most stress are these, — to keep them well supplied with water, to separate the young plants from the old stool not later than the last week in August, and to plant them immediately where they are intended to remain. I intend these directions to apply solely to vines propagated in the open air without any heat or other artificial assistance.

W. G.

Stepney, February.

We have seen the above mode put in practice; a leaky pot of water, or a tuft of wet moss kept wet, being put over each layer, and believe it to be, as our correspondent says it is, far preferable to any other. As to any difference in the nature of plants raised from layers, and plants raised from buds or short cuttings, as alleged by some authors, we think the opinion erroneous. — *Cond.*

ART. XIII. *Suggestions for Improvements on the Horticultural Memorandum Book of a Country Clergyman.* By SUFFOLCIENSIS.

Dear Sir,

I BEG leave to suggest to your correspondent on the “Description and Use of a Horticultural Memorandum Book” (Vol. II. p. 319.), a little variation in form and arrangement, by which I conceive a very complete register of all work relative to the different crops in a garden may be compressed into a very narrow compass, and a most useful book formed for reference at any future time.

My plan is to rule in a common memorandum book columns in the form of the copy which I enclose. In the first of these I write an alphabetical list of all the vegetables I grow in my garden; then under every month I have three open spaces, headed “sown,” “planted,” “gathered;” under one of these I merely insert the day of the particular month on which either of the operations is performed opposite the name to which it applies; and this gives me a register of the whole progress of my crops through the year.

The time of pruning trees, thinning fruit, and its ripening, can be arranged in a similar way, and it would be equally easy to enter memoranda of any information of work to be performed, collected from books, or even conversation; for instance, "March, figs in pots, *L. G M.* ii. 236." This, written in pencil in January, would show the work was to be done in March, and where the directions could be found. By the same rule, if, in going through a garden or in conversation, a different time of sowing or planting of any crop appears to answer better than that now adopted, only place the initials of the informant and the date under the month opposite the vegetable. Suppose in May I see a very fine crop of early cabbages, and I find they were sown a few days earlier than usual, say August 8th, I should, opposite "cabbage," under August, write with pencil "I. C. L. 8th;" this would refresh my memory, not only as to the day of doing the work, but as to my informant as well.

I remain, dear Sir,

June 2. 1827.

SUFFOLCIENSIS.

MEMORANDA OF CROPS.

1827.	Jan.		Feb.		March.		April.		May.		June.	
	Sown.	Planted.	Sown.	Planted.	Sown.	Planted.	Sown.	Planted.	Sown.	Planted.	Sown.	Planted.
	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.	Gathered.
Broccoli, Cape	-	-	-	-	-	-	-	-	-	11	-	-
Broccoli, late purple	-	-	-	-	-	-	23	-	11	-	-	-
Celery, in frame	-	-	27	-	-	-	*30	-	-	-	-	-
Lettuces, in ditto	-	-	27	-	-	-	10	-	-	-	-	-
Onions	-	-	-	-	14	-	-	-	-	-	-	-
Potatoes, onions, and bulbs	-	-	-	-	14	-	-	-	-	-	-	-
Peas, early frame, in hot-bed	-	-	-	-	1	29	-	-	-	31	-	-
Ditto, on south quarter	-	-	-	-	1	-	-	-	-	-	-	-
Ditto, Bishop's, on ditto	-	-	-	-	1	-	-	-	-	-	-	-

* Pricked out.

ART. XIV. *Account of a rapid and successful Mode of grafting the Orange.* By Mr. JAMES REEVE, Gardener to G. F. Evans, Esq. and Lady Carberry, Laxton Hall, Northamptonshire.

Sir,

HAVING made what I consider a great improvement in the propagation of the orange, and others of its tribe, and thinking it deserves publicity, I beg leave to trouble you with the following statement:—

Experience has long induced me to raise my stocks intended for oranges from the seeds of the lemon. These, when two years old, are fit to receive the grafts. For two months before this operation, they are kept in a cool situation, and only protected from frost, where they remain till about ten days previous to the 1st of May, the proper season for grafting. A hot-bed composed entirely of leaves is prepared for them, in which the stocks are placed in a temperature of from 68 to 72 degrees. The scions being selected, they are steeped in milk-warm water for about five minutes; the stocks are cut down to within three inches of the surface of the mould, with one stroke of the knife, in a sloping direction, leaving a smooth surface about an inch in length, on which the graft is properly fitted, and immediately and accurately secured by bass; after grafting they are replaced in the hot-bed for about six weeks, and during the first fortnight are kept constantly shaded and closely shut up from air, except only at such times as the frame is opened for the purpose of giving water, which should always be given in a lukewarm state.

In a fortnight or three weeks the stocks and scions will be found united, the bass may now be removed, and the plants allowed a little air, but with care for the first few days, at the same time shading from the sun. The air may be progressively increased, until it reaches the usual temperature of the orangery, where they may then be placed.

I attribute much of this expeditious success, to the fine genial heat which arises from a bed of oak leaves; its sweet and humid quality is peculiarly suitable to vegetation, and in such cases as this is absolutely necessary. So fortunate have I been in this practice, that out of nearly ten dozen plants only two failures happened.

Lemons, citrons, and shaddocks, I treat exactly in the same way, and with corresponding success: but what I would particularly call your attention to is the comparative excellence of the lemon stock over that of the orange; and, in order to prove this satisfactorily, I have sent you two portraits taken indiscriminately from among many others; the one (*fig. 14.*) is an orange, on an orange stock, and the



other (*fig. 15.*) is also an orange, but grafted on a lemon stock; they were grafted at the same time, and throughout have had exactly similar treatment in every respect. Four or five dozen of each were grafted in May, 1824; those on the lemon stocks are greatly superior, and on an average are from seven to nine inches higher than the others. The growth and habit of those on lemon stocks are

also more robust in the wood, finer and cleaner in the foliage, and stronger in the flowers and fruit.

I am, Sir, &c.

Laxton Hall, Northamptonshire,
March 18. 1827.

JAMES REEVE.



ART. XV. *Description of a new Tally for naming Plants, with a Note on grafting the Camellia.* By Mr. STEWART MURRAY, C.M.H.S.

Sir,

I SEND you herewith a new tally pin (*fig. 16.*), which in my opinion will obviate many of the inconveniencies attendant upon such as I have hitherto seen used in Botanic Gardens. It consists of a cast-metal standard with a long square head, in the front of which is a hollow box, into which the ticket with the name written thereon (*a*) is put; then a pane of glass is cut to the size (*b*), and fitted in over the name with putty like the pane of a window. The ticket on which the name or number is written may be of wood, tin, or stone ware. I prefer the wood, as easily written upon by a carpenter's black lead pencil, and also because it is not liable to rust.

The dimensions of this tally will always depend upon the choice and object of those who wish to use it. The expense per 100 of the size sent is, when completed for use, about 23s.; not, however, including the value of men's time in writing and glazing, &c., as this can be done at such seasons as their time is of the least value.

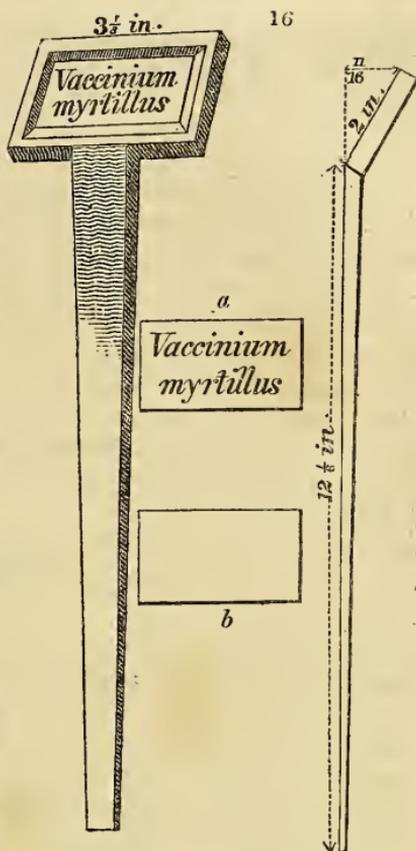
The cast-iron of the size sent cost 20s. per 100, when metal was high, a year ago; the wooden tickets about 1s. 6d. per 100; cutting the glass from waste fragments, &c., 1s. per 100; and perhaps putty for 100 may cost 6d.; in all, 23s.

The use of small bottles with water, attached to the end of the graft, in working Camellias, &c., as noticed Vol. II. p. 33., is good; but I have, for these three years past, practised with success pushing the end of the graft into a small potato, or piece of turnip, &c., and then working by the middle of the graft as in the process of inarching. In this way I grafted some double-flowering cherries in three years old wood, which flowered very well the following summer. The application is cheaper, more convenient, and less liable to accidents than phials of water.

I am, Sir, &c.

Glasgow Botanic Garden,
April 23. 1827.

STEWART MURRAY.

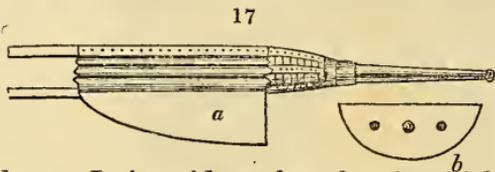


We certainly think Mr. Murray's tally the best which we have seen for the open air; and chiefly because, although the iron may become corroded from the effects of time or the neglect of painting, the writing and the glass will remain as clear and legible as at the first. The price is remarkably low; neat cast-iron tallies cost, at the foundery at London, from 25s. to 30s. a hundred, and the expense of painting and naming is to be added. — *Cond.*

ART. XVI. *Description of a Machine for dusting Fruit Trees with powdered Lime or other Powder.* By C. P. of York.

Sir,

AFTER the instrument described by Mr. Samuel Curtis, in Vol. I. p. 415. of your excellent Magazine, for the ejection of lime-dust, perhaps you may think it worth while to record another one for the same purpose, which I had constructed several years ago, and which, although I have taken the pains to set forth its advantages to several individuals, I have not yet seen any where in use. This instrument consists of a pair of common bellows, with this difference only, that the lower board and valve are omitted, and a piece of tin, resembling in shape those tin scales used in the retail of meal (*fig. 17. a*), in the flat end of which (*b*) are two small valves, one fourth of an inch diameter, with a screw-hole to introduce the dust. It is evident that the air which enters from the valves by the up-stroke of the bellows raises the dust in the interior, which is ejected by the down-stroke; and, by repetition, the whole powder introduced, capable of rising from the draught, will be thrown out.



The transplanter, described by you as of French invention, opening upon hinges, (Vol. I. p. 268. *fig. 53.*) was the invention of the Rev. Mr. Thornhill, vicar of Staindrop, Durham, upwards of twenty years ago, and was used extensively in the transplanting of turnips on his farm. I have one at present from him, and I use it not only for the above purpose, but in plunging pots. I remain, dear Sir, yours, truly,

York, April, 1826.

C. P.

ART. XVII. *Account of a successful Attempt to destroy the Aphis lanigera.* By Mr. R. TURNER.

Sir,

I BEG leave to communicate, for the benefit of your readers, that, in the year 1823, I had an apple tree, a seedling pearmain, with several others, attacked by the *Aphis lanigera*, introduced into my garden by some trees purchased the pre-

vious year from Newark. I was desirous of trying experiments for the purpose of ridding my garden of the pest; and, in the first instance, I tried lime in a state of mixture, then in solution, but without effect. Next I had recourse to a mixture of three parts of soap-lees (liquor sodæ), and one of oil of turpentine, which I applied with a brush, and repeated after an interval of three days; and, to my delight, found I had completely destroyed the insect, and my trees have been free from it ever since.

With respect to Mr. James Dann's mixture, I have to observe that tar, if diluted with a little oil of turpentine, would be preferable to his recipe, as I have a decided objection to the use of metallic solutions, well knowing, to my cost, that they are in most instances destructive to vegetation.

I remain, Sir, &c.

Grantham, May 21. 1827.

R. TURNER.

ART. XVIII. *Remarks on the Disappointments incident to Orchardists, and on describing and characterising Fruit Trees.* By W. R. Y.

Sir,

CONSIDERING your Magazine equally valuable as a vehicle for correcting what may be detrimental to the science of horticulture, as to disseminate and elicit opinion, I beg to enclose some hasty remarks.

I have expended trouble and cash in the department of orcharding, but the disappointments which I have experienced are sufficient to check any future experiments.

I allude to the trifling chance an amateur has of obtaining the identical trees he orders. I do not challenge individuals. I have received packages from the first nurseries; yet, out of three or four hundred trees, I have, and shall have, to re-graft a third part; and, next spring, to graft four pears, six years old, which, I suspect, have never yet felt the knife. This allegation is not confined to apples and pears, but from vines to wall trees, particularly to plums, and also to melon seed.

I do not say the trees received are worthless, but I have not obtained the desired sorts; so that, instead of possessing numerous specimens, I have duplicates of many, and none of several well recommended fruits.

I certainly have raised a valuable orchard, but have not ridden my "hobby." It is highly productive of profit, but not consonant to my original design.

To obviate this evil, perhaps higher wages might be given by nurserymen to lifters and labellers of sale trees; and, to admit of it, a little higher value might be set upon the same: for the Northern nurserymen cannot supply them at a guinea a score, and give the attention I recommend.

Men of some science might also partly reduce the evil, by a full description of their best fruits. Ray, Miller, Martin, Forsyth, and Nicol have all partially described the best fruit trees, but we have not that ample detail given in describing the plants, leaf, calyx, &c., which is necessary.

My own observations teach me that nearly all fruit trees might be characterised, so much, at least, as would identify the same, by the first leafing. The description of Mr. Wilmot's strawberry (Vol. I. p. 230.) is not sufficient to enable me to reject a spurious sort, and yet the texture of even the leaves alone, I should suppose, might do so, judging from other known species. The red Roman Nectarine, for instance, has a smooth, while the Newington has a jagged leaf. What can be more dissimilar than the blossom of the Noblesse and Gallande Peach. The Moorfowl-egg Pear may be always characterised by the redness of its shoots, and the foot-stalks of its leaves; and I am of opinion, that if gardeners would accurately describe the trees they recommend, the aspect and soil best suited to them, the time the fruit ripens and decays, with their several uses and properties, they would conduce much to the spirit of orcharding, and you might enrich your valuable publication with useful information.

The *Transactions* published by the Horticultural Society is a sealed book to country practitioners; quarto paper, large print, and extensive margin little suit our pockets. The publication, to do service to practical men, must be suited to their means. We vegetate slowly in these northern regions, and require nursing; you southerners rapidly increase with the reaction of every genial shower. We must continue to be fed with children's food. You have supplied us with much, and I hope you will continue long to do so.

Sheffield, July, 1826.

W. R. Y.

ART. XIX. *Comparative View of the Expenses of a Gardener and a Butler to their Employer.* By W. S.

Sir,

CONCEIVING that the claims of gardeners to a more ample remuneration are well founded, I trust that the pages of the

Gardener's Magazine will be open to the discussion of this subject, as well as to that of every other connected with the advancement of horticulture and its professors.

I would venture to suggest to the nurserymen, that it is in their power materially to promote the comfort of gardeners, consistently with the benefit of all parties concerned. I would suggest that when applied to, as they frequently are, to recommend gardeners at an insufficient salary, they would, in a reasonable and candid manner, remind their applicants of the nature of the services which they require; and that these services, if paid below their fair value, will never be performed so well as if the performer were conscious of being properly treated. It can only be from not having this properly pointed out to them, that gentlemen offer much lower wages to a gardener, than to other servants whose duties have much less of responsibility attached to them, and who require much less mental cultivation and general knowledge to fit them for their situations.

Let us take the case of a gardener and a butler, and suppose a gentleman to take two boys of fourteen years old into his service, in order to bring them up for these two departments of his establishment. The boy in the garden will be considered well paid with 7s. a week for the first year, and one shilling advance each year, for the next three years, making the sum of 88*l.* 8s. for the four years. Then suppose the other boy to be placed in the stables for the first four years; he will perhaps have 4*l.* for the first year, and 1*l.* advance each of the three succeeding years, and 6s. per week for board wages, with two suits of clothes value 8*l.* each a year, making the sum of 116*l.* 8s. for the four years. Then the next three years the youth in the garden will have 11s. 12s. and 13s. per week, making the sum of 93*l.* 12s. for the three last years of his apprenticeship. Then suppose the other youth to be taken into the house as steward's-room-boy: he will have 9*l.* and 10*l.* a year, with 7s. per week board wages, and two suits of clothes a year which will cost 10*l.* each, making the sum of 114*l.* 12s. for the three years. Again, suppose the young gardener to be four years a journeyman, and have 14s. per week, which will amount to 145*l.* 12s.; and the other young man made footman or under-butler for four years with 18*l.* a year wages, 8s. a week board wages, and two suits of clothes each year, and a great coat every two years; this will amount to about 14*l.* 5s. each year, making the sum of 202*l.* 4s. for the four years. Thus the house servant will be found to have cost the gentleman more by 115*l.*

12s. to qualify him for being his butler, than the other has to qualify him for being his gardener; and after each is appointed to his new station, the butler will receive more, by from 5*l.* to 10*l.* a year, than the gardener. I think, therefore, there is sufficient reason for remonstrance, as the profession of a gardener requires incomparably greater application of mind than that of a butler; a gardener is also expected to have attained a greater stock of general knowledge than the other, and not to be behind him or any servant in attention to his duty, fidelity to his master's interest, and general trustworthiness.

I am, Sir, &c.

December 19. 1826.

W. S.

ART. XX. *The Art of ornamenting, showing, preserving, and packing Cucumbers, Grapes, Plums, and other Fruits whose principal Beauty consists in their delicate Bloom.* By Mr. ROBERT GAUEN, Gardener at Millbrook, near Southampton.

FROM a manuscript with the above title, Mr. Gauen has permitted us to give the following abridgment. The article at length is in the course of being printed, and will be sold by Mr. Eddy at No. 354. Oxford Street, together with a box of Mr. Gauen's invention, in which the mystery of improving the bloom of fruits is performed.

Among florists and growers of prize fruits, manual decoration is in many cases of equal importance with successful growth; the petals of the carnation require to be dressed on a card; the cucumber to be straightened, and the plum powdered with artificial bloom. Ten years' experience, and the award of nearly 100*l.* in prizes for show fruits, enable Mr. Gauen to speak on this subject with a degree of confidence which can belong to but few individuals.

To secure a delicate bloom to the cucumber, it must be protected, from the period of its blossoming, from the drip of the lights, and from the damp of the soil, by two pieces of glass about four inches wide, and from eight to twelve inches long; the one placed under the fruit, and the other supported on pegs over it; both having a fall of half an inch to one end, to carry off any drip or condensed dew.

To procure great length, small girth, and "the straightness of a gun barrel" to the cucumber, instead of supporting the upper piece of glass on pegs, lay on the under piece of glass

along side the incipient cucumber, two pieces of wood about the length you suppose the fruit may grow to, about two inches square, and with the upper inner angle of each piece bevelled off. The use of these pieces of wood is, to increase the solar heat by reflection in the daytime, and, by close confinement during the night, to draw out the fruit considerably beyond its natural length. A fruit which in ordinary cases would run but eight or ten inches in length, may, by this process, be extended to ten or twelve inches. This species of elongation, however, is attended with small prickles, placed at greater distances than is desirable in a handsome fruit. Abundance of heat and air will lessen this evil; and it may be cured artificially, by inserting prickles in the manner to be afterwards described.

To ensure shape, size, prickles, and bloom, the foliage of the plant must be kept moderately thin. The same sort of cucumber grown under a crowd of leaves, and grown in a free circulation of air exposed to sunshine, will be as different in appearance as the fruits of two distinct varieties. In watering the plants, never wet the fruit. Before cutting the fruit, see that they are perfectly straight, at least a day previously; for, though warped fruit may be straightened after they are cut, this operation is much better performed when they are on the plant.

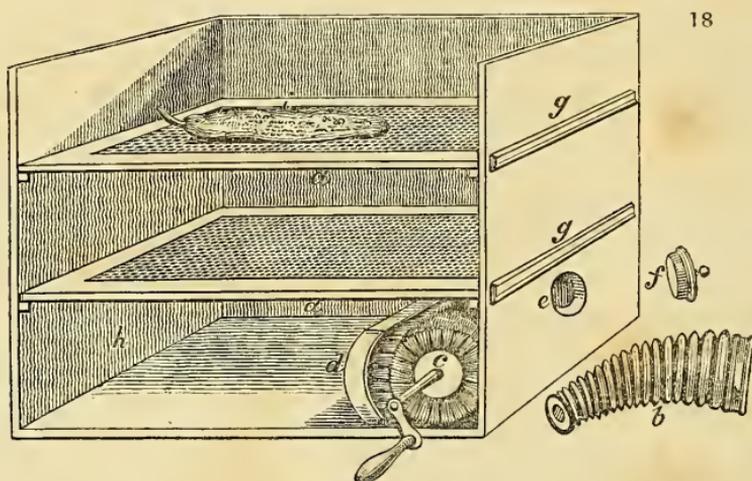
In straightening warped fruit after they are cut, it is necessary to keep them in a cool dry place, and totally excluded from change of air. Among the different means recommended for straightening, some bury them in a case in earth, others keep them in a damp cellar, and some few immerse them in dry sand. Mr. Gauen never found any other care necessary, than to keep them in their show-box, in a cool dry room.

Mr. Gauen's mode of straightening cucumbers is as follows:—
“Take a flat board, half an inch thick, four inches broad, and the length of your fruit; bore holes, at intervals of half an inch, across the board, and within one inch of each end. Provide two strips, the length of the board, one half inch wide, and one fourth inch thick; place one strip on edge, supported by a peg placed in one of the holes outside the strip that is on edge, and put the board under the growing fruit, with the two ends of the arc formed by the crooked fruit against the upright strip; place a bit of cotton wool or moss between each end of the fruit and the upright strip, to prevent bruising. Then take the other strip, and bring it within a peg placed at one end, with a bit of wool or moss placed against the outer arc of the crooked fruit as before. Proceed to straighten the fruit,

with one hand straining it by the strip (keeping the whole steady with the other) towards the fixed upright strip, so as to bring it in a straight direction, and fix another peg. In ordinary cases, you may make them perfectly straight at the first operation, but in some of the most difficult it requires two or three. A fruit may be straightened at any period of its growth, but it requires to be left one night after the operation, to prevent its return to crookedness."

In the performance of this operation, the bloom will have been injured, but this may be restored by the blooming process.

In order to restore the bloom to fruit, the following articles are necessary:—A box with slides (*fig. 18. a*), a common powder-puff (*b*), and a few ounces of finely calcined and perfectly



dry magnesia. The box may be of any size, according to the quantity of fruit which it is proposed to subject to the blooming process at one time. That sold by Mr. Eddy is about 20 inches long, 18 inches deep, and 13 inches wide. The sides and bottom are fixed, but the top, which fits on tightly by means of a surrounding moulding, lifts off. Supposing the top and one of the sides removed (*fig. 18.*), on the bottom, at one end, will be seen a brush-cylinder of three inches' diameter, and the width of the box (*c*), which works out into a breast or segment of a brush-cylinder (*d*), in the same way as the drum of a threshing-machine works against its cover. These two brushes, working against each other, are for the purpose of raising the powdered magnesia into a cloud of dust in the box.

In the end of the box will be seen a hole (*e*), to which there is a stopper (*f*), and this hole is made exactly the size of

the small end of the powder-puff (*b*). The slides of this box are about six inches apart, and are put in and drawn out through the end of the box (*g g*); these slides are four in number, two of fine wire in a wooden frame, and two of plain deal boards. Both the wire slides are used together when the greatest number of fruit is to be bloomed at one time, and in the ordinary way; but when fruit is to be bloomed in the most delicate manner, the plain board is used for the lower slide, but so far drawn out as to leave an opening at the farther end (*h*), by which means only the very finest of the powder can rise in the air, so as to surround and be deposited on the fruit placed on the upper wire slide (*i*).

Whenever a leash of cucumbers are to have their bloom repaired, all that is necessary is to place them on the wire slide; and, having charged the puff with powdered magnesia, rendered as fine as possible by passing it through gauze, to apply it to the hole, and, while working it with one hand, to turn round the brush-cylinder with the other.

After a few strokes, the box will be filled with a fine cloud of powder, the grosser particles of which will fall to the bottom, while the finer will be deposited on every part of the fruit. Two or three applications of the puff, at intervals of an hour, will in general be sufficient; but to have the bloom in the highest degree of delicacy, the fruit should remain all night in the box. In the intervals of working the puff, the plug is inserted in the puff-hole.

Cucumbers so bloomed may be packed and sent to any distance, without the slightest injury, by the following process:—Procure a box one inch longer than the fruit to be packed, two and a half inches deep, and six inches in width. Provide a few strips similar to those used in the operation of straightening, and pack the cucumbers with them upon a false bottom, prepared with holes at each end for the pegs. Any quantity of fruit may be safely sent in one box, by extending its size, packing the fruit, tier upon tier, on false bottoms, and keeping each fruit apart by strips and pegs.

Where prickles are to be added to cucumbers, it ought to be done before the bloom is given; different sorts of cucumbers, and the same sorts in different seasons, differ so much in regard to prickles, that recourse is often obliged to be had to art, in order to procure for show a leash beautifully and regularly furnished with this characteristic appendage. Even when a gardener can select his fruit from fifteen or twenty lights, it is often difficult to procure a leash that will match in the size and arrangement of their prickles.

Mr. Gauen's mode of supplying prickles is as follows:—Procure a few camel-hair pencils, a little gum-arabic, some Indian ink, a little finely powdered starch, a sharp penknife, a few small needles, and one or two large needles. Select the prickles from fruits that have been gathered a day or two; from five to fifteen may be wanted for a fruit. In distributing them over the fruit, imitate nature. In preparing the prickles, remove them without taking any of the flesh of the fruit; cut them off, and let them drop on a sheet of letter paper, from which you may take them up as wanted, by turning them up on their base, and then thrusting a small needle into their side. Pincers must not be used, as they bruise the prickle. Dissolve the gum in a tea-cup, with boiling water; and, when it has become a strong size, stir in a tea-spoonful of finely powdered starch.

To put on the prickles, take a large clean camel-hair pencil, dip it into the gum, and present the base of the prickle to the surface of the gum, suffering it barely to touch; then displace the bloom from that point on the cucumber where you are going to place the prickle with a dry camel-hair pencil: having applied the prickle, keep it in its place with the eye of a large needle, while you withdraw the small needle from its side. To colour these prickles, mix up some gum water and Indian ink to such a consistency that you find you can take a globule upon the point of a large needle without dropping; then take some of the mixture on the point of a fine camel-hair pencil, and apply it to the point of a prickle; if it is of the proper consistency, it will, by its own gravity and the attraction of cohesion, surround the prickle, and adhere to it without running upon the fruit. “If you wish to increase the size of the prickles, repeat the application.”

For show cucumbers, it is deemed necessary to have a decayed blossom adhering to the end of the fruit: this is easily supplied from other fruits, and made to adhere with a little gum water and starch.

“To dish up a leash (three, as in greyhounds) of cucumbers for show,” moss or cotton wool is generally laid in the bottom of the dish, and over that a cucumber leaf, and the fruit. The latter must show “as perfect a match as possible, in the three fruit, in length, size, arrangement of prickle, and bloom.”

For the carriage of cucumbers to the show, most gardeners use a box consisting of two tiers, with three cells in each, the cells lined with green baize, and capable of being contracted or distended at pleasure, by means of string fastenings; but Mr. Gauen prefers the mode of packing already described,

by which fruit of the most delicate bloom may be carried with perfect safety in any conveyance, on springs, for hundreds of miles.

To preserve the bloom on the grape, complete the thinning of the berries when they have swelled to half their size, and be careful not to dash water violently against them, or subject them to a current of steam. Abundance of light and air are favourable for the production of bloom; the most powerful sun will not injure it, nor a moderate degree of shade. When grapes with delicate bloom are gathered, they should be placed in a basket of well threshed moss, taking care not to bruise any of the berries, because their juice not only deprives other berries of their bloom, but renders it extremely difficult to restore that bloom by artificial means.

To restore the bloom to grapes, suspend them in the sort of box already described, and work the puff at intervals of an hour or two. When not wanted for immediate use, they should be suffered to remain all night in the box; but, when a very delicate bloom is wanted, they should remain a few days. In no situation will they keep so well, and for so long a time, as in the blooming-box.

Grapes require more care in packing than any other fruit. Mr. Gauen recommends moss and cotton wool, the former well threshed and carefully picked over. Place a layer of moss at the bottom of the box; on this a layer of cotton wool; and, next, the bunches, side by side, within half an inch of each other; fill the interstices with cotton wool, place a layer of the same material over the fruit, and finish with a layer of moss. A false bottom, supported by the sides, may next be introduced, and the layers repeated according to the size of the box. Where the bunches are very large, it is necessary to introduce splints or slips of whalebone through the heavier parts of the bunches, and support them on the sides of the box, or on the interstices of cotton wool.

Grapes are shown for prizes on two distinct grounds; the one for size and delicate bloom, the other for flavour. In either case, when the bloom of any part of the bunch has been injured by handling, the puff may be directed against the part injured. Before fixing upon a bunch to show for flavour, it is necessary to taste the bunches in different parts of the house, or of different parts of the same vine. In general, the berries of the best flavour and colour are those of the first ripened bunches (of the bunches at the root end of the vine), and of the lower extremity of the bunch. Grapes, unlike other fruits, do not improve in flavour after gathering;

unripe bunches never get any riper after they are gathered. In selecting bunches, avoid those where any, or even one, of the leaves have been removed from the vine near the bunch, because the berries of bunches so circumstanced will certainly be of inferior flavour. Every one must have observed this in the case of gooseberries and currants.

In dishing up grapes, the taste of the operator must be displayed according to the kinds and the size of the bunches; placing the largest in the centre, and the others round it, so as to form a handsome figure. Between dishing up and showing, keep them in a cool place.

Plums are to be treated on the same general principles as grapes, only instead of being suspended in the blooming-box, they may be laid upon the wire bottom. No fruit requires so much care in handling as the plum, but in none is the bloom more easily restored.

Peaches, nectarines, apricots, figs, and, in general, every fruit having a bloom, may be treated as directed for the foregoing: the box, the puff, and the calcined magnesia are all the ingredients necessary.

At first sight it may appear surprising that a white powder should give the bloom to fruits of different colours; but the colour resides in the skin, and the bloom is merely a semi-transparent colourless powder. A variety of artificial powders have been used to imitate the natural powder, the chemical properties of which seem not yet to have been ascertained. Mr. Gauhen thinks it probable that this powder is of an antiseptic quality, and intended to defend the finer pores of the skin from the causticity of the air. He "tried a vast number of experiments with various articles, previous to the choice of magnesia; but, as numbers of articles that would have answered as well as magnesia are deleterious, or offensive to the taste," he considers magnesia, which when kept thoroughly dry is a powerful antiseptic, as decidedly the best.

Millbrook, near Southampton, July, 1827.

We are glad of the above communication, because it supplies what we have long been desirous of laying before our readers. All the information that we were able to gain among the London fruit-shops was, that yellow grapes sometimes had their bloom restored by being fumigated with sulphur; and that some fruiterers of little repute were in the habit of supplying a bloom to plums, by dusting them with the powder of the common blue used by laundresses. The last operation is, in general, so clumsily performed, that it may be readily detected; the bloom

communicated to grapes by the fumigation of sulphur is much more delicate, and is no doubt produced on the same principle as in Mr. Gauen's application of magnesia, viz. by the deposition of the fine particles of the sulphur on the surface of the fruit. It is generally known that filberts, and sometimes almonds, walnuts, and other nuts are fumigated with sulphur, by which their uniformity of colour and glossiness is much improved. In the performance of these operations, the same mode is followed as in bleaching peeled willows, straw plait, bristles, &c. : viz. paper or rags are dipped in melted brimstone (it melts at 220°); these rags or papers are then burned in an oven or close vessel till it is filled with smoke; the burning materials are then withdrawn, and the articles to be bleached introduced, the vessel or oven closed on them, and left till the smoke is condensed; or, in other words, till all the particles of sulphur floating in it are deposited on whatever comes in their way. If one operation have not the desired effect, the process is repeated at short intervals. In gardening, the smoke might be generated and introduced into any close vessel, by the common fumigating bellows, Read's syringe, or the bellows described by our correspondent C. P. (p. 30.), sulphur paper being introduced in the place of tobacco leaves. The whitening effect of the sulphureous vapour is a mere mechanical result, and not a chemical combination, as in the case of bleaching with muriatic acid or alkali. In the latter case the colouring matter is neutralised, and afterwards washed out; in the former it is merely covered with a layer of very fine yellowish white particles, which, being insoluble in water, are not easily removed or altered by atmospheric changes.

It is very likely that there are still a number of mysteries in the management of fruits for commercial or competitory display with which we are unacquainted: whoever can supply us with any information on this subject is earnestly requested to do so; because, according to the theory which we entertain of knowledge, the gardening world ought to know every thing that is done, or can be done, with gardening productions. Storch, in his *Description of St. Petersburg* (Lond. 8vo.), mentions some of the tricks that are performed on culinary vegetables and fruits in that city, but they are in general too gross, and involve too much manipulation, for being practised in Britain. For example, after asparagus has been used at the tables of the great, the returned ends of the shoots are sold by the cook to itinerating green-grocers, who carve a new terminating bud, colour it, and add a bloom, in imitation of nature, make up the ends so prepared in bundles, with a few fresh stalks outside, and sell the whole as genuine asparagus.

Perhaps we shall be blamed for making known the mode of effecting those deceptions, as we have been for printing that part of "Agronome's" letter (Vol. II. p. 165.), in which he states that a market-gardener killed certain ash trees, by laying a quantity of salt at their roots. But this, though unquestionably a well meant, is yet, as we conceive, a very mistaken view of the duties of the editor of a work which has for its object the progress of science and of mind. Nothing worth trying for will ultimately be gained by concealing the truth. If a matter of fact is to be kept back, because by an evil disposed person it may be applied to bad purposes, to what will such a doctrine lead? At what point must an editor cease to be honest? Is it not by bringing together all the facts belonging to any subject, that the mind is enabled to compare and judge of the nature of that subject? But it will be said, apply this doctrine to a particular case, and suppose a gardener who wished secretly to destroy his neighbour's trees, but did not know till after he had read "Agronome's" letter that he might do so by salt, does so; would it not have been better that he had remained ignorant? To which we answer, better for him and better for the proprietor of the killed trees, but not better for the public: for the cause of the death of other trees, by salt in the hands of a malicious person, may be detected; others may be taught to avoid laying salt near the roots of plants, for instance, near box, in salting gravel walks to destroy moss and weeds; and, when the destruction of trees or other plants is a legitimate object, salt may in some cases be used for that purpose more conveniently than any thing else. The accidental evils that may result from the diffusion of knowledge, are not to be counteracted by stopping short of the whole truth, but by counter-truths; by calling in other kinds of knowledge; by opening more clearly to view the various and certain consequences which result from all actions, according to their natures. If a man is in such a state of knowledge and freedom of action as to be able to commit the greatest crimes with seeming impunity, the same state of knowledge will remind him that there is such a thing as reputation, and that the laws of society are regular and certain in their course. The more a man's knowledge is increased, the greater will be his sympathies and enjoyments with every thing around him, and the greater his reluctance to disturb the system of harmony in which he feels himself placed.

But, to return to the subject of decorating fruits, we shall be happy to hear all that has been done, or can be said on the subject. — *Cond.*

PART II.

REVIEWS.

ART. I. *Transactions of the Horticultural Society of London.*
Vol. VII. Part I.

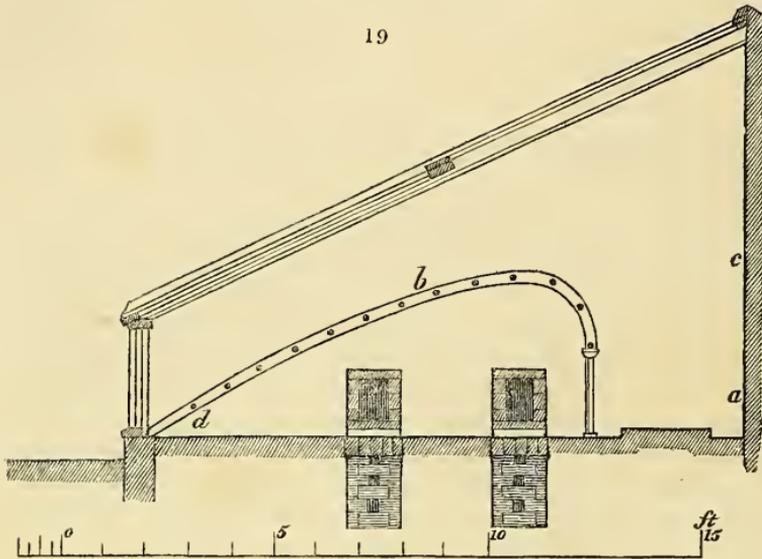
THE present Part of these *Transactions* contains twenty-three papers, fourteen of which are by officers or servants of the Society, and the remaining nine by practical British gardeners. The plates are *Hóya Pótsii*, a plant very much resembling the common *Hóya carnòsa*; a Meteorological Diagram, three Pears, and the Plan of a Vinery. There are besides several wood-cuts, which we consider to be an improvement in the getting up of the work, convinced as we are that science would gain by the substitution of local cuts for isolated engravings on copper, in every case in which ornament, or aerial perspective, is not the chief object.

1. *Observations on the Growth of early and late Grapes under Glass.*
In a Letter to the Secretary. By Mr. James Acon, C.M.H.S.
Gardener to the Earl of Surrey, F.H.S. at Worksop Manor.

Mr. Acon provides a regular supply of grapes in a perfect state for the table, throughout the year, in the following manner: — “The late house crop lasts from the middle of January to the end of March; this is succeeded by the first crop in the early house, which carries on the supply into May, and it is continued by the grapes on the rafters in the same house, until the pine-stoves, which are forced early in January and February, produce their crops. These keep in bearing through the summer, when a vinery, which I begin to force about the end of March, furnishes the supply till the late house fruit is ready in January. This completes the succession.”

Early crops of grapes are generally grown under the roof near the glass, as in the houses of Shepherd, Andrews, and the forcing-gardens of the king, about London; or against the back wall of small houses with front glass nearly perpendicular, as in the forcing-houses of the Dutch. Both these

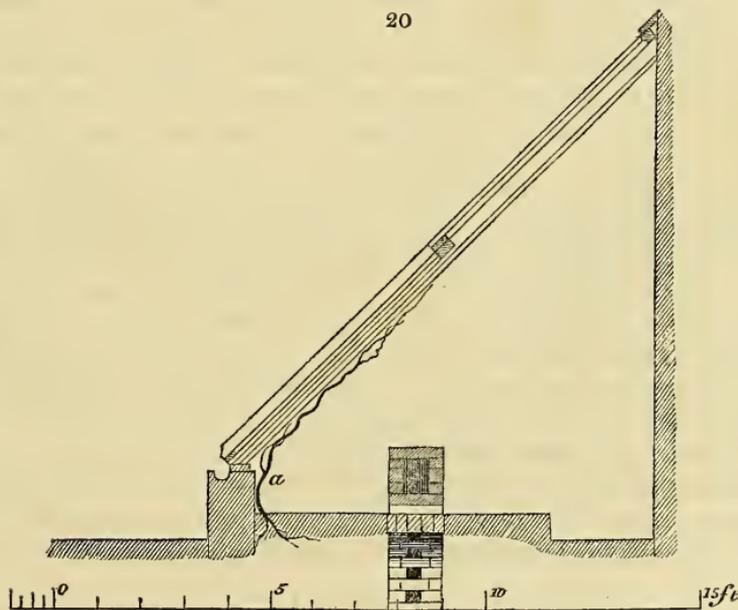
methods Mr. Acon considers objectionable : the first, because the house is rendered too dark, and the fruit liable to be injured by cold air blowing through the interstices of the glass in stormy weather ; and the second, because the plants are frequently scorched by the heat of the flues. Mr. Acon adopts a wide flat-roofed house (*fig. 19.*), plants the vines within the



house at the back and front (*a d*), trains them on an arched trellis, with horizontal wires one foot apart (*b*), and on the back wall (*c*). He commences forcing on the 1st of September, and the fruit begins to be ripened about the first week in March, and continues to be gathered till the middle of May. About six weeks after the forcing has commenced, vines are introduced from the front, and trained under the rafters, which yield a succession crop, from the early part of May till late in June, when the vines in the pine-stoves produce their crops. By the form of the trellis, which admits of the use of the whole of the back wall, and of at least one shoot on each rafter, this house presents the greatest possible surface for the growth of the vines, consistent with sufficient light. Mr. Acon has proved by experiment that vines will ripen their fruit a fortnight sooner on the trellis, than on the rafters. Though of the utmost importance to have the roots of the vines planted within the house, and secure from external exposure, Mr. Acon does not by any means desire to have the mould in which they grow heated by the fire. "Few plants," he states, "will thrive well, if the earth in which their roots are placed is warmed by any other means than that of the

atmosphere." In pruning, as little wood is left to be employed as possible; no joint is without a bunch, and, at the joint above the bunch, the shoot is stopped. "When the crop is over, and the wood perfectly ripe, the branches should be laid near the ground, and shaded till the recommencement of the forcing. By this practice, they will be found to have accumulated excitability. The shade will have some affinity to the gloom of winter, which never fails to give vegetation increased energy. I remember once to have placed some vines in pots in the lobby of an ice-house; these being replaced in the stove broke their eyes in September, and had ripe fruit very early in the spring following, though they were but slowly forced. . . . Plants that have been forced early will always have an inclination to bud at the accustomed time, whilst it is difficult to move those which have never been habituated to forward excitement; but the habit once induced will continue, and will enable the cultivator to procure fruit at any time."

The late vinery at Worksop Manor is narrower, and has a steeper roof than the other. (*fig. 20.*) Its flues are on arches,



as in the early vinery, and the vines are planted within the house (*a*), and trained on a trellis near the glass. The house is shut up about the middle or end of May, as soon as the bunches make their appearance, and till they are out of blossom the air is kept very warm. "This is of more importance

than is generally imagined; the wood which has to bring the future crop will be all made during this period. In a good heat it will be found to grow more compact, and to receive a form better calculated to produce and ripen fruit under the cold atmosphere to which it is afterwards exposed. If the house be kept too cool at the beginning, the wood will be soft and long jointed, and therefore subsequently barren. Those who attempt to grow late grapes must pay serious attention to this circumstance, the failures of many may be attributed to the neglect of it."

The fruit should be perfectly coloured at the approach of the dark season, after which, a more passive vegetation is maintained, during which the bunches will remain for months without any apparent alteration. The Muscat of Alexandria, St. Peter's, and Black Damascus are the sorts best adapted for late crops; "all the other kinds wither prematurely." The gathering of this crop generally commences in the middle of January, and continues till the early house comes into bearing in March.

In pruning here, as in the early house, no wood is suffered to remain without fruit. If the plants bleed at the spring dressing, keeping the house warmer, for a week, will compress the wood as effectually as a long winter. When the fruit is gathered, the house is unroofed, to restore the elastic power of the wood, which never fails to be lost where vines have been exposed for a considerable time to a dry atmosphere. In general, exposure of vines for a few weeks to frost promotes their breaking vigorously and uniformly; when the frost has been so severe as to condense the sap, and compress the wood to a great degree, its elasticity may be restored by washing the branches frequently in cold water in a low temperature. Mr. Acon thanks Mr. Sabine for the encomiums passed on the garden under his care, when visited by Mr. Sabine in October, 1826; we visited the same garden about the same time, and bear testimony to the order in which it was kept, and the excellent state of the crops. A pressure of other matter has hitherto prevented us from printing the notes which we made on that journey, already alluded to. (*Gard. Mag.* vol. ii. p. 6.)

2 *On the Varieties of Cardoon, and the Methods of cultivating them.*
By Mr. Andrew Mathews, A.L.S.

The cardoon is not very generally cultivated in English gardens, probably, as Mr. Mathews conjectures, because "it requires more skill in the cooking than is commonly applied to it." It is a good deal in use in the South of France, as

about Tours, where it is used in soups and stews, and sometimes in salads. The sorts described are the common, Spanish, Cardoon of Tours, and Red Cardoon. The Spanish Mr. Mathews considers the best, and the culture of any of the sorts he states to be particularly easy. Sow about the middle of April, in deep, light, not over rich soil, in trenches about six inches deep by twelve inches wide, and four feet distant centre from centre. Drop three or four seeds together at intervals of eighteen inches, and, when they come up, thin them out to single plants. Water frequently during summer; and, in a dry day about the end of October, commence the operation of blanching, by tying up the leaves with twisted hay bands, after which earth may or may not be heaped round them in the manner of landing celery, according as they are to be used early or during winter. The common practice is to tie slightly with matting in the beginning of October, and earth up once a fortnight, till the plants are sufficiently covered, in the manner of celery. The French mould up the bottom of the plant a little, then tie up the leaves with packthread, and thatch them with long clean straw, made fast with strong matting, or small ropes. The hay band method is the best.

Cardoons may be transplanted in the manner of celery, but they are found to do much better when sown where they are to remain. In France the flowers are gathered and dried in the shade, and used instead of rennet to coagulate milk.

3. *Account and Description of the several Plants belonging to the Genus Hóya, which are cultivated in the Garden of the Horticultural Society at Chiswick.* By Mr. James Traill, Under-Gardener in the Ornamental Experimental Department.

Hóya carnòsa, *crassifòlia*, *pállida*, *Pótsii*, and *trinérvis* are described; and the fact noticed that the flowers of the first species form no particular attraction for wasps, or any other insects which find their way into hot-houses, as Mr. Maher (*Hort. Trans.* vol. i.) thought he had observed in 1815. Mr. Knight, the president, has, we believe, made a similar mistake as to the berries of the yew tree attracting wasps. Nothing can be easier than the culture of *Hóyas* in vegetable mould and lime rubbish, with little water, and the heat of a stove. As they make few roots, they seldom require shifting. They may be propagated by cuttings, or the leaves immersed in silver sand nearly half their length will produce roots from the base of the foot-stalk, and after some time a shoot from the same point.

4. *On acclimatising Plants at Biel, in East Lothian.* By Mr. John Street, Gardener to the Honourable Mrs. Hamilton Nesbitt.

During the ten years which Mr. Street has been flower-gardener at Biel, he has planted out a great many greenhouse plants, and found numbers of them stand the winter much better than might be expected. After a careful perusal of what he has given as his experience, in this paper and in another in the *Memoirs of the Caledonian Horticultural Society*, the general conclusions which we draw, are, — 1st, That a poor soil kept dry, and a situation exposed on all sides in summer, but sheltered on the north and east in winter, are the most favourable for what is called acclimatising plants: 2d, That plants firmly rooted in the free soil are much less liable to injury from frost than plants recently planted out, or with their roots confined to pots: 3d, That what is called acclimatising appears to be nothing more than increasing the hardiness of the individual, not altering the nature of the species: 4th, That it is not clear that any thing has been actually gained in the way of acclimatising, by raising successive generations of plants from seeds.

The following list includes the greater number of plants tried by Mr. Street:—

Ononis Natrix, *Hypéricum baleáricum*, *Teucrium fruticosum*, *Convólulus Cneòrum*, *Mesembryáthemum uncinátum*, sunk in the open border in pots, their roots through the bottom of the pots into the free soil, and their surface covered with a little sandy gravel, stood the winter of 1825.

Lycium àfrum, on a south wall covered with two mats thick in winter, flowers freely, and produces seeds.

Lavatera tríloba, planted over a drain against a south wall, flowers freely and produces abundance of seeds.

Camphorósmá monspeliaca thrives well and flowers freely without protection. *Lýchnis coronàta* and *Gnaphàlium Stœchas* thrive remarkably well and flower freely. *Stàchys coccínea* and *Teucrium Màrum*, in a place with a dry bottom, endure the winter without protection and flower freely. *Cálla æthiópica*, in the open border, has produced two ounces of ripe seeds; and a seedling from one of these seeds has endured three winters, with only some decayed tanner's bark put over its roots. [The same plant has stood several winters, in a pond in the Princess Augusta's garden at Frogmore. When we saw it on the 29th of July last, it was in great vigour, and showing several blossoms; and Mr. Ingram (p. 13.) informed us that it flowers in that situation during

three or four months of every summer.] *Hypéricum ægyptiacum*, in the open border in its pot, with the roots through, endures the winter, and flowers a long time. *Commelina tuberosa*, from Mexico, stood two winters in the open border, is very strong, and flowers freely. *Mimulus glutinosus*, in its pot, under a south wall in a poor dry place, endured four winters without covering, is six feet high, flowered freely, and ripened seeds. *Marrubium Pseudo-dictamnus*, under a low south wall, in its pot, in poor dry earth, endures the winter, and flowers freely. *Disandra prostrata* has endured three winters, and produced seeds. A single *Oleander*, under a south wall, has endured one winter without protection. *Pittosporum Tobira* has lived several winters in an open border, at about eight or nine feet distant from a high wall with a west aspect. Broad-leaved myrtles cover a terrace wall thirty-six feet long, along with some *Lycium àfrum*; the soil a fine sandy loam of ten or twelve inches on a clayey bottom. In winter the roots are covered with moss, and the stems and branches against the wall with two good mats thick. These myrtles flower every year, and in dry summers as plentifully as hawthorns, and yield ripe seeds. [If some of these were carried away by the birds and dropped in a warm coppice, they might spring up and live under the protection of whins, hollies, or hazels, for many years; and some stranger herbalist, bent on discovering something, might record the myrtle as a native of Scotland.] Several plants of *Cánna índica* have been planted in the open borders every year; they rise near five feet high, blossom freely, and ripen seeds. *Jasminum revolutum*, *Teucrium flavum*, *Coronilla valentina* and *glauca*, are quite hardy, as are *Senecio lanceus*, and *Medicago arborea*.

In Mr. Street's paper in the *Caledonian Horticultural Society's Memoirs*, he states that the following species stood the winter at Biel, in borders or against walls:—*Alóysia citriodora* (formerly *Verbena triphylla*), killed annually to the ground, but shoots up again. *Cneorum tricoccum*, in a warm border. *Iris chinensis*, with the protection of a hand-glass. *Buddlèja globosa*, under an east wall. *Heliotropium peruvianum*, under a south wall; and *Anchusa itálica*, in the open border. *Convólulus althæoides* and *Cneorum*, under a south wall. *Lonicera impléxa* and *flava*, *Linum taúricum*, and *Agapánthus umbellatus* stood without covering. “*Sansevièra cárnea*, from China, survived the severest winters, and flowered freely in the summer. *Phórmium ténax*, from New Zealand, bore the winter, but did not produce flowers. *Veltheimia média*, from the Cape of Good Hope, stood in the open

ground, at a distance from the wall. *Alstrœmèria pelegrina*, native of Peru, in an open border, in a deep rich soil, was much more luxuriant than when grown in pots. *Èrica mediterrànea* survived many winters without covering, in a border in front of a south wall. *Edwàrdsia microphýlla*, a plant of New Zealand, lived in a similar situation, but without flowering. *Mèlia Azedràrach*, from the Levant, lived through the winter. *Calycánthus præ'cox* (now *Chimonánthus frà-grans*), from Japan, stood against a south wall, without any covering. *Rùbus rosafòlius*, from the Mauritius, planted on the open border, under a south wall, flourished. *Cístus algarvénsis*, *C. villòsus*, *C. mutábilis*, *C. Lèdon*, and *C. ladaníferus*, all natives of the south of Europe, were induced to stand through the winters, in dry sheltered spots. *Teucrium frùticans*, from the south of Europe, lived in front of a south wall. *Ibèris semperflorens*, from Sicily, lived in a warm south border, without covering. *Hibíscus syriacus* stood the winters tolerably. *Hypéricum monogýnum*, from China, and *Còris*, from the south of Europe, lived, the first in an exposed, the latter in a sheltered situation. *Passiflòra cærùlea* grew against a south wall, without covering, and flowered in the summer. *Cuprèssus lusitànica* lived and produced seeds against a south wall. *Smilax áspera*, of the south of Europe, grew under a south wall several years. *Acàcia armàta*, native of New Holland, lived over the winter, near a south wall, and produced ripe seeds.

“The following plants have ripened seeds in the open air; the produce of those seeds, some through successive generations, grew all in the open border, several of them being self-sown:—*Lopèzia racemòsa*, from Mexico. *Verónica decussàta*, a shrub from the Falkland Islands. *Calceolària pinnàta*, native of Peru. *Pardánthus chinénsis*, a bulbous plant. *Màrica califòrnica*. *Persicària orientàlis*. *Podalýria virgínica*. *Mesembryánthemum glàbrum* and *pinnatifidum*, both from the Cape of Good Hope. *Lavándula dentàta*, a shrub from the South of Europe. *Stàchys coccénea*, from Chile. *Dracocéphalum canariénse* (Balm of Gilead), *Célsia crètica*. *Alonsòa urticifòlia*, native of Peru. *Eròdium hymenòdes*, native of Barbary. *Gerànium anemonefòlium*, from Madeira. *Medicàgo arbòrea*, a shrub from Italy. *Cinerària cruénta*, *C. populifòlia*, and *C. lanàta*, all from the Canary Islands. *Tagètes lùcida*, native of Mexico. *Momórdica Elatèrium*, from the south of Europe.”

Several annuals, usually raised on hot-beds, have naturalised themselves by shedding their seeds in the open air in warm situations.

5. *Upon the Culture of Celery.* By T. A. Knight, Esq. F.R.S. &c. Pres.

What the Council could discover in this paper to render it worthy of publication, we are utterly at a loss to know. Perhaps it was quite enough for them that it was written by the President. All that we can gather from it is that Mr. Knight "has, during several seasons, supplied" his "celery plants much more copiously with water than is usually done, and always with the best effects." There is, indeed, as usual, a few words liable to be construed into a reflection on the skill and conduct of gardeners, which, we must take the liberty of stating, come with a particularly bad grace from Mr. Knight, after his signal failure in attempting to surpass British gardeners in the culture of the pine-apple. With the highest respect for Mr. Knight, justice to the practical gardener will not permit us to forget his premature vaunting on the subject mentioned, his indirect recommendation of illiterate gardeners, and the injury which his papers on the pine-apple might have done to the practical man. We would wish the Council of the Horticultural Society to recollect these things also, and to be more careful in future as to what they publish.

The services which Mr. Knight is calculated to render horticulture, are not of that kind which ought to lead him into rivalry with the practical gardener. It is not necessary that a curious and philosophic experimenter should be able to succeed in every thing which he attempts. Mr. Knight may lead others to grow good crops, without being able to grow any one good crop himself. He has already rendered the greatest services to vegetable culture, by his physiological discoveries, and we only regret that he should seem to wish to add to his own merits, by detracting from those of his more humble brethren, who are very willing to benefit by his writings, but who, we fear, are not very likely ever to gain any thing by his example.

6. *Report upon the new or rare Plants which flowered in the Garden of the Horticultural Society at Chiswick, between March, 1825, and March, 1826. Part I. Tender Plants.* By Mr. John Lindley, F.L.S. Garden Assistant Secretary.

Trees or Shrubs.—*Mimòsa latispinòsa*. An elegant bush from three to four feet high, the stem and petioles clothed with white aculei. From the Isle of France in 1822. Stove; cuttings or seeds; loam, peat, and sand. — *Passiflòra obscùra*. A small inconspicuous species, from seeds from the N.E. coast of South America, by Mr. George Don, in 1823.—*Ixòra ròsea*. By far

the most beautiful of all the *Ixoras* in our gardens. Grows freely, with perfectly good foliage, and abundance of fine clusters of pink flowers. From hilly tracts on the borders of Bengal, in 1824, by the East India Company. Cuttings under a glass in a warm frame; soil for the plants, light sandy loam and peat.—*Ixora undulata*. A branched shrub about four feet high, with thin, wavy, smooth, ovate leaves, and white flowers. Culture as in last species.—*Diomedea argentea*. Half shrubby, from two to three feet high, neat, aromatic when rubbed. Light sandy loam, and cuttings.—*Camellia euryoides*. “The grafted part of a camellia, brought from China in 1822 by Mr. John Potts, having perished, the stock sprang up, and proved to be this species, which had been before unknown to botanists. It forms a diffuse bushy plant, with hairy branches, obovate, acuminate, serrated leaves, and small, neat, white flowers, never expanding fully, but in size resembling those of a *Thea*. It is inferior in beauty to any of the previously known camellias, but must be considered a subject of much interest to the cultivator, from its being one of the means employed by the Chinese for propagating the ornamental species of the genus.”

Solanum dealbatum, *Lind. saponaceum*, *Hook.* A neat downy under-shrub, from the Cordilleras, of the easiest culture.—*Alstonia venenata*. A smooth shrub, with whorled leaves, and terminal spikes of white flowers, thriving in the stove in sandy peat and loam, and readily propagated by cuttings.—*Wrightia tinctoria*. A bushy stove plant, occasionally throwing up vigorous shoots, which twine round any thing near them; leaves lanceolate, flowers white. Calcutta, in 1822, by the late Mr. John Potts. Light sandy loam, with a little peat, and propagated from cuttings, though with difficulty.—*Tabernæmontana gratissima*. A lactescent stove shrub from Bengal, of delicious fragrance, with yellowish flowers in September, and propagated by cuttings. Soil, loam, peat, and sand, in equal quantities.—*Sarcocéphalus esculentus* (*Gard. Mag.* vol. i. p. 164.) Noticed for the sake of correcting an error in a former volume of the *Transactions*, which stated the flowers to be pink, instead of a pale straw colour.—*Bignonia pallida*. A small tree, with single leaves and lilac flowers. Soil, light sandy loam; cuttings in pure silver sand, under a bell-glass.—*Tephrosia chinensis*. A small tree with a greyish warted bark, but the fruit being unknown, the genus to which it belongs cannot with accuracy be determined. Green-house; any light sandy soil, and propagated by cuttings, though with considerable difficulty.—*Calyptanthus caryophyllifolia*. A small tree with virgate branches and compressed twigs. From Sumatra, in

1822, by Sir T. S. Raffles. Easy culture, and cuttings in silver sand, under a hand-glass in a warm frame.

Herbaceous Plants.—*Hellènia abnormis*. Of little beauty, and the easiest culture.—*Gesnèria Douglàzii*. Beautiful, with a fleshy tuberous root. From Rio Janeiro, by Mr. David Douglas, in 1825. “It flowers in the stove during almost all the summer, requires to be cultivated in a moderately light sandy soil, and is propagated with some difficulty by the leaves.”—*Sinningia Hellèri*. Curious; from Rio Janeiro, by Mr. Douglas.—*Calathèa flavescens*. Pretty, little, stemless, broad leaves, finely nerved across, and yellow flowers in sessile heads. Stove, loamy soil, division. Worth wishing for.—*Commelina cucullata*. A creeping annual, with cæsious downy leaves, and small pale blue flowers in October.—*Cleòme ròsea*. A beautiful tender annual, from Rio Janeiro, with bright rose-coloured flowers from May to October, on branches proceeding from a fine, upright, central stem, giving the whole plant the air of a vegetable candelabrum. Culture like the balsam. Worth asking for.—*Gynandropsis pulchélla*. A pretty little tender annual, from Maranham.—*Aspidistra punctata*. Obscure, but curious. Growing freely in peat and loam, and propagated by division of the roots.

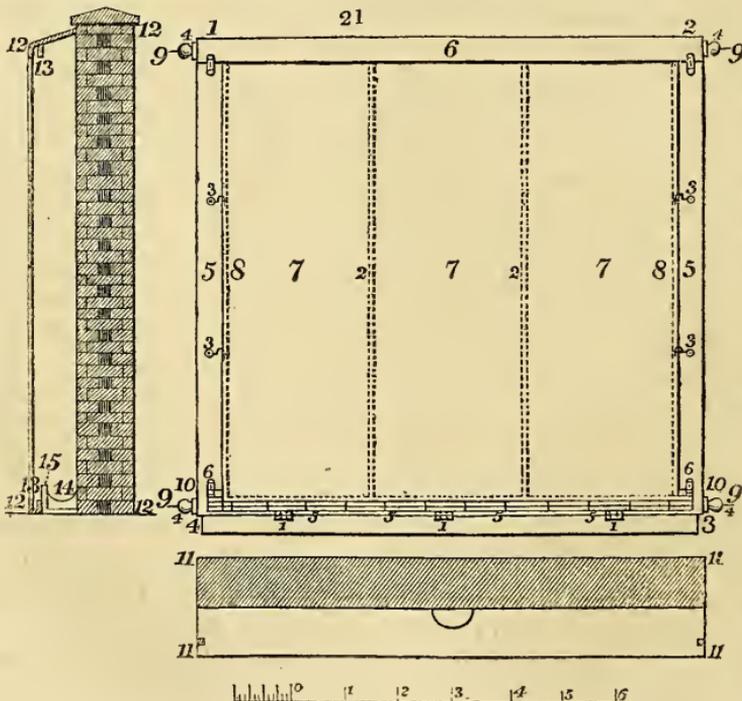
Orchideous Plants.—*Rodriguezia planifolia*. Slightly furrowed bulbs, in clusters, with spreading linear leaves, and greenish yellow flowers. “A tender stove epiphyte, preserved with difficulty by being planted in rotten wood, or decayed vegetable matter.”—*Liparis foliosa*. A tender stove epiphyte, with channelled leaves.—*Cœlogyne fimbriata*. A pretty little creeping plant, from China, with yellow flowers.—*Brassavola nodosa*. An epiphyte, with dull green leaves, tinged with purple, and snow-white flowers. Grown in decayed wood or bark, in which a little moss may be mixed.—*Dendrobium crumenatum*. A branchy epiphyte, with pure delicate white, highly fragrant, but quickly perishable blossoms. Cultivated readily by being attached to a stump of decaying wood, and propagated by division of the branches.—*Oncidium pùbes*. Dwarf, dumpy, little green bulbs, with solitary leaves, and yellow olive-green flowers. Cultivated with some difficulty in decayed wood or leaf mould.

Bulbous Plants.—*Brodiaea ixioïdes*. Curious, with blue flowers. Cool frame, out of the reach of frost.—*Gillièsia graminea*. “From its want of beauty, it is out of the pale of horticulture, and can only be considered as a botanical curiosity.”—*Griffinia hyacinthina*. A beautiful lily, flowering freely in October and November in the stove, in light, rich, sandy

loam.—*Uropétalon longifolium*. Dull bluish green flowers, with no pretensions to beauty.—*Phycélla corusca*. An extremely handsome plant, very like *Amarýllis ígnea* (now *Phycélla ígnea*); it throws up from the centre of the narrow leaves “a stout scape about a foot in height, which is crowned by a candelabrum-like umbel of long tubular flowers of the most vivid crimson.” Light sandy loam, and offsets. Worth having.

7. *Account of a protecting Frame for Fruit Trees on Walls.* By Mr. John Dick, Gardener to the Right Honourable William Trotter, Lord Provost of Edinburgh, at Ballindean, in Perthshire.

The object is to protect wall fruit, when ripe, from wasps, flies, and birds; and the same frame may be put over the trees in spring, to protect the blossoms from the frost. The construction at first sight appears rather intricate, but it will be understood by the following description, premising that the screen is of thin semi-transparent canvass, about thirty-six inches broad, made of yarn spun from the best flax, and sold in Dundee at 5*d.* per yard. The edges and seams of the screen are bound with tape, which costs $\frac{1}{2}$ *d.* per yard. The screen runs on two wires, placed at top and bottom of the frame, and kept tight by screws at the extremities.



A view, plan, and section of this frame (*fig. 21.*) are given in the *Horticultural Transactions*, and thus described:—

1 2 3 4 are the four corners of the wooden frame, when joined together and fixed upon the wall.

5 5 are wooden facings fixed on the front edge of the sides of the frame, for the reception of the screen within them.

6, 1¹ 1 are similar facings on the top and bottom, but movable on hinges, shown at 1¹ 1, for the convenience of putting the rings of the screen upon the iron wires, 9 9 9 9.

7 7 7 7 are the breadths of the screen, strengthened by slips of tape 2 2 sewed upon the seams.

8 8 are two upright pieces of wood (to which the screen is nailed), which slide under the facings 5 5, and are secured by the hasps 3 3 3 3.

9 9 9 9 are the iron wires on which the screen slides by means of rings.

4 4 4 4 are thumb-screws for tightening the wires and preventing them from relaxing.

5 5 5 5 are the rings upon the bottom wire. When the screen is adjusted, the lower facing 1 1 1 1 is folded up to 10 10, and fastened with square buttons 6 6.

11 11 11 11, the plan of the wall and the bottom of the frame, with a semicircular hole cut in the latter, sufficiently large to receive the stem of the tree, and thus to permit the frame being fixed close to the wall.

12 12 12 12, the section of a side of the frame and of the wall.

13 13 are the top and bottom stops to keep the screw in its place.

14 is a piece of cloth loosely suspended between the wall and the upright stake 15, to receive the fruit that falls off the tree. The stake 15 is repeated at convenient distances in the frame.

Mr. Dick's frame answered perfectly last summer in the garden of the Horticultural Society.

ART. II. *Memoirs of the Caledonian Horticultural Society.* Part I. of Vol. IV. Edin. 8vo. pp. 272. 5 Plates and Wood-cuts. 8s.

THE Transactions of this Society have hitherto been published in numbers; the present Part includes Numbers xiii and xiv., and is more respectably got up than the preceding volumes. The first hundred pages are occupied by lists of the Society, accounts of premiums awarded from June, 1819, to October, 1826, and a copy of the charter of incorporation of the Society granted in October, 1824. The principal subjects for which premiums were given for 1824, and to the present time, will be found in the proper department in the Gardener's Magazine. "Documents regarding the Experimental Garden, with an engraved plan," is the next paper, for the essence of which we refer to *Gard. Mag.* vol. i. p. 90. This garden is to be formed and maintained, "1. By subscriptions for shares of twenty guineas each. 2. By charging every

ordinary member, not being a shareholder, with one guinea yearly towards the funds of the garden. 3. By charging an admission fee of two guineas. 4. By voluntary subscriptions." Besides home-subscribers and shareholders, it is gratifying to see nearly forty shareholders resident in India, several of whom have taken two shares each. Such is the love of the soil natal, and the hope of one day returning to it.

A man born in London or Paris becomes attached to the forms and usages of civilised society, and, in the after period of his life, feels himself at home in every large city; born any where else, his passions and affections grow up among particular kinds of manners and scenery, to which his heart for ever clings; and from which he only separates in the hope of one day returning with redoubled capacities of enjoyment. It was wise in the Caledonian Horticultural Society to turn the exercise of these feelings to account.

The first memoir is,

1. *Account of a new Mode of grafting Camellias.* By George Dunbar, Esq. Rose Park. 1 Copperplate.

Described in *Gard. Mag.* (vol. ii. p. 33.) as practised by Mr. Pike. April, September, and October are the best periods for performing the operation, because at these two periods camellias begin to make new growths; but April is much the best season, as the shoots are then more vigorous.

2. *Remarks on the French Methods of cultivating the Peach Tree.* By Mr. John Smith, formerly of Hopetoun House Garden.

The French practice differs from ours in the following particulars:—

1. In some of those subordinate operations which necessarily find a place in every system of management. 2. In the form of the tree and the reproduction of bearing branches.

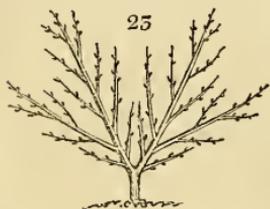
1. The incessant efforts of a tree trained against a wall to regain its natural position have given rise to various operations, such as nailing, tying, pruning, disbudding, &c.; and the French have had recourse to various modifications of these, which are either neglected, or partially used in this country. For example, the growth of spongy foreright shoots and back shoots is prevented by picking out the buds which produce them; an operation known as *ébourgeonnement à sec*. To equalise the strength of young shoots, the points are pinched out of those which are the most vigorous. "Before these can again push out, they must have become to a certain degree ligneous, and have formed perfect wood-buds at their points.

While this is taking place, the un mutilated weaker shoot acquires the necessary strength." Branches of wall trees which are left loose, and capable of being moved by wind, grow more vigorously than such as are attached to the wall; hence the obvious rule to nail or tie the strongest shoots first. An upright shoot grows more freely than a bent one; hence to reduce two unequal shoots to an equality, elevate the weaker and depress the stronger. On the same principle the weaker shoots are left on the upper side of an inclined branch, and the stronger shoots on the under side. "Every experienced gardener knows that a peach tree, without regularity, can neither be productive nor long-lived," and that the operations mentioned are of "the utmost moment, since they enable us to maintain the equilibrium of the sap, — to husband the resources of the tree, and obviate the necessity of repeated amputation, of which the peach tree is extremely impatient."

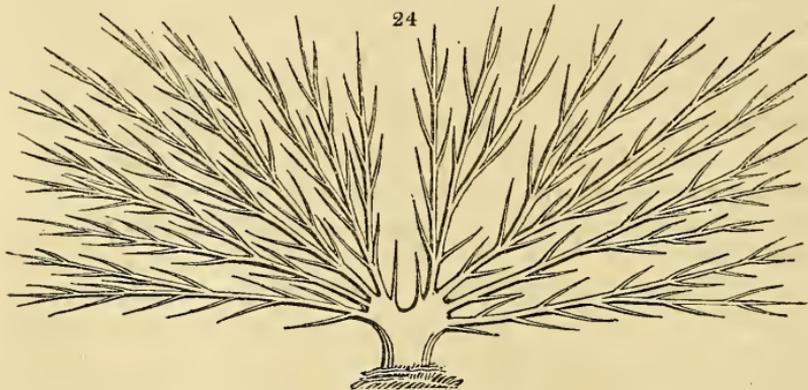
2. The peach tree is trained by the French in the open fan manner, which is considered the most effective in suppressing the direct channel of the sap in facilitating the reproduction of branches. They divide the tree into two equal portions, which they spread out diagonally, leaving the centre completely open; a practice which enables the cultivator to accommodate the tree to low walls, and which contributes much to ease, freedom, and regularity, in the operations of pruning and training. This is the practice at Montreuil, and appears to have been invented about the beginning of last century, though scarcely known till brought into notice by the Abbé Roger Schabol in 1755, the most eminent horticulturist of his time. (*Encyc. of Gard.* p. 1118. A. D. 1767.) According to this principle, the fundamental form of the tree is that of the letter V; the two principal or mother branches (*mère-branches*) being attached to the wall at an angle of 45°. "The other branches are all situated on these principal limbs, and diverge from them at angles varying with the age and vigour of the tree."

Count Lelieur, in his *Pomone Française*, has described a mode of training which he calls Dumoutier's (*à la Dumoutier*), from the name of its inventor. It resembles that of Montreuil, but differs from it by the entire renovation of the bearing shoots every year, which, being cut down almost to their insertion, give a pinnated appearance to the branches. In this particular it coincides with Seymour's mode of pruning. (*Gard. Mag.* vol. i. p. 128., and vol. ii. p. 295.) It is observed by Mr. Smith, that a near approach to Lelieur's directions has been made by Harrison (*Treatise on Fruit Trees*), in his excellent directions for the treatment of peach trees.

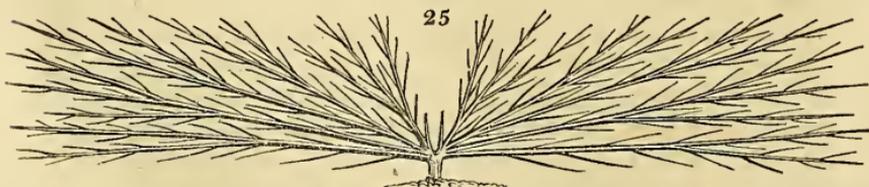
The common practice in France is to plant a stock of the almond or plum where the future tree is destined to remain. In the summer after planting, two buds, nearly opposite each other, are inserted in the stock: these produce the future mother branches, which are trained nearly in a vertical position (*fig. 22.*), and at the first pruning are cut down to about fifteen or eighteen inches in length, and the buds, both before and behind, disbudded. The second year's growth produces side branches, and at the end of the third summer these have laterals. (*fig. 23.*) At the end



of nine years, the appearance of a tree trained *à la Dumoutier* is not unlike that of one of Seymour's trees, with this difference, that the branches proceed from two separate arms, instead of from a central trunk. It is proper to observe, however, that the engraving given in the *Caledonian Memoirs* (*fig. 24.*) bears so little relation to truth, that it cannot be considered of much use. It



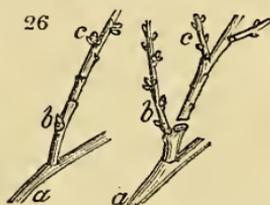
is said to be taken "from a tree which in nine years covered a space of wall forty-two feet long and eight feet high." If the length of this figure (*fig. 24.*) be taken at forty-two feet, its height will be nearer twenty feet than eight feet. The tree



described by Lelieur, drawn to a scale (as in *fig. 25.*), assumes a very different appearance from the representation given by

the Caledonian Horticultural Society; and we may be permitted to observe, that this figure, with some others in their *Memoirs*, are not very creditable to their pictorial taste. We may add, *en passant*, that there can be no reason worth listening to for giving copperplate engravings in such a volume as that now before us. The map of the garden might have been reduced, and given with the references on two opposite pages. We repeat (p. 43.) that, where engravings are not to be coloured, and where aerial perspective is not essential to illustration, there is not one case in a hundred in which wood-cuts in the body of the text will not be found incomparably superior to separated figures or plans.

In *Dumoutier's method*, the pruning for fruit commences in the third year, and is thus performed: — The lateral shoots are cut back to a single eye, together with all other shoots which have no fruit buds, and at the same time are feeble. When a shoot promises blossom, it is generally at some distance from the point of insertion into the old wood, and the intermediate space is covered by wood buds. All the latter, therefore, which are between the old wood (*fig. 26. a*) and the blossom (*c*), except the lowest (*b*), are carefully removed by *ébourgeonnement*. This never fails to produce a shoot, the growth of which is favoured by destroying the useless spray above the blossoms, and pinching off the points of those which are necessary to perfect the fruit. This is termed the *bourgeon de remplacement*. Barren shoots, when too vigorous to be cut down to their lowest eye, are treated exactly in the same manner. At the winter pruning, the branches which have borne fruit are cut down to the insertion of the replacing shoots, which, in their turn, are *ébourgeonnée*, bear fruit, and are cut out like their predecessors. In cases where the blossom has failed in setting, or the fruit in stoning, when the shoot is too weak to ripen the fruit which are upon it, or when the crop is very early, this operation may be performed at any period in the course of the summer: it is then called *reprochement à vert*. Occasionally a very promising shoot, which has already fruited, is suffered to remain. The replacing shoot is cut back to its lowest eye, or, if it is vigorous, and there is room, it is made in the usual way to produce a substitute. In either case, a new replacing shoot is obtained, to which the whole is invariably shortened at the end of the second year. The branch thus treated is styled the *branche de reserve*.”



Another variety of the Montreuil mode of pruning is denominated Sieulle's (*à la Sieulle*), from the name of its inventor. It is described in Mr. Neil's very interesting *Horticultural Tour*, and in the *Encyclopædia of Gardening*, § 4505. The characteristic of this mode is, that the mother branches are never shortened, and that the wall is filled by the side branches proceeding from these. Much of the excellence of this mode depends on the exactness of disbudding, by which the force of the tree is economised; but, after a certain age, the two mother shoots are apt to become sterile in the production of branches.

It is remarked by Mr. Smith, that we must not expect to find the pruning in French gardens, such as it appears in French books on gardening: "but it is well to have an elevated *beau idéal*." He concludes by noticing some of the defects of our own system. "The adaptation of *stocks* to soils has not been sufficiently studied in this country. In France the peach is budded on almonds in dry situations, while such as are destined for heavy loams are inserted on plums. The French seldom venture peach trees on such clayey soils as we not unfrequently do." (See *Gard. Mag.* vol. ii. p. 167. 169.)

"Instead of budding the tree on the spot on which it is to grow, or transplanting it when, in technical phrase, it is a *maiden*, that is one year old, we, in our impatience, have recourse to trees which have been trained in the nurseries. Such plants, by a vigorous application of the knife, are made to produce an abundance of showy wood, and at the same time are so circumscribed, that they do not cover half so much wall as the French trees of the same age. The vegetable energy, thus confined within a narrow space is ready to burst forth, in whatever irregular manner chance may determine.

"The principal members, which form the skeleton of the tree, are seldom sufficiently distinguished from the other branches. Taking their origin chiefly from the centre of the tree; they become too crowded, and they are further allowed to separate into an indefinite number of subdivisions. This defective arrangement, in general, and especially when combined with the foregoing circumstances, fails not to overthrow the equilibrium of the sap.

"Again, there is a want of distinction between the subordinate members and the bearing shoots. The latter, too frequently pass into the former, and then, in the confusion which follows, amputation either of larger or smaller branches becomes necessary. In consequence of these irregularities, the

reproduction of fruit branches is greatly impeded. Shoots preserved merely for fruit, or perhaps for no purpose at all, are allowed to grow on till they have attained the length of several feet; and as they frequently run parallel, within a few inches of each other, they are entirely naked, except perhaps at the points where there may be two or three twigs, often too feeble to perfect the fruit which they produce. In such cases, the blossoms can neither be vigorous or abundant.

“ It is not intended to recommend the whole of any one of the French methods above described; but I am persuaded that some benefit may be reaped from their consideration, in the way of practice, and perhaps still more in acquiring clearer notions of what peach training ought to be.”

Of all the various modes of pruning and training the peach which we have seen described in books, none appears to us so truly perfect in theory as that of Mr. Seymour; but we have never had an opportunity of seeing it put in practice on an extensive scale, and have conversed but with few gardeners who have seen Mr. Seymour's trees. The beauty of the Seymour system is its determinate form; there being a distinct reason why every side shoot, and every lateral on these shoots should be precisely where it is, and nowhere else, and this reason is of that practical kind, that it may always be determined by admeasurement. There may, however, be difficulties attending Mr. Seymour's system, of which we are not aware, and therefore we would much rather hear the opinions and experience of our readers on the subject, than give our own. A tree or two are in the course of training in this way in the Horticultural Society's garden, which may be inspected with advantage by those who will take the trouble of examining the merits of the system.

3. *On the Cultivation of certain Ornamental Plants in Flower-pots filled with Hypnum Mosses.* By Mr. John Street, C.M.H.S. Flower-Gardener at Biel.

A similar communication to that sent to the Horticultural Society of London, some account of which has already been given. (*Gard. Mag.* vol. ii. p. 419.) Moss, Mr. Street thinks, “ possesses a power, to some extent, of regulating temperature more than most kinds of earth; that is, it resists extreme heat and extreme cold, and is not apt to lose all moisture suddenly, while it discharges superfluity of moisture. It does not act like some rich earths, giving out all its virtues at first, but becomes gradually richer in decay, when a fresh supply may be added in the same space of pot room.” Mr. Street finds that

potatoes planted in moss in the same way as they usually are in litter, though on a cold clay bottom, produce as good a crop as if dung has been used. He also finds that green moss laid in a heap becomes warm in a few days, and therefore thinks it may be serviceable in forming hot-beds. "The decomposition will be very gradual, and the heat moderate and of long duration." A medal was very properly voted to Mr. Street for his experiments on this subject.

The remaining papers will be abridged in our succeeding Number.



ART. III. *Verhandlungen des Vereins zur Beforderung des Gartenbaues in den Königlich Preussischen Staaten. Transactions of the Society for the Advancement of Gardening in the Royal Prussian States. Part II. completing Vol. I. Berlin. 4to. 1824. 7 Plates.*

THIS part contains twenty-six articles, a number of which may be glanced over with advantage.

39. *Account of what passed at the Meeting held June 6. 1823.*

It was observed that the cocoa-nut palm, in its native situations in the East Indies, was frequently watered by the spray of the sea, and that the court gardener, Jacobi, had grown palm plants successfully in soil impregnated with saltpetre, as a compensation for salt water.

[The shores of the most exposed part of the island of Ceylon are skirted by a natural forest of cocoa trees, which forms a protecting screen to the vegetation of the interior.]

40. *Some Observations on the Effects of the Frost on Vegetables, during the Winter of 1822-3.* By Professor Link, of the University of Berlin.

Plants, the construction of whose stems is formed by successive rings or layers of fibre, are less liable to be destroyed by frost, than such as are formed of only one ring or layer of fibre, though the stem in the one case should be as thick as in the other. It would follow from this deduction from experience, that monocotyledonous plants should be more easily destroyed by frost than dicotyledoneæ, herbaceous plants more easily than trees, and stems and young shoots of one year's growth more easily than those of three years' growth, which is believed to be the case. When frost has destroyed part of the tree or plant, it is not considered advisable to cut it down, but to leave it to push wherever it can, and afterwards

only cut away those parts on which no leaves have been produced.

41. *On grafting under the Bark.* By Mr. Benade, Pastor and Rector of Hoyerswerda.

After many years' experience, Mr. Benade holds that grafting under the bark, whether for old trees or young, weak or strong scions, is the easiest, the most generally applicable, the surest of success, and the healthiest mode of grafting. He knows only one objection to it, which is, that the operation cannot be conveniently performed but while the sap is in motion, and when the bark will readily separate from the wood. As this is the case in trees only for a short period, it might prove inconvenient in extensive nurseries, where all the grafting was performed by one or two hands; but, in other cases, we can assert from our own observation, that slipping down the scion between the bark and the wood is the most certain mode of attaining success in this operation. What is meant by the healthiest mode of grafting, will perhaps be understood when we state that the Germans have a term applicable to the object of grafting, for which we have no corresponding expression in the English language; this is *Veredelung*, literally, ennobling: by which it appears that they consider the operation of grafting, the term for which is *Pfropfen* (to graft), not so much as a mode of propagating trees, as of ameliorating or ennobling their fruits. This seems to be the original idea of the use of grafting, the performance of the operation being supposed to ameliorate to a certain extent, independently altogether of the qualities of the stock or scion. Every reader knows that grafting in the present day is chiefly considered as a mode of propagating or perpetuating plants, though partly also of improving or modifying edible fruits.

42. *Opinion of the Committee on the foregoing Treatise.*

The Committee allow all the advantages mentioned by Mr. Benade, but that of its being "the most generally applicable." The single period in which it is applicable, they say, is when the sap is rising in spring, a period which, in the climate of Berlin, seldom lasts longer than the two last weeks of April, and the two first of May. In all other respects, this mode of grafting is as good as Mr. Benade says it is. The Committee recommend the practice of all the different modes of ennobling; viz., inarching (*copuliren*), in February, March, and April; grafting under the bark (*propfen hinter die rinde*),

in April and May; budding with the pushing-eye (*oculiren auf's treibende auge*), in June or July; budding with the sleeping-eye (*oculiren auf's schlafende auge*), in August and April.

43. *Remarks on forcing Cherries.* By Mr. Fintelmann, Gardener to the King, in the Isle of Peacocks, on the Lake at Potsdam.

1. Cherries of the Double May sort (*doppelte maikirsche*) grafted on the common wild cherry, are planted in pots in autumn in common garden soil, mixed with leaf mould. They are plunged in a sheltered situation, exposed to the sun; and, in the beginning of winter, the pots and roots are well protected from frost, by being covered with litter.

2. In the following spring, the blossom buds are broken off as soon as they appear; and, by the end of June, all the shoots which have pushed freely have their points pinched off, so as to leave not more than six buds, which buds by that operation become blossom buds.

3. The plants generally remain in pots only one year before they are forced. Before they are taken in they must at least have sustained 8° (Reaumur= 14° Fahr.) of cold, otherwise they are found to break very irregularly. The blossoms are thinned out, so much so, that where fifteen have appeared, not more than three have been allowed to expand. The construction of the house in which the forcing is commenced varies according to the season. When the trees are taken in in December and January, the glass of the roof must be much steeper than when they are not taken in till February and March.

4. Heat is communicated by flues in stoves, commencing with 46° Fahr.; the trees are frequently sprinkled with lukewarm water, and the roots, which ought to have been kept quite dry for some time before, well soaked with hot water. Mr. Fintelmann boils one half of the water, and mixes it with the other half; and he uses water of this temperature till within fourteen days of the trees coming into blossom.

5. When the buds break out into bloom, watering overhead with lukewarm water is left off, but the stems are kept moist by rubbing them two or three times a day with a wet brush. During the blooming season, the temperature is raised from 46° to 67° , every third day $2\frac{1}{4}^{\circ}$ more heat being added. Abundance of air is given, and shade during bright sunshine. In boisterous weather gauze is placed over the openings through which the air is admitted, the advantage of which Mr. Fintelmann is well assured of, after eight years'

experience. To cause the blossoms to set, the branches and spray are frequently put in motion, but care taken not to move the main stem, by which the fibrous roots might be injured.

6. When the fruit is setting and swelling, the temperature must be kept between $54\frac{1}{2}^{\circ}$ and $65\frac{3}{4}^{\circ}$.

7. When the fruit is stoning, the temperature is lowered to 59° for two or three weeks, during which period the house must be shaded in bright sunshine, and the plants watered over head once or twice a day.

8. When the stoning is completed and the fruit begins to swell, the temperature is again raised to 65° , and no more shade given, in order that the fruit may acquire a high flavour, through the operation of the sun's rays; to facilitate the action of which on the fruit, the superfluous leaves are removed. By this practice, plants begun to be forced in December commonly produce ripe cherries in February; but Mr. Fintelmann has sometimes had them even in January, though without a good taste.

9. Recent experience has taught Mr. Fintelmann that cherries will force remarkably well in sawdust, or chopped moss, mixed with some powdered unburnt lime. Plants grown one year in two years old sawdust and a little powder of lime, put into the forcing-house on the 16th of January, gave ripe fruit by end of February.

Mr. Fintelmann is considered by his countrymen as excelling in the forcing of cherries; and some of the points of his practice, such as shortening the shoots to produce blossom buds, thinning the blossoms, the previous exposure to cold, and the use of hot water, seem worthy of the imitation of the British gardener.

44. *Remarks by the Committee on an Instrument for ringing the Bark of Trees, invented by M. Gerduin, Watchmaker of Stolpe.*

The instrument is not described; but the Committee state that it will answer the end proposed. They very properly add, that ringing is a practice very liable to be abused, and that it should seldom or never be performed on stems or branches, but only on shoots of one or two years' growth which are over-luxuriant, adding the usual caution, never to make the ring wider than may be healed over the following season.

45. *Abstract of what passed at the Meeting of the Society held August 10. 1823.*

Cactus speciosus has been flowered in the open air, and kept through the winter in a cold-house (*im kalten gewächshaus*) by M. Fleischinger. The temperature of the cold-house never exceeded 50° , and the pots were kept perfectly dry.

The remainder of this paper enumerates the titles of articles approved of for publication, the substance of which we shall give in a future Number.

ART. IV. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c. published since June last, with some Account of those considered the most interesting.*

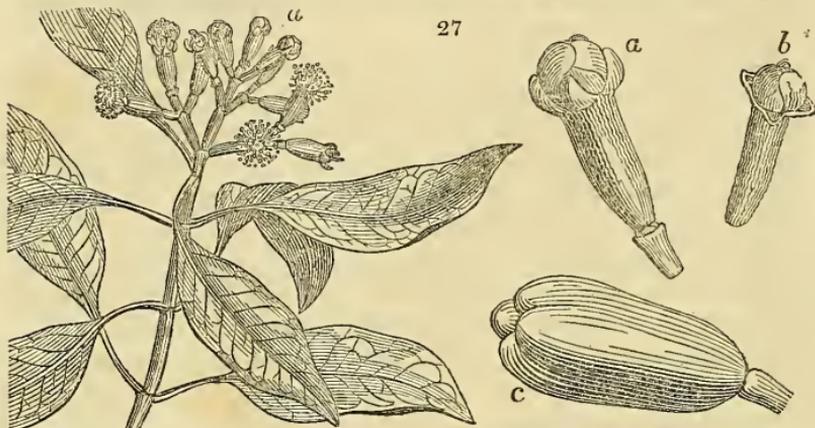
BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In svo Numbers; 5s. 6d. coloured; 3s. plain.

No. VII. for July, contains

2748 to 2754.—Zygopétalon (*zygo*, to unite; the five petals are united at the base) Mackàii; 20 and 1, and Orchidææ. A plant of great beauty, and amongst the most showy of its family.

Caryophýllis *aromaticus* (*fig. 27.*), Clove Spice; 12 and 1, and Myrtæcææ. A moderate-sized tree of the East India Islands, supposed to have



been known in Europe since the seventh century. It is now cultivated in the islands of the West Indies and South America. The clove of commerce is the unexpanded flower (*a*), the corolla forming a ball or sphere on the top, between the teeth of the calyx; thus, with the narrow base or germen tapering downwards, giving when dry the appearance of a nail (*b*): hence the French *Clou*, from which the English Clove is evidently derived. The uses of cloves in domestic economy and medicine are sufficiently known. "The cloves are gathered by the hand, or beaten with reeds so as to fall upon cloths placed under the tree, and dried by the fire, or, what is better, in the sun. The fully formed berries (*c*) are preserved in sugar, and eaten after dinner to promote digestion."

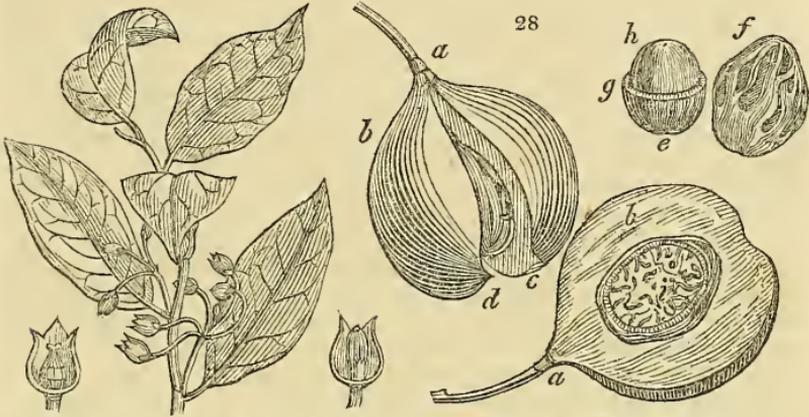
Telfairia pedata; 22 and 5, and Cucurbitæcææ Nhandiròbeæ. An extraordinary climbing plant, from the eastern coast of Africa. The fruit is three feet long, and eight or ten inches in diameter, full of seeds as large as chestnuts, which are as excellent and agreeable as almonds, and when pressed yield an abundance of oil, equal to that of the finest olives. Perennial; on the margins of forests, enveloping the trees with its branches. Plants have flowered in the stove at Bury Hill. Mr. Telfair has sent seeds from the Mauritius to the Isle of Bourbon, New Holland, Otaheite, and New Zealand, and will thus "have the honour of giving a most useful

vegetable to mankind at large, as well as a name to a new and very beautiful plant."

Sida pulchella; 16 and 13, and *Malvaceæ*. New Holland, and nearly hardy.—*Acacia penninervis*, Feather-nerved Acacia.

No. VIII. for August, contains

2755 to 2761.—*Góngora* (A. C. y *Gongora*, Bishop of Cordova, patron of *Mutis*) *speciosa*; 20 and 1, and *Orchideæ*. One of the most curious of Brazilian epiphytes. From the garden of R. Harrison, Esq., at Aighburgh, near Liverpool. Flowers yellow, large, fragrant, and the cup at the base of the labellum filled with honey, and sometimes emptied and refilled in the course of the day. May; easiest culture.—*Myristica officinalis*, Official, aromatic, or true Nutmeg Tree (*fig. 28.*); *Diœcia Monadèphia* and *Myristicææ*. A tree



of the Molucca or Spice Islands, from twenty to twenty-five feet high, with a greyish brown bark, whorls of spreading branches, elliptical smooth leaves six inches long, and flowers not unlike those of the lily of the valley. The fruit is a drupe, of the size and somewhat of the shape of a small pear (a). "The flesh, which abounds in an astringent juice, is of a yellowish colour (b), almost white within, and four or five lines in thickness: this opens into two, nearly equal, longitudinal valves (c d), and presents to view the nut (e), surrounded by its arillus or mace (f), which soon drops out, and the husk (b) withers." The colour of the nut when fresh is a brilliant scarlet; when dry it becomes horny, brittle, and of a yellow brown; the shell (g) is very hard, and not above half a line thick; it envelopes the kernel, or nutmeg of the shops (h), which is of an oval or elliptical form, pale brown, and afterwards furrowed on its surface. Its outside is very thin, its inner substance or albumen (i) firm, whitish, with red veins, abounding in oil. The tree bears both blossoms and fruit at all seasons of the year, and assists, with other aromatic trees and shrubs, to form that atmosphere of fragrance in the upper regions of the air, in which the natives believe the birds of paradise perpetually float. "Long before the East India Islands were discovered by the Portuguese, the nutmeg, as well as the clove, seems to have been known in Europe through the medium of Persia and Arabia, and, since the year 1510, when the first Portuguese navigators visited those islands, they have probably been known as an article of commerce; yet, down to the time of Linnæus, nothing was known of the plant that produced this precious fruit, nor till M. Céré, director of the royal gardens in the Isle of France, communicated specimens and observations to the Chevalier de Lamarck." The Dutch, having possession of the Spice Islands in 1619, encouraged to the utmost of their power the cultivation of the nutmeg in a few of them, pursuing the same

line of policy as they did with regard to the clove, and long retaining the monopoly of culture : but, in 1772, M. Poivre introduced the nutmeg to the Isles of France and Bourbon, as well as the clove ; from thence it was sent to the West India Islands, and afterwards taken by the British to Bencolen, in Sumatra, where it is grown in the greatest luxuriance. The Dutch appear to have been totally ignorant of the dioecious nature of the nutmeg tree, and of the consequent sterility of many of the trees ; but the French, in the Isle of France, ascertaining that one male plant is sufficient for a hundred females, graft seedling plants with the two sexes in that proportion, and hence, besides having no superfluous trees, the plantation comes much sooner into bearing. The culture of the nutmeg does not succeed so well in the West as in the East Indies, as the Rev. L. Guilding (*Gard. Mag.*, vol. i. p. 125.) experienced in the Isle of St. Vincent. In the Moluccas, the fruit is gathered in July, November, and April ; the outer pulpy coat is removed, and afterwards the mace, with a knife. "The nuts are placed over a slow fire, when the shell becomes very brittle, and the seeds, or nutmegs, drop out : these are then soaked in sea-water, and impregnated with lime, a process which answers the double purpose of securing the seeds from the attack of insects, and of destroying their vegetating property. It further prevents the volatilization of the aroma. The mace is simply dried in the sun, and then sprinkled with salt water, after which it is fit for exportation. The uses, both of the mace and nutmeg, are well known, whether in a medical or æconomical point of view. The whole fruit, preserved in sugar, is brought to table with the dessert, but not till after the acrid principle has been, in a great measure, removed by repeated washings. An essential oil is obtained from the nutmeg and the mace by distillation, and a less volatile one by expression." Plants may be had in the nurseries, and their culture and propagation resembles that of other individuals of the same natural order.

Ceratiola (the dimin. of *keras*, a little horn ; the flowers) *ericoïdes*, Heath-like *Ceratiola* ; *Empetrææ*. A twiggly shrub from sandy soils in South Carolina. Its specific name and the family to which it belongs will, or ought, to convey to the reader every other idea that he could desire as to its appearance and culture.—*Sida mollis*, *Soft-leaved Sida* ; *Malvæcææ*. A stove mallow-like shrub of ten or twenty feet, with orange-yellow flowers in abundance. Peru. Easiest culture.—*Dorstènia ceratosánthes*, *Horny-flowered Dorstènia* ; *Urticææ*. A stove herbaceous plant from South America, with a very curious receptacle.—*Gnídia* (from *Gnidia* in Caria, according to Dioscorides and Pliny) *tomentôsa*, *Downy Gnidia* ; *Thymelææ*. A twiggly shrub of three or four feet, with yellow flowers in March and April. Cape of Good Hope ; and the easiest culture.

The cover of this Number contains an address "to those who have incomplete sets of the *Botanical Magazine*," in which Mr. Curtis, the highly respectable proprietor, expresses his hope that the additional sixpence, which he is under the necessity of putting on some reprinted numbers of the old series, will not "disturb the confidence of his numerous friends and subscribers." He also states that the sale of the new series is increasing, and that "he hopes it will soon reach to that extent which will become profitable ; although, to uphold a work, the parent of all works of a like nature, and originating in his family, he would even conduct it without profit ; yet he cannot but hope, that in the end he shall find verified, that reward sweetens labour." We confidently hope that this will be the case, and that Mr. Curtis's recent and continued exertions to improve his work, coupled as they are with so much honourable and liberal feeling, will be duly appreciated by the public. To those who know little of the arcana of authorship and publishing, it may seem, on the part of a tradesman, a mere figurative expression, to say that he will carry on a work without profit ; but

those who know Mr. Curtis, and have seen his splendid works on camellias and florist's flowers, which never can have returned him a tithe of their cost, will readily believe his assertion.

Edwards's Botanical Register. Continued by John Lindley, F.L.S. In svo Numbers. 4s. coloured.

No. CXLIX. for July, contains

1074 to 1080.—*Moræa catenulata*, Chain-dotted *Moræa*. Nearly akin to *M. iridioïdes*. Stove; May.—*Acacia subcærulea*, Blue-barked *Acacia*. Handsome, remarkable for the fine copious blue bloom with which it is covered.—*Convólulus scrobiculatus*, Pitted *Convólulus*. A twining annual from America, remarkable for the deep pits of its leaves.—*Urvillea ferruginea*; 8 and 1, and *Sapindææ*. A remarkable stove plant, twining and clinging by means of the lowest pedicels of its racemes, which are sterile and converted into tendrils, to the length of twenty feet.—*Camélia reticulata*. A splendid new species brought from China, by Captain Rawes, to T. C. Palmer, Esq., at Bromley. (*Gard. Mag.*, vol. i. p. 341.) It is distinguished by its rigid; flat, strongly reticulated leaves, and also by its silky ovarium.—*Psidium* (a name of *Dioscorides* for the Pomegranate) *pyriferum*, Pear-bearing *Guava*. *P. pyriferum*, *pomiferum*, *polycarpum*, and *Cattleianum*, are readily fruited in our stoves: the last, or purple *Guava*, is the most valuable, and has produced abundance of excellent fruit, with no trouble, in the stove of the gentleman whose name it bears as a specific distinction.—*Stachys* (*stachys*, a spike) *grandidentata*, Large-toothed *Stachys*; 14 and 1, and *Labiatae*. A hardy herbaceous plant from Chile, by Mr. M'Rae to the Horticultural Society in 1825. Mr. Rae also sent *S. albicaulis*, a remarkable species, and some others in the Horticultural Society's garden.

No. CL. for August, contains

1081 to 1087.—*Ananassa bracteata*, Crimson-bracted Pine-apple; 6 and 1, and *Bromeliææ*. "A superb plant, the great merit of which consists in the clear deep crimson bractæ of the flowering spike, which retain their colour, although less brilliant, in the ripe fruit. The fruit is also of very good quality. Introduced from Brazil, by way of Portugal, in 1820, by R. Barclay, Esq. F.L.S.H.S.—*Collinsia* (a botanist and mineralogist of Philadelphia) *parviflora*, Small-flowered *Collinsia*. "A hardy annual from Colombia, more remarkable as a botanical curiosity, than as an ornamental plant."—*Calceolaria integrifolia* var. *angustifolia*; *Scrophularinææ*. (*Gard. Mag.*, vol. ii. p. 187.) "A half-hardy suffruticose plant, well adapted for planting in the open border in masses during the summer, and for ornamenting a conservatory in winter. It is always in flower, and is cultivated and increased with the greatest facility. If nailed to an east or west wall, and protected with a mat, it will survive our winters, and flourish exceedingly; but, on a south wall, it is too much scorched by the sun."

Tabernæmontana gratissima; *Apocynææ*. A fragrant stove shrub, with white flowers in September, propagated by cuttings, and growing freely in loam, peat, and sand. (See p. 52.)—*Muscari* (*moschos*, musk) *glaucum*, *Glaucous-leaved Musk Hyacinth*. A bulb from Persia, apparently quite hardy.—*Diánthus* (*dios*, divine, *anthos*, a flower; of divine beauty) *suffruticosa*. A half-hardy suffruticose Chinese pink, flowering freely from July to October, and highly deserving of cultivation. It has not been discovered in a single state, and is probably only a variety of the common Indian Pink, *Diánthus chinensis*.

Ophrys (*ophrys*, eyebrow; arched form of the leaves of the calyx) *atrata*, *Dark-lipped Ophrys*. From Rome to the Horticultural Society in 1826, by Signor Mauri; the roots dried, and packed in paper like seeds! It is observed by Mr. Lindley, that the roots of several other orchideous plants of the South of Europe were received from Signor Mauri, similarly packed,

at the same time, and that "they have all succeeded perfectly, although when the roots arrived in England they were so shrivelled in appearance, that it was not expected that they would have survived." The experience thus gained, it is hoped, will not be lost on botanical collectors. We wish it had been stated at what period in the growth of the plant the roots were taken up to be dried: the orchideæ of this country, it is generally considered, are best removed when coming into flower; but, we presume, these bulbs must have been taken up by Signor Mauri when the flowers and leaves were beginning to decay.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts. 5s. and 2s. 6d.

Part CXXIII. for July, contains

1221 to 1230.—*Acer hybridum*. A fine bold-leaved tree, from the east of Europe; perfectly hardy, and of the easiest culture.—*Hovea linearis*. New South Wales. Green-house; seeds; sandy peat.—*Styphelia viridiflora*. A moderate-sized shrub from Port Jackson in 1791. Green-house; cuttings; sandy peat.—*Dracæna terminalis*. A magnificent red-leaved plant, from the East India Islands, where it is planted by all the inhabitants for ornament, and to mark the boundaries of their gardens. Cuttings; loam and peat.—*Acacia taxifolia*. Handsome.—*Epacris paludosa*. An elegant white-flowered heath-looking shrub, two feet high, from New South Wales in 1824. Green-house; cuttings; sandy peat.—*Polýgala grandiflora*. Elegant; nearly allied, but more beautiful than *P. myrtifolia*. Cape of Good Hope. Layers; peat and loam.—*Erica patens*. Bushy. A foot in height, and reddish purple flowers in April.—*Grevillea pubescens*. A low bushy shrub from New Holland in 1824.—*Epidendrum polybulbon*, a curious plant from Jamaica, of easy culture.

Part CXXIX. for August, contains

1251 to 1240.—*Alnus cordifolia*, Heart-leaved Alder. A beautiful tree from Naples in 1820, perfectly hardy, and deserving a place in every shrubbery.—*Trillium erythrocarpum*. A mountain bog plant of Pennsylvania and other parts of North America.—*Chorizema Henchmanni*. A weak straggling shrub, with a profusion of highly beautiful pea-flowers in April and May. New Holland. Cuttings; sandy peat.—*Daviesia acicularis*. A low shrub, with prickly leaves, and yellow flowers in May. New South Wales. Seeds; sandy peat.—*Acacia brevifolia*. "A most brilliant plant, not many flowers being of a brighter yellow." New Holland. Cuttings; loam and peat. *Pultenæa candida*. A bushy shrub, thickly beset with leaves, which are covered with downy hairs; bright flowers in May. New South Wales, by Mr. Mackay. Cuttings; sandy peat.—*Camellia japonica* var. *coccinea*. A scarlet-flowered Camellia, raised from seeds by Mr. Alnutt of Clapham.—*Bossia lenticularis*. A shrub of little more than a foot in height, with pea-flowers, from New Holland in 1825.—*Erica tetragona*.—*Cyripedium arietinum*. (p. 71.)
Flora Australàsica: by Robert Sweet, F.L.S. &c. Monthly. 5s. coloured; 2s. plain.

No. II. for July, contains

5 to 8.—*Oxylodium (oxys, sharp, and lobos, a pod) obtusifolium*; *Leguminosæ*, *Papilionacæ* *Sophorææ*. "A pretty, dwarf-branching, upright shrub," with dark orange-coloured flowers. From King George's Sound, by Mr. William Baxter, C.M.H.S. (the collector of F. Henchman, Esq. F.L.S. H.S.) to the Clapton Nursery of Mr. J.B. Mackay, F.L.S. H.S. &c. in 1825.—*Acacia Oxycædrus*. A handsome, bushy, spreading evergreen shrub.—*Grevillea concinna*. A handsome, erect, bushy, evergreen shrub, from the greenhouse of Robert Barclay, Esq. F.L.S.H.S., of Bury Hill.—*Pimblea decussata*; *Thymelææ*. A handsome, upright-branching, evergreen shrub, from the nursery of Mr. J. B. Mackay, to whom it was presented by W. T. Aiton, Esq. from

the Botanic Garden at Kew,—a circumstance that we are glad to mention, and should be happy to have occasion frequently to repeat, as a symptom of improved feeling towards his brethren, in the Director of the king's gardens.

No. III. for August, contains

9 to 12. — *Bossia* rhombifolia; 17 and 10, and *Leguminosæ* *Papilionacæ* *Lôteæ*. A dwarf-branching, evergreen shrub, with brilliant yellow and purplish red pea-flowers. From New South Wales to the Fulham Nursery, by Mr. C. Fraser. — *Melaleuca scabra*; 18 and 12, and *Myrtacæ* *Myrtææ*. A pretty evergreen shrub, resembling a small cypress or cedar. All the melaleucas are of a singular kind of beauty; elegant, showy, splendid, and not very common, though of easy culture. — *Orthrosanthus* (*orthros*, morning, *anthos*, a flower) multiflorus; 5 and 1, and *Iridææ*. A close-tufted, perennial, herbaceous plant, of the easiest culture in a cold-pit. From Lucky Bay, by Mr. W. Baxter, to the Clapton Nursery. — *Acacia mollissima*. A stiff, upright, bushy, handsome, sweet-scented shrub: one of the handsomest species of the genus, and a most desirable plant for a large green-house or conservatory; and, for the open air, as hardy as the common myrtle. From the nursery of Mr. Joseph Knight, F.H.S., where there are some fine specimens of this and other rare and beautiful New Holland plants, in his magnificent curvilinear conservatory.

Geraniacææ. By Robert Sweet, F.L.S. &c. In Numbers. 3s. each.

No. XCI. for July, contains

361 to 364. — *Pelargonium diversilobum* and *Spini*, *Ciconium glabri-folium*, and *P. lasiocaulon*. Handsome hybrids.

No. XCII. for August, contains

365 to 368. — *Pelargonium imperiale*, *clarum*, *obovatum*, and *regium*. Hybrids of unusual splendour, especially the first.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers, Monthly. 3s. each.

No. LIII. for July, contains

209 to 215. — *Streptanthera* (*strephe*, to twist; its anthers twist round the style) *élegans*; *Iridææ*. A beautiful bulb, from the Cape, by Mr. Synnot. Flowered, for the first time, in the nurseries of Mr. Colvill and Mr. Lee. — *Muscari macrocarpum*; *Asphodelææ*. Larger than *M. moschatum*, and said to be "one of the principal flowers with which the Turkish ladies contrive to correspond in secret with their lovers." From Constantinople, in 1812, by Lady Liston, to the Fulham Nursery. — *Wisteria chinensis* (*Consequana* of *Gard. Mag.*, vol. ii. p. 422.). One of the most beautiful of hardy climbers, which any one may grow by the side of his house. Layers, or young cuttings in sand, under hand-glasses, in a little bottom heat, will root readily. — *Trillium erythrocarpum*, Red-fruited *Trillium*; *Smilacææ* From sphagnous bogs, on the high mountains of Pennsylvania, Carolina and Canada; but succeeding well, in a bed of peat, in the nurseries of Mr. Colvill and of Mr. Knight.

No. LIV. for August, contains

215 to 216. — *Cypripedium arietinum*, Ram's-head Ladies'-slipper. All the cypripediums are rare and beautiful. Among an importation of American plants and seeds, made last spring by Mr. George Charlewood, F.L.S., and now growing at the nursery of Mr. Dennis, at Chelsea, are the present species, *C. humile*, *parviflorum*, *pubescens*, and *spectabile*, all flowering freely. — *Erythrina Crista galli*, Cockscomb Coral tree. A stout-growing spongy-stemmed shrub, generally kept in a stove or conservatory, but supposed to flower freely in the open air, if treated like *Dahlia*. This species is

often confounded with *E. laurifolia*, from which it may be distinguished by the smallness of the wings of the flower. — *Nocca latifolia*. A tall, strong-growing, upright, soft-wooded shrub, with terminal heads of small, white, sweet-scented flowers. Mexico. Planted by the side of a wall in a southern aspect, in the garden of A. B. Lambert, Esq. — *Claytonia grandiflora*. A pretty, little, red-flowering plant, with a tuberous root, from the garden of R. Barclay, Esq. F.L.S. &c.

Cistinææ. By Robert Sweet, F.L.S. In 8vo, every alternate Month. 3s.

No. XIII. for July, contains

49 to 52. — *Heliánthemum pilosum*. White flowers, and fit for rock-work. *H. formosum*. A handsome, upright, bushy shrub, the largest-flowered species of the genus; petals yellow; scarcely hardy, but, like all the species of the family, may be easily preserved through the winter in a pit. — *H. canescens*. Handsome rose-coloured flowers, and narrow canescent leaves; "the darkest-coloured flower, if not the handsomest of the genus; requires protection in frosty weather. — *Cistus laurifolius*. A hardy, strong, handsome-growing shrub, with abundance of large white flowers. Common soil, and quite hardy.

The Botanic Garden. By B. Maund. In small 4to. Large, 1s. 6d.; small, 1s.

Nos. XXXI. and XXXII. for July and August, contain

Cròcus susianus. Some experiments with the gathered flowers of this plant are related, by which it appears that, in a temperature of 70°, and within four inches of two lighted candles, they were, in rather less than an hour, as fully expanded as in the mid-day sun. — *Achillea Clavennæ* (in memory of N. Clavenna, an Italian botanist), *Bignònia radicans*, *Aster alpinus*, *Scilla bifolia*, *Schizánthus* (*schizo*, to cut, *anthos*, a flower; deep-cut segments of corolla) *pórrigens* (spreading), *Saxifraga oppositifolia*, and *Silène* (*sialon*, saliva; viscid sudation on the stems, which frequently entraps flies, &c.) *fimbriata*, Fringed-flowered Catchfly.

Medical Botany, &c. By John Stevenson, M.D., and James Morss Churchill, Esq., Surgeon. In Monthly Numbers. 3s. 6d.

No. V. for May, contains

Solànum Dulcamàra (*dulcis*, sweet, *amara*, bitter; in allusion to the flavour of the herb when chewed), *Woody Nightshade*, or Bitter-sweet *Solanum*; 5 and 1, *Lùridæ*, *L. Solànææ*, *J.* On banks of ditches, in hedges, and on old walls, in most parts of Europe, from Norway to Greece. The twigs and berries are narcotic poisons to the human species, though the berries produce little or no effect on brute animals. Sometimes used in medicine as a diuretic. — *Digitális* (*digitale*, a finger-stall, a thimble; in allusion to the form of the corolla) *purpurea*, Purple Foxglove. The most general colour of the flowers is purple, but it is also found wild with white flowers. One of the most showy indigenous plants of Europe; in scattered woods and coppices. A powerful narcotic poison, and valuable diuretic medicine, much used in the dropsy. — *Páris* (*par* equal in number, Herb Paris, One-berry, or True-love. (The four top leaves are set one against another in form of a true-love knot, and the plant in consequence was used in love philters.) Narcotic, but little used in medicine. — *Tussilàgo* (*tussio*, to cough) *farfàra* (*farfarus*, a name given by the Romans to the white poplar), White Poplar-leaved Coltsfoot. On marly clay soils in most parts of Europe; considered pectoral and vulnerary by the ancients, and still a principal ingredient in British herb tobacco. "A kind of tinder or touchwood is, in some countries, made of the roots, impregnated with nitre. The nostrum called 'essence of coltsfoot' is composed of balsam of Tolu, tincture of benzoin, and rectified spirit of wine; it contains

no coltsfoot, and is certainly one of the most baneful medicines that could have been imposed upon the public in pectoral cases.”

(No. VI. is analysed in *Gard. Mag.*, vol. ii. p. 455.)

No. VII. for July, contains

25 to 28. — *Rhèum palmatum*, till lately considered as the true rhubarb; but Mr. Don having shown Dr. Wallich's *R. Emodi* to be the medicinal plant, the authors of *Medical Botany* intend figuring that species also in a future Number. We think it very likely that the roots of various species are used, in the same way as the bark of different species of *Cinchona* is collected as the true bark. Any gardener who has spare plants of any of the sorts grown for the stalks, may slice and dry their roots, and use them medicinally. — *Tormentilla erecta*. The roots contain more tannin than any other vegetable, excepting galls and catechu. Sometimes used as an astringent. — *Iris florentina*. The dried roots smell like violets, and form the orris (*iris*) powder, used as a perfume, and in tooth-powder. — *Aconitum napellus*. Every part of the plant is poisonous in its green state; but the deleterious and acrimonious qualities are nearly lost by drying. It has lately been used in fever, rheumatism, schirrus, &c. To remove it, as a poison, emetics or the stomach pump are resorted to. A person having eaten some of the leaves of the *Aconitum* became maniacal; the surgeon who was called to his assistance declared that the plant was not the cause of his disorder; and, to convince the company that it was perfectly innocent, he eat freely of it, and soon after died in great agony.

No. VIII. for August, contains

Viola odorata, Scented Violet. The syrup of the flowers used medicinally; and an aqueous tincture of them, as a chemical test, to change blue to red, and alkalis to green. — *Cassia senna*. A shrub of Arabia and Upper Egypt, two feet high, with pennate leaves, and yellow pea-flowers. The leaves dried form the senna of the shops, a well known and active purgative. — *Papaver* (from *papa*, pap, or the soft food given to children, in which the seeds were put by the Greeks to make them sleep) *Rhœas* (from *rheo*, to fall, in allusion to the petals of the flower, which drop soon after their expansion), *Dropping-flowered*, or *Common Corn Poppy*. Frequent in corn fields in Europe, but said not to occur in America. The syrup of the leaves has been prescribed in coughs, and “opium has been obtained from the capsules, but in so small a quantity, as to render it an object unworthy of the trouble.” — *Acorus* (*kore*, the pupil of the eye; supposed by the ancients to cure maladies in the eye) *Calamus* (a reed), *Reed Acorus*, or *Sweet Flag*. A well known aromatic, indigenous in many parts of Europe, Asia, and America, in open situations, in shallow waters, or on the banks of rivers, but never producing its spikes unless growing in water. The root is aromatic, and frequently used as a substitute for, or in addition to, the cinchona bark. “It may be chewed by dyspeptic persons, and the juice swallowed with advantage when tonics are required; and, as it excites a copious secretion of saliva, it sometimes relieves the pain of toothache. . . . The whole plant has been used for tanning leather; and it is supposed by some that the French snuff *à la violette* receives its scent from this root. Throughout the United States, it is used by the country people as an ingredient in making bitters.” In Poland, the floors of the better sort of people are strewed with it when they are going to receive company; and the leaves, bruised by the feet of the guests, fill the rooms with a grateful odour, not altogether useless, as well as agreeable, in such a country.

The figures in this work are equal, if not superior, to those of any other botanical periodical; but half the plants hitherto given have such slender claims to be considered medicinal, that there seems no sufficient reason for stopping short of half the vegetable kingdom. In our opinion, the most powerful poisons and medical plants ought to have been given first, and one

hundred plates would have included quite enough of both. When this was done, such plants as the corn poppy, violet, orange, &c. might have followed, if a demand was found for them. A medical botany, in the style and at the price of Maund's Botanic Garden, is a *desideratum*. However, if there be a demand for such a medical botany as that now before us, the authors and publishers are perfectly justifiable in going on with the supply.

The Florist's Guide and Cultivator's Directory; containing the choicest Flowers cultivated by Florists, including Tulips, Hyacinths, Carnations, Pinks, Ranunculuses, Auriculas, Roses, &c. Each Number will contain four faithfully coloured Figures; and every subject will be accompanied by its Name, History, Mode of Culture and Preservation, or any other Information likely to prove interesting or useful. The most valued sorts will be selected from the various Collections, and each Collection specified from which the Drawings are made. By Robert Sweet, F.L.S. The Drawings by E. D. Smith, F.L.S., Botanical Artist. To be continued Monthly, and Twenty-five Numbers to complete a Volume. Price 5s.; or plain, 2s. London. Ridgway.

We are happy to announce this work, which will certainly supply a *desideratum* in botanical publications, and gratify the taste of a very considerable number who are admirers and cultivators of florist's flowers, without pretending to botanical science. Under the care of Mr. Sweet, the directions for culture may always be relied on, and Mr. Smith may be considered as a guarantee for the accuracy and beauty of the drawings.

No. I. for July, contains

1 to 4.—The Waterloo Hyacinth, Page's Duchess of Oldenburgh Auricula, Taylor's Glory Auricula, and Bataille d'Eyleau Tulip. All handsome flowers, very well coloured, and with a page or more of description and remarks on their culture. With respect to new sorts of tulips, Mr. Sweet observes, "Any person desirous of raising fine varieties from seed, might generally succeed by studying what colours two different flowers, when combined, would make; then take an anther from the darkest flower, and rub the pollen on the stigma of a lighter one; and the seedlings from that would be as near as possible intermediate in colour when come to perfection."

No. II. for August, contains

5 to 8.—Rose Brillante Tulip, Prince Galitzin Ranunculus, Lawrence's Polyphemus Tulip (*Gard. Mag.*, vol. i. p. 547.), Davy's Juliet Pink. The last is a very fine flower, but we are sorry Mr. Sweet did not adopt a better name to denote its hybrid origin than *Diáanthus adulterinus* var. *Julietæ*. It seems the plant is a hybrid between *D. plumarius* and *D. caryophyllus*, raised by Mr. Davy of the King's Road, and partakes of the appearance both of the pink and carnation. It is well worth purchasing. On Mr. Hogg's mode of breaking tulips (*Gard. Mag.*, vol. ii. p. 44.), Mr. Sweet observes, that "it is likely to succeed," and "that it is well worth subscribing for at a guinea each, as required by Mr. Hogg in his advertisement." (*Gard. Mag.*, vol. ii. p. 556.)

Fleming's British Farmer's Magazine, exclusively devoted to Agriculture and Rural Affairs. Quarterly. 4s.

No. IV. for August, contains

1. *Original Communications*.—Mr. Price's Herefordshire Cow, engraved by T. Landseer. The Herefords are in general motley-faced, often with a large proportion of white intermixed with red, forming a kind of roan. The origin of this breed is very remote.—On Smut in Grain, by John Lawson, jun. of Elgin. The disease is described and illustrated by twelve well executed wood-cuts from drawings by Sowerby; but these cuts are injudi-

ciously printed together on a separate leaf, like a copper-plate engraving, instead of being intermixed with the text, so as to read along with it. The theory of the writer is, that smut in grain is produced by over-luxuriance in the plant, and that this tendency to over-luxuriance will be checked by steeping in salts of iron, stale urine, &c., and by change of seed from one country to another. "Should any new method be discovered of preventing smut in grain, that method will consist in diminishing the tendency which grain has to become over-luxuriant when removed from its natural situation, and brought under cultivation by man." — On Working Oxen, by J. Tull. A paper which we transferred to the *Farmer's Magazine*, without consulting Mr. Tull, but which, we trust, he will approve of.—Salt.—Breeds of Cattle.—Agriculture of Jersey.—On the present condition of the British Farmer, and On Broom. Two papers also sent by us to Mr. Fleming.—Agricultural and Commercial Statistics. Letter I.—Queries by our correspondent, W. M. of Argyleshire, in which he observes "that it is not always the first proposer of any hypothesis that deserves the greatest approbation from the public, but he that persists, and compels us to give in, in order to avoid being longer assailed with the repetition of what we dislike or disapprove; as the subject may be quite simple when at last admitted."—On Breeding in and in; in which the practice is advocated, but as the proximity of the individuals is not stated, the arguments go for nothing. What is to be gained from the "single fact" which this writer says is "worth all the theories in the world," that "the wild cattle in Chillingham Park have not degenerated, although bred in and in for some hundred years?" In our opinion, not the theory of "in and in," as the writer supposes, but that of breeding from the best specimens, whatever may be their consanguinity; for, where animals are in a state of nature, the stronger and more perfect males will first feel the impulse of passion, and at all times keep in subordination their weak and imperfect brethren. According to Sir John Sebright's notions of breeding in and in, the cattle at Chillingham may have bred for some hundred years without being guilty of any such practice.

On Prize-fed Oxen. In which the author thinks the practice disadvantageous to the community, by producing bad meat at an extra price.—On the Advantage of using steeped Barley instead of Oats, for the Use of Horses and Cattle. From which the balance appears to be 20 per cent. in favour of barley steeped for forty-eight hours, and then laid thick in a heap for forty-eight hours more.—The New Malt Bill.—Inquiry concerning the Causes of the Distresses of 1825, 1826, and 1827. Letter II. by Mr. Gray. The diminution of the accommodation by the Bank of England, it is argued, is the grand cause, though other causes cooperated with it.—On Mr. Gray's Letters. A well-written paper, in which Mr. Gray is blamed for treating certain writers of high consideration, as men of no real talent.—List of Smithfield Club.—Patents.—Biographical Notice of I. C. Curwen, Esq. M.P.

Review of Bland's Principles of Agriculture, a small 4s. volume, here favourably spoken of; England's Prosperity, a philanthropic pamphlet by a Gentleman; The Trial of the English Farmer, a fictitious dialogue in defence of the farming interest.

2. *Agricultural Intelligence*.—Corn Trade. Corn Averages Bill. Smithfield. Fairs. Scotland. Ireland. Wool Trade. Provision Trade. Hop Trade. Agricultural Reports for England, Scotland, and Ireland. Extracts from Foreign and Colonial Journals. News of Agriculture. Public Sales of Agricultural Property. Varieties. Obituary.

3. *Sporting Intelligence*.—Fox-hunting. Racing. The Turf. Stud Sales. The Chase. Cricket. Miscellaneous.

Our readers will see from the above analysis what an extensive body of information is brought together in this work, which bids fair to rival in utility, as it already does in sale, that of its predecessor of the north.

Hunt, T. F., Architect, St. James's Palace, London :

1. Half a dozen Hints on Picturesque Domestic Architecture, in a Series of Designs for Gate-Lodges, Gamekeeper's Cottages, and other Rural Residences. Lond. 2d edit. 4to. 10 plates.
2. Designs for Parsonage Houses, Alms Houses, &c. &c., with Examples of Gables, and other curious Remains of Old English Architecture. Lond. 4to. 21 plates.

Architecture is an art in which, till lately, very few of its modern professors have been able to think rightly. With the revival of the Grecian style in this country, in the early part of the seventeenth century, few architects could carry their views farther than to rules and precedents in matters of detail. About the beginning of the eighteenth century, all was considered barbarous that was not Grecian; towards the end of the same century, the Gothic style came into vogue; and, twenty years ago, every young architect was either "all for the Grecian," or "all for the Gothic." A superior education, and a certain degree of the study and practice of sketching objects in general, has led to a better knowledge of the abstract principles of composition as applied to form; and hence, in the present day, there is something like a dawning of liberal taste.

The cause why so few architects have been enabled to think rightly in their profession may, as we think, be traced to their not being able to analyse the sources of the pleasures derivable from works of architecture; to separate the accidental associations of classical, historical, and imitative beauty, from the more permanent associations of fitness, grandeur, uniformity, and variety. The greatest stumbling-block to young architects, and the greatest hinderance to the progress of knowledge and taste in the art, both to artists and amateurs, are what is called the five orders. Till lately, whatever could not be reduced to them was considered as destitute of proportion; a word which, as it is commonly applied, means that those forms are most pleasing to which we have been most accustomed. At any rate, the beauty of proportion is merely relative; of one part of a building relatively to the whole, or of the whole relatively to some preconceived notions in the mind of the spectator. But the columns of a building have no more to do with the principles on which it is constructed, than the staircase or chimney-tops; and there might just as well be five orders of steps or of chimneys, as five orders of columns.

In order to illustrate what we have asserted, we shall take a brief view of the different sources of satisfaction which buildings are calculated to afford, and these we shall find may all be included under the terms fitness and expression.

The first and most obvious beauty sought in any building is its utility, or fitness for the purpose for which it was constructed. This implies in the spectator a knowledge of the usages of society in that particular country where the building was erected. The next principle is the fitness of the parts of the building for their respective situations and uses; and this implies in the spectator a knowledge of the strength of the materials made use of in the structure.

The second grand principle of beauty is that every building should, by its appearance, communicate the idea or expression of what it is; and it follows, as a matter of course, that, in the expression of buildings, as in the expression of other objects, there must be low, vulgar, common, cultivated, refined, elegant, dignified, and other expressions indicative of different grades in the progress of taste.

The former part of architecture is founded on mechanical and general science; the latter, on the principles of beauty as applied to forms. The lowest degree of beauty, in respect to form, is regularity as opposed to confusion; the highest degree, regularity joined with variety and intricacy. A second source of beauty, in respect to form, consists of imitation; and this

is one principal source of the pleasure derived both from Grecian and Gothic buildings.

Examining the designs before us, in respect to their fitness for dwellings, we should say that the cottages of the lower class were rather deficient in accommodation. For example, the first design for a gardener's house, notwithstanding its elegant exterior, and its "sitting-room, kitchen, and outhouse, with a bedroom and seed-loft in the roof," has neither pantry nor closet, oven, pigsty, nor hen-roost. The expense of this building is estimated at 255*l.*, which, compared with the accommodation, shows how much more anxious the architect has been to gratify the eye of his employer, than to study the comfort of the occupant. No. 3., a gamekeeper's house, and No. 5., a bailiff's or forester's house, are open to the same objections in a still greater degree, and to the additional one of not having their floors sufficiently raised above the adjoining surface. No. 9., an entrance lodge, arranged for "a sitting-room, kitchen, outhouse, and three bedchambers," the estimated expense 490*l.*, is very handsome; but how is it possible for a family of four or five persons to maintain in the interior any thing like that cleanliness, comfort, and decorum, that are required to correspond with the exterior effect, without the accommodations which we have enumerated?

Trying these designs by their expression, we consider them as too highly wrought; all the architectural details, we have no doubt, are appropriated with historical correctness, and the general effect of each building as a picturesque object is good; but the artist is everywhere too conspicuous: in the language of strict criticism, — the expression of art is greater than the expression of the subject, — the buildings are more an assemblage of Gothic ornaments and forms, than the walls and roofs of cottages. We should not, however, have objected to this, had we seen any thing like a corresponding anxiety about the interiors, and had Mr. Hunt evinced as great anxiety for old English comforts, as he has for the old English Gothic.

In the designs for parsonage-houses, the author seems more at home. In these we find store-rooms, pantries, entrance-lobbies, closets of various kinds, "places for hats, sticks, &c." porches, vestibules, back vestibules, corridors, book-closet, lean-to's, rustic verandas, cloisters, and, in short, every thing necessary to the comfort of the occupant. With this work we are very well satisfied, and perhaps great allowance ought to be made for the other as a first performance.

In the preface to *Designs, &c.*, it is observed that, in a work like this, it can scarcely be hoped that plans could be formed "to meet the requisites of every taste and every situation. Yet it is presumed, that the following designs will enable those who are desirous of erecting houses agreeably to their own preconceived ideas of beauty and comfort, to direct their professional builders with propriety and intelligence; and whoever calculates upon acquiring more from books will be deceived: a man not 'cunning in the art,' may as safely trust himself with being his own lawyer, as with being his own architect." In this remark we entirely concur; the chief use of books of architectural designs to country gentlemen is to furnish them with ideas on the subject, and to improve their taste.

We are happy to learn that Mr. Hunt intends to publish a series of designs in the Italian manner, which, from the simplicity of its outlines, is much more economical in the first erection, less subject to repairs, and far more durable than the multiform surfaces of the Gothic style. (See *Gard. Mag.*, vol. ii. p. 479.)

As to either the Grecian or Italian style being less adapted for this country than the Gothic, we regard the idea as chimerical. When any one style of building, or gardening, or any other art, comes into fashion, it is easy to find all sorts of arguments in its favour. Much of what is advanced by artists in such cases will not bear the test of rational examination. One style comes into vogue after another, entirely on the principle of novelty;

when artists are "all for the Gothic," its "greater variety of form and outline is found better suited to the scenery of this country, than the Greek temple, or Italian villa;" and, when they are "all for the Grecian," then its cubical masses and simple contour admit of the greatest quantity of accommodation within the smallest extent of wall and roof, while its horizontal lines contrast in a superior manner with the upright forms of woody scenery. There is no safety for an artist, but in being able in every case to trace to their source the causes of the pleasure which he derives from objects, and to exercise this power in the examination of his own compositions.

Mr. Hunt is evidently an artist of superior taste and industry, and, we doubt not, will profit by these remarks; at any rate, after having had every thing he could wish in the way of praise from contemporary periodicals, any thing like a dissentient voice must be quite refreshing to him.

FRANCE.

Chevallier, M.F.F.: Flore générale des environs de Paris, selon la méthode naturelle; description de toutes les plantes agames, cryptogames, et phanerogames, qui y croissent spontanément, leurs propriétés, leur usage dans la médecine, les arts, et l'économie domestique, avec 18 tableaux iconographiques. Tom. i. Paris. 8vo, pp. 648., col. fig. 16 fr.

This promises to be a valuable work. The first volume contains a new classification of agamous (non-sexual) plants, and a description of the numerous genera and species which belong to that class of the vegetable kingdom. The habitation of each species, the circumstances which favour its development, the mode of its reproduction, its uses or inconvenience in rural and domestic economy, are all carefully indicated. The figures are for the purposes of aiding the botanical descriptions.

Fontanelles, F. F., Physician to the Prince de Condé: L'Art de cultiver les Mûriers, by the Count Charles Verri; translated from the Italian, with Notes. Lyons. 8vo, pp. 87.

The cultivation of the mulberry appears to be as popular on the Continent as in Britain. The present work treats on the management of the plants, from sowing the seeds or planting the cuttings in the nursery, to gathering the leaves from the full-grown trees. It is favourably spoken of by Count Dandolo, by Deby, and others who have written on the subject.

Dutrochet, M. H., French Correspondent of the Institute, and Author of some original Works on Physiological Botany: Agent immédiat du Mouvement vital dévoilé dans sa Nature et dans son Mode d'Action chez les Végétaux et chez les Animaux. Paris. 8vo. pp. 226.

The name of Dutrochet is well known in the scientific world, as connected with anatomical and physiological researches. (*Gard. Mag.*, vol. i. p. 76. and vol. ii. p. 254.) In the present work he is considered to have surpassed all his predecessors in illustrating the laws of vital motion in plants; and, as far as we are able to form a decisive opinion on the subject, we think he has discovered the immediate cause of the ascent of the sap. The various phytologists who have preceded Dutrochet, and especially those of the latter end of the last century, have afforded us a very correct knowledge of the organs of plants; but it seems to have been reserved for this philosopher to have determined their use in a more precise manner than has hitherto been done.

The organs by which the sap ascends, M. Dutrochet has demonstrated to be those simple tubes, utterly devoid of valves and without any lateral intercommunication, which are situated both in the soft and hard wood.

They are the lymphatic tubes of Decandolle, the false tracheæ of Mirbel, and the corpusculiferous tubes of our author. They are not found in the bark, nor in the pith, and it is well known that the sap does not rise through these parts of the stem.

The proper juice, or sap, after it has been changed by the leaves into a nutritious fluid, according to M. Dutrochet, descends both by the bark and the alburnum or soft wood, through tubular oblong cells. These oblong cells give out the nutritive juice contained in them through their sides, and in spring, when the sap ascends, it takes up a portion of this juice for the developement of the leaves and the growth of the plant. The pith neither has the power of conducting the ascending or descending sap. M. Dutrochet agrees with Linnæus, Dr. Darwin, and others, in considering it to be to the vegetable, what the brain and spinal marrow are to the animal. Dr. A. T. Thomson (*Lectures on Botany*, vol. i. p. 379.) conjectures that the pith is intended chiefly to give bulk and stability to the young shoot; because, whenever this becomes ligneous and able to support itself, the pith dries up and diminishes in volume rather than increases.

Besides the vessels for the ascent of the sap, and those for the descent of the proper juice, there are a third description of vessels, which radiate from the centre of stems to their circumference, and are commonly called medullary rays. These rays are composed of oblong tubes or cells, extending from the centre of the wood to the bark, where they are met by similar tubes, in apparent but not real continuity in the bark. The radiated tracheæ of the wood give out the ascending sap from the lymphatic tubes, and the radiating vessels of the bark give out the prepared sap, or proper juice, from the descending tracheæ, or oblong cells, of the bark. The juice and the sap, thus poured out between the wood and the bark, unite in forming a nutritive fluid, which, consolidating, adds to the bulk of the plant, in the form of alburnum or soft wood, and liber or inner bark. This, it must be acknowledged, is a very simple and beautiful theory, and altogether consistent with matter of fact.

The next point which M. Dutrochet proceeds to determine is, the cause of the progression of the sap in the lymphatic tubes, oblong cells, and radiating tracheæ. It is unnecessary to trace the proofs that there is no actual circulation of the sap in plants, but merely an ascending and descending current, and a lateral diffusion and union. The condition of a plant requisite to admit of the exercise of these functions is, the susceptibility of becoming turgid by the application of water; in other words, that which distinguishes a dead plant from a living one is, the turgidity of its cellular parts. A dead plant may have its tubes, cells, and tracheæ filled with fluid, but these will never become turgid: a living plant, on the contrary, which has been apparently dead, when one extremity is placed in fluid, becomes filled with it throughout to an excess productive of turgidity. In a separated part of a plant, the ascension of the sap depends on the susceptibility of turgidity of all the parts of the section. In a plant growing in the soil, the cause of turgidity, or of the rise of the sap, is to be found in the minute conical bodies which terminate each radicle. M. Dutrochet, by careful examination with a microscope, found that the minute conical termination of the radicle was furnished with other projecting bodies, like sponges, which perform the office of the piston of a syringe, and have the power of introducing into their cavity, and through their sides, the water which comes in contact with their exterior surface, and which, at the same time, opposes the exit of any fluid these spongioles imbibe. To this power M. Dutrochet has applied the term *endosmose* (*endon*, inward, *osmos*, impulse); and he has proved its existence, on a larger scale, in the cœcum or blind gut of a young chicken, which he filled half full of milk, firmly closed at the open extremity, and then immersed in water. At the end of twenty-

four hours the cœcum had imbibed seventy-three grains, and at the end of thirty-six hours, one hundred and seventeen grains of water, and become very turgid. From this time its weight diminished; and, at the end of thirty-six hours, it had lost fifty-four grains of the water which it had absorbed, and the milk had become putrid. This experiment M. Dutrochet considers as demonstrating that the absorption of the water depends on the fluid in the cavity being denser than that which surrounds the organ; and that, as long as this dense fluid remains undecomposed, the endosmose, or absorption, continues; while, as soon as it becomes putrid, the endosmose ceases, and the water passes out of the organic cavity as rapidly as it had entered it. Farther experiment proved to M. Dutrochet that when the cœcum was filled with a thinner fluid than that in which it was immersed, this thin fluid passed out of it into the other. This action he calls exsmose (*ex*, out, *osmos*, impulse). He farther proved that fluids of a less density than water, when the solution contained in the cœcum is alkaline, produce endosmose; and, when it is acid, exsmose.

It may readily be supposed that, if the end of the cœcum, instead of being firmly closed, had been furnished with a small tube, the absorbed fluid, or endosmose, instead of producing an excess of turgidity, would have mounted in the tube. This M. Dutrochet found to be the case. He fixed the open end of a glass tube into the cœcum of a chicken filled with a solution of gum and water; and having immersed the cœcum in rain water, and supported the tube in a vertical position, he found that in twenty-four hours the fluid had ascended to the top of the tube, and that it continued to ascend and overflow at the top for three days. On the third day the water began to sink in the tube; and on the fourth day, the cœcum being opened, the fluid was found to be putrid. The experiment was repeated with the bladder of the carp, and with the inflated pod of the common bladder senna (*Colutæa arborëscens*), with equal success.

The next thing that M. Dutrochet endeavoured to discover was, the cause of fluids passing through organic substances possessing the action of endosmose and exsmose; and, as the contact of bodies of different densities, as zinc and copper, is a well known cause of electricity, that power naturally occurred to him as sufficient to account for the phenomena related. He proved this by an experiment, which it would occupy too much room to relate at sufficient length to convey useful ideas to the general reader. The man of leisure and science will have recourse to M. Dutrochet's book; and the gardener may safely adopt it as a proved fact, that that immense power in a bleeding vine, with a bladder tied round the extremity, which Mr. Braddick (*Hort. Trans.*, v. p. 202.) found distended with the rising sap till it became as hard as a cricket ball, and which burst at the end of forty-eight hours, has been clearly traced to the difference between the specific gravity of the water of the soil, and that of the nutritious fluid contained in the almost invisible points, or spongioles, which form the extremities of the fibres of all plants!

The effect of temperature on endosmose was, to increase the process, which is a proof of the influence exerted by electricity on the process; it being a well known fact, that, by increasing the temperature of two metals which produce electricity, the electrical current is increased in intensity.

In applying his observations to the vital statics of plants, M. Dutrochet's turgidity is shown to be produced and maintained by endosmose, and the accumulated sap re-acted on by the natural elasticity of the sides of the minute organs which contain it. Endosmose in the leaves takes place to supply the vacuum which is created by the transpiration of water from their surfaces. This explains the reason why cut plants absorb water, and why the roots and stem of a plant supply what sap they have to the leaves after being taken out of the ground. The difference of plants, in regard to the

temperature they require for the flowing or rise of the sap, is known to vary materially in different plants; and M. Dutrochet, with great apparent reason, thinks this is attributable to their different physical capacities for producing electrical currents.

The substance of M. Dutrochet's theory may thus be summed up:—The sap of plants does not circulate; it ascends from the root in the wood or comparatively woody parts of stems and branches, and, being elaborated into nutritive juice, descends by the vessels of the bark. The sap in ascending, and the juice in descending, are diffused laterally by horizontal vessels, which meet in common in the space between the bark and the wood. The sap and proper juice are poured out in this space, and these unite and form increments both of bark and wood. All the motions of the sap and juice in plants take place in consequence of the operations of two distinct currents of electricity: the one negative, by which the vessels have the power of absorption, which M. Dutrochet calls endosmose, and by which the vessels become turgid; and the other positive, by which the vessels exude or secrete, which power M. Dutrochet calls exosmose.

It is gratifying to find that none of the results of M. Dutrochet's experiments are materially at variance with the opinions of Mr. Knight: in some minor points their hypotheses differ; but all the important doctrines of Mr. Knight are confirmed, and established by M. Dutrochet on a basis which will not be easily moved.

Du Petit-Thouars, Le Chevalier Aubert-Aubert, For. Mem. L. S. and H. S., Membre de l'Académie royale des Sciences, &c. &c. : Notice Historique sur la Pépinière du Roi au Roule. Paris. Pamph. 8vo. 2 lvs.

From the time of Louis XIII., the kings of France have had nursery gardens in the neighbourhood of Paris, outside the suburbs St. Honoré, now the suburb du Roule. Claude Mollet, who was principal gardener there under Henry IV. Louis XIII. and XIV., says that, in 1620, he grafted more than 20,000 trees in these nurseries. That which is the subject of the present notice was, in 1772, destined by Louis XV. for the propagation of exotic trees; was put under the care of the Abbé Nolin, and ultimately under M. Du Petit-Thouars. It is now proposed to turn this nursery into a market-place, and the main object of the notice is to oppose this change, which will fall the more heavily on M. Du Petit-Thouars, as he receives 3600 francs a year as its director.

Palaiseau, J. L. G. B., Painter: Description d'un Jardin imaginaire, et quelques Considérations sur les Avantages que peut offrir le Séjour de la Campagne; accompagnées de plusieurs Plans et E'lévations applicables à l'Exécution des différentes Parties de ce Projet, et de quelques Observations sur l'Utilité que l'Architecte pourrait retirer d'une Connaissance parfaite de la Perspective. Paris. 8vo, 4 pl. 3 fr.

Worth looking at by architects and landscape-gardeners.

Poinsot: L'Ami des Jardiniers, ou Instruction Méthodique à la portée des Amateurs et des Jardiniers de Profession, sur tout ce que concerne les Jardins Fruitiers et Potagers, Parcs, Jardins Anglais, Parterres, Orangeries, et Serres chaudes. Avec 20 Gravures en Taille-douce. Paris. 1804. 2 vols. 8vo.

Du Bois, M. Louis, Member of several Academies, and one of the Authors of the Cours complet d'Agriculture, &c.: Pratique simplifiée du Jardinage, à l'Usage des Personnes qui cultivent elles-même un petit Domaine, contenant un Potager, une Pépinière, un Verger, des Espaliers, des Serres, des Orangeries, et un Parterre. Paris. 1821. 12mo.

Descharmes, M. Pajot : Sur la Fabrication du Muriate de Chaux considéré comme Engrais. Paris. Pamph. 8vo.

The muriate of lime is an active stimulant to vegetation, and might be usefully applied as a manure. It is produced in the manufactures of soda and of chloric acid, and at present generally thrown away as useless. The hint is worth the attention of Mr. Tomalin (Vol. II. p. 126.) and others. "Le muriate de chaux peut-être considéré comme un stimulant de la végétation, fort utiles dans certaines circonstances, mais non comme engrais proprement dit, capable de fournir à la plante des substances nutritives." (*C. Bailly, in Bul. Un. Fev. 1827, p. 75.*)

Sageret, M., Member of the Royal and Central Society : Deuxième Mémoire sur les Cucurbitacées, principalement sur le Melon, contenant la Culture en pleine terre de celui-ci, &c., et les Perfectionnemens dont elle serait susceptible. Paris. Pamph. 8vo.

The author seems to have made numerous experiments, the results of which, and his reasoning thereon, form the subject of this pamphlet, which well deserves the attention of those who are curious in the culture of Cucurbitacæ. A list is given of fifty sorts of melons, most of which may be purchased from M. Vilmorin, Seedsman, Paris.

Franck, W. : Traité sur les Vins de Médoc et les autres Vins rouges de Département de la Gironde. Bordeaux. 8vo, 5 pl. 10 fr.

Descourtîlz : Flore Pittoresque et Médicale des Antilles. Livraisons lxxviii—lxxiii. Paris. 8vo, col. fig. 6s. each

Leadbouidois : Botanique Belgique, ou Flore du Nord de la France et de la Belgique proprement dite. Paris. 8vo, 2 vols. 1l. 1s.

Redouté, P. J., Botanical Flower-Painter, Paris : Choix des plus belles Fleurs prises dans différentes Familles du Règne Végétal. Livraisons i. et ii. Paris. 4to, col. fig. 18s.; in fol. 1l. 16s.

Noisette, L. C., Nurseryman, Paris : Manuel complet du Jardinier, Maraicher, Pépiniériste, Botaniste, Fleuriste, et Paysagiste. Paris. 8vo, 4 tom. 3l.

Decandolle, M. A. P., F.R.S. F.M.L.S. H.S., &c.

1. Mémoires sur la Famille des Légumineuses. 8 livraisons. Paris. 4to, figs. 5l. 5s.

2. Organographie Végétale, ou Description raisonnée des Organes des Plantes, &c. Paris. 2 vols. 8vo. 1l. 7s.

Duhamel de Monceau : Traité des Arbres Fruitières. Nouvelle édition, augmentée par Poiteau et Turpin. Livraisons xxvi—xl. Paris. Fol. col. figs. 2l. 2s.

Saint-Hilaire, Auguste de, Jussieu, et Cambessèdes : Plantes Usuelles des Brésiliens. Livraisons ix, x, xi. Paris. 4to, figs. 7s. 6d.

Annales de la Société Linnéenne de Paris. Tom. iii, iv, v. Paris. 8vo. 1l. 10s.

Neufchateau, Poiteau, Petit-Thouars, &c. : Dictionnaire d'Agriculture Pratique. Paris. 2 vols. 8vo. 1l. 11s. 6d.

Thouin, Prof. And. : Cours de Culture et de Naturalisation des Végétaux. Paris. 8vo, 5 vols. 2l. 12s. 6d.

GERMANY.

Gmelin, D. : Flora Badensis, Alsatica, et Cis et Trans-Rhenana. Carlsruhe. 8vo, 4 vols. with a supp. and index.

Collectio Plantarum officinalium, cum Icon. color Fasc. i—xv. Dusseldorf. Fol.

- Martius, Dr. &c.* : Nova Genera et Species Plantarum quas in Itinere per Brasiliam, 1817—1820. coll. et desc. Vol. ii. fasc. 5. with 40 pls. Monachi. 4to. 8l. 8s.
- Brown, R. F.R.S. &c.* : Prodrum Floræ Novæ Hollandiæ et Insulæ Van-Diemen, exhibens characteres Plantarum. Edit. 3tia, ab ipso auctore emendata. Cur. D. Nees von Esenbeck. 8vo. 12s.
- Reichenbach, H. L.* : Iconographia Botanica Exotica, sive Hortus Botanicus, imagines Plantar. extra Europam invent. coll. cum Commentario succincto ed. 1ma Centuria, tab. Lips. 4to. Cum tab. æn. nigr. 1l. 11s. 6d.; cum tab. æn. pict. 5l. 5s.
- Pohl, J. E.* : Plantarum Brasiliæ Icones et Descriptiones hactenus ineditæ. Vindob. Fol. fasciculus, cum tab. æn. pict. 6l. 6s.
- Ekart* : Gramina et Plantæ sub Aquâ plane natantes, quæ in Duc. Coburg. sponte proven. Coburgi. Fasc. i, ii, iii. fol. 1l. 10s.
- Host, N. T.* : Flora Austriaca. Vindob. 8vo, vol. i. 16s.
- Presl, C. B.* : Flora Sicula exhibens Plantas vasculosas in Sicilia, &c. rep. Pragæ. 8vo. tom. i. 10s.
- Hedwig, D.* : Species Muscorum frondosorum descriptæ et Tabulis Æneis color. illust. op. posth. Lips. Large 4to. 1l. 11s. 6d.; vellum paper, 2l. 5s.
- Stuedel et Hochstetter* : Enumeratio Plantarum Germaniæ Helvetiæque indigen. Stuttgardiæ. 8vo. 8s.
- Schlechtendal, D. F. L. de* :
1. Adumbrationes Plantarum. Berolini. Fasc. 4tus, 4to.
 2. Linnæa Journal für die Botanik. 1826. 4 hefte. 1l.
 3. ————— für 1827. IIr. Bd. Ir. Stuck. 5s.
- Nees von Esenbeck, C. G.* : Bryologia Germanica. Bonnæ.
- Sternberg, Comte* : Essai d'un Exposé Géognostico-Botanique de la Flore du Monde Primitif. Ratisbonne. Cah. 4e in fol. 25 pls. 2l. 10s.
- Schwærer* : Lichenes Helvetici exsiccati. Bernæ. 4to, fasc. i—vi.
- Von Frauttschen*, a military Captain : Die Bürgerliche Baukunst für angehende Forstmänner und Landwirthe. Civil Architecture for those who study Forest Culture and Husbandry. Dresden. 8vo, pp. 144. 16 gr.
- Anon.* : Die Kunst, moussirenden Champagnerwein am Rhein zu bereiten. The Art of preparing Champagne mousseux on the Rhine, &c. Bonn. 12mo. 24 kr.
- Schmidt, Carl. Friedr.* : Vollständiger und gründlicher Garten unterricht. Rational and detailed Instructions on Gardening. Leipzig. pp. 394. 9th edit. 1 rthlr.
- De Reider, J. E.* : Das Ganze der Blumenzucht. The whole Culture of Flowers, &c. Neurenberg. 8vo. 8 gr.
- Verhandlungen des Vereins, &c.*, Transactions of the Society for the advancement of Gardening in the Royal Prussian States. 7th Part, 4to, 18 pls. Berlin. 1827.

This Part completes the third volume of what may certainly be considered as the most original work on gardening which has appeared on the Continent for many years. The plates to this part are chiefly figures of different species of Melocactus, illustrative of a monograph, by H. F. Link and F. Otto, of the 117 species of Cacti in the botanic garden of Berlin. We observe that the arrangement and nomenclature of Mr. Haworth is

adopted, a botanist who is justly considered as the sovereign of the kingdom of succulent plants. In succeeding numbers we hope to get rapidly through these *Transactions*.

Lullin, C. M. M.: Notes et Observations pour les Régens et le Moniteurs des E'coles d'Enseignement mutuel des Communes rurales du Canton de Genève, sur l'*Abrégé de l'Agriculture* à l'usage des mêmes E'coles. Geneva. Pamph. 8vo.

Bernardi and Volker, Authors and Publishers at Weimar: Neues Allgemeines Garten-Magazin, &c. New General Garden Magazine. Vol. ii. Part iii. Weimar. 4to, 5 pls.

ITALY.

Lose, Fred., Painter: Promenade dans le Parc et les Jardins de Monza. Milan. 12mo, pp. 16, 10 pl.

The plates consist of a plan of the park, two views of the palace, six of the gardens and grounds, and one of the church of Monza, an edifice composed in a mixed style of Gothic and Grecian, but highly decorated and picturesque. The engravings are by the painter's wife, and very well executed; an example of domestic co-operation and talent worthy of notice and of imitation. The description of the park, though very short, is less suitable to our purpose than that; for which, as well as for the *Promenade*, we have to thank Mr. Clare. (See *Miscel. Intel.*, Vol. II. p. 459.)

Visiani: *Stirpium Dalmaticarum Specimen*. Patavii. 4to, cum 8 tab. æn.

Bajoni, C.: Metodo per far migliorare e conservare il Vino. Method of ameliorating and preserving Wine. Bergamo. 8vo, pp. 525.

The grapes ought not to be cut till they are perfectly ripe, and the operation should be performed in a hot day, after the sun has exhaled from the berries every particle of exterior moisture. Cut off the bunches with scissors, and remove the damaged berries. Directions are given for treading the grapes in tubs, and the signs indicated by which it may be known when fermentation is completed. The wine is then directed to be put in casks by means of pipes, so as to prevent it from coming in contact with the air; and, in racking from one cask to another, the same pipes are to be used for the same reason. Before bottling, see that the bottles are perfectly clean; and, to prevent every possible chance of their contaminating the liquor, fumigate them with sulphur.

HOLLAND AND THE NETHERLANDS.

Journal d'Agriculture d'E'conomie Rurale et des Manufactures du Royaume des Pays-Bas, &c. Brussels. 8vo., in Monthly Numbers.

This work, which has appeared for twelve years, and has extended to five volumes, is chiefly occupied with translations or extracts from contemporary publications. The Number for April last contains an original article on the culture of tobacco, by Bailley Saint-Martin, inspector of tobacco manufactures in France, and now resident at Uccle, in the neighbourhood of Brussels; which, since the passing of the late law for the culture of tobacco in this country, may be of some interest to our readers.

The tobacco is an annual plant, which requires a good deal of care. The sort considered best worth cultivating in France and Flanders is the tongue-leaved, or Virginian, *Nicotiana Tabacum*.

The soil which best suits the tobacco is one of a marly, hot, and rather moist nature. The sweepings of streets, and the ashes of alkaline plants,

such as artichokes, kidneybeans, fern, beech or buck wheat, &c. are considered favourable manures.

The seed of the tobacco should be sown on a slight hot-bed in the month of March. One ounce of seed will furnish plants for a plantation of an acre and a half in extent. The seed should not exceed two years old, and should be sown sufficiently thin to cover the surface of a bed twenty-four feet long and four feet broad. It may be steeped before sowing, and kept moist in a warm place till it begins to swell, in order to hasten its germination. M. B. Saint-Martin sows from a tin dredging-box, but that we consider to be unnecessary: machinery should never be resorted to merely to supersede a little care. Formerly, it is said, the tobacco beds were covered with straw instead of glass frames; but the plants were found to be too much etiolated, and therefore glass sashes and a frame, like that used for growing cucumbers, are recommended as decidedly preferable. Plenty of air is given at all times, and in fine weather the sashes are removed during the day. About the beginning of May, and sometimes a fortnight earlier, the plants will have attained a sufficient size for transplanting; and a week before this operation commences, the bed should be left night and day without the frame and sashes. The tobacco is nearly as susceptible of injury from frost as the potato.

The soil for the plantation should be deeply ploughed, well pulverised, and sufficiently manured. The plants may be placed in rows two feet apart, and two feet distant in the row: they should be watered, and, if convenient, a little litter laid round the root of each plant, to retain the moisture in the soil. "It must never be forgotten that this plant loves the sun and humidity:" hence, besides keeping the ground clear of weeds, the plants are watered frequently during the months of June, July, and August.

After the plants have produced five or six leaves on the stem, they must be prevented from running to flower, by pinching out the heart of the main shoot, and rubbing off all the side shoots which are produced from it. Without this precaution, the principal part of the nourishment drawn up by the plant would go towards the formation of flowers and seeds, and the leaves would become thin and wither off. By shortening the main shoot, the whole of the nourishment is directed to the leaves, which thereby become strong and succulent, without any tendency to decay. Sometimes the plants are earthed up a little, but that operation is by no means essential.

It is almost unnecessary to observe that, when seed is required, two or three vigorous plants are allowed to run to flower. When the seed is ripe, the plants are taken up, hung up in a dry airy situation, and afterwards the seed capsules taken off and preserved till wanted in paper. It is found that the seeds preserve much better when kept in the capsules than by any other means.

M. Saint-Martin gives no direction for gathering the leaves; but the following mode is described in the *Cours d'Agriculture Complet*, as practised in Alsatia, in France, and in Virginia. The leaves are known to be fit for cutting when they have attained their full size, a dark green colour, and a brittle succulent texture. The lowest leaves acquire these properties first, and, in gardens or small plantations, are therefore first gathered, by being cut off with a knife close to the stem. Where tobacco is cultivated extensively, however, instead of gathering the leaves separately, the plants are cut over by the surface of the ground, and suspended under an open shed upon lines, so far apart that the leaves may not touch each other. In this state they remain till the leaves are perfectly dry, when they are stripped from the stalks, and tied in small bundles, a leaf serving for the tie. These bundles are laid in heaps in a shed, in order to bring on a similar degree of fermentation to what takes place in new hay. That this fermentation may

equally pervade every part, the heaps are covered with a cloth, sometimes blankets, mats, or a layer of straw. These heaps are opened and spread abroad to the air from time to time, in order to prevent their overheating; and when this process has been carried on till no more heat is perceived in the heaps, the tobacco is fit for the manufacturer. At this stage, therefore, in America, it is packed in casks for exportation.

The farmer that understands how to make good meadow-hay, will be at no loss how to make good tobacco. With regard to growing the plant, it requires very little more care than growing a crop of cabbages: the extra care is in raising the seedlings, pinching *out* the hearts, and *off* the side shoots, and gathering any caterpillars that may appear on the leaves. Any British farmer who contemplates a trial of the tobacco culture, and does not feel himself fully master of the subject, will find his difficulties easiest solved by applying to the nearest intelligent gardener; let him be a reading gardener: but whoever understands the general principles of culture,—that is, whatever farmer is capable of reasoning on what passes under his notice in the culture of turnips and cabbages, and the making of hay,—is perfectly competent to cultivate tobacco.

Those who are curious to know what has already been done in this way in Britain, may turn to our *Encyclopædia of Agriculture*, Art. Tobacco, in the Index, when they will find references to its culture in Hindostan, at the Cape of Good Hope, in Yorkshire, and in Roxburghshire. They will also find there some account of the manufacture of tobacco into the different forms in which it is used for chewing and smoking, and into the different kinds of snuff.

SWEDEN.

Wahlenberg: Flora Suecica enumerans Plantas Sueciæ indig. post Linnæum. Upsaliæ. 8vo, pars 2da. 17s.

NORTH AMERICA.

Mitchell, Samuel L., M. D. Member of many Societies in America and Europe: Address pronounced before the New York Horticultural Society, in the Literary and Philosophical Hall of the Institution, on their Annual Celebration, Aug. 29. 1826. New York. Pamph. 8vo, pp. 52.

An eloquent discourse, embracing the most extensive views. Dr. Mitchell, in order to show how much nature is improved or rendered subservient to man by art, takes a brief survey of the globe, and especially of the western hemisphere, before it was subdued by cultivation. The forest, the bogs, the wild beasts, and the scattered tribes of savages, gradually give way to man, operating by fire and the tools and instruments of cultivation, and building houses, forming roads, and planting maize, beans, and tobacco. After a series of years, the productions of different and distant soils are reared where they never originally grew.

“The tillage of the earth, in extensive farms and plantations, has been denominated agriculture; while the more careful management of it, in narrow limits and small tracts, is termed gardening, or, in more modern language, horticulture. It is here that the lord of the soil manifests his greatest ability. Your weekly and elegant exhibitions show the degree to which the art has already advanced.

“In visiting the grounds of several members belonging to this society, the eye is attracted by alluring and excellent objects. It beholds culture by the best of tools and implements, the most effectual methods adopted to eradicate weeds, the greatest care taken to introduce proper manures, and excellent economy in the performance of labour. It is charming to examine

the orange and the camellia, as well as the rare plants of New Holland and the Cape of Good Hope, thriving under their care."

Dr. Mitchill recommends to the Society the extension of their intercourse with similar societies throughout the world, and mentions that seeds have been received by the New York Society from "public gardens in Batavia and Cuba, as well as from those of Paris and *Kew*" (an incidental confirmation of our Correspondent's remark, Vol. II. p. 313., on the *kind* of liberality which prevails in the last-named garden). Till a proper house and a garden are procured, the members are recommended to make experiments on their own grounds; and, if they cannot publish a volume of transactions from time to time, they are advised, instead of keeping "the history of their doings, like seed in a bag, within the scribe's desk, or leaving them to perish, like a plant by the way-side, with the fugitive columns of a newspaper, to fix them permanently in the pages of one of the respectable periodicals which our age has produced."

This is in the true spirit of patriotism; as soon as knowledge is obtained let it be universally diffused, and let every country in the world, and every human being in every country, have an opportunity of improvement. When this Society publish their transactions, we hope they will publish them in a form, and at an expense, which will come within the reach of practical men. Nothing, in our opinion, can be in worse taste than to publish agricultural and gardening works at a price which cannot be reached by farmers and gardeners. The late *Communications* of the Board of Agriculture of London, and the present *Transactions* of the Horticultural Society of London, are in this respect highly objectionable. The plain language of such practice is, you shall not benefit by us unless you belong to us; which is rising no higher in the scale of patriotism than the mark of a private individual who publishes to live.

A library is commenced by the New York Horticultural Society. "Books," Dr. Mitchill observes, "being the repositories of knowledge, are indispensable to the enquiring man. Their excessive multiplication, however, in modern times, increases largely both the labour and expense of study. Instead of attempting, therefore, to procure every publication bearing a horticultural, or a kindred title, efforts should be directed, as particularly as circumstances permit, to procure a moderate number of standard and classical volumes; and, when to those are added a good supply of the journals, magazines, and tracts upon the different branches of the subject, you will have made comfortable provision. Topographical maps of gardens, drawings of buildings, of the modes of affording heat and light, and of the mechanism for watering, are worthy of being collected. So are delineations of vegetables, remarkable for their rarity, beauty, or usefulness; and figures of the insects that are ever marring the gardener's labour: also a dry garden or *Hortus Siccus*."

After recommending more attention to the native timber and fruit trees, Dr Mitchill continues:—

"It may be expected I should speak to you of meteorological observations. I have, however, not much to say in favour of their utility to practical men like yourselves. The thermometer indicates the degree of heat, indeed, in the spot where it is placed, and therefore has its use in the green-house and the hot-house. It may be employed, too, to determine the temperature of waters from the well or the cistern. The barometer, which indicates the greater or less weight of the atmosphere, seems to be of very limited use in this country as a weather-glass. Neither of these instruments affords any means of predicting the heat or the cold, the winds or the storms, of the coming seasons; and the long columns of figures we find in some of the books under that title, are of as little real value as almost any thing we find in print. To note the rise and fall of the mer-

cury as minutely as some persons have done, seems to be a waste of time or a misapplication of attention. Though the hygrometer may give signs of the moisture in the air, and the ombrometer determine by approximation the quantity of rain that falls, yet they afford not the smallest relief when gardens suffer by too much humidity, or are scorched by drought. The electrometer is of as little practical use. Lightning breaks forth, and ceases again, according to the laws beyond mortal control. It has, nevertheless, been remarked that some trees are better conductors of this splitting and igniting element than others. The locust (*Robinia pseud-acacia*) is very frequently rent to shivers by it; while it is affirmed, on credible evidence, that the beech is never the subject of its violence. In some districts of our country, it is customary, I am told, for persons who are abroad during a thunder storm, to place themselves under the protection of this tree. If this, upon further enquiry, be found to be the fact, it might be a matter of precaution against its visitations to form hedges, coppices, and rows of this non-conducting fagus.

“I was charmed, a few days ago, with the examination of the young ladies, at one of our respectable schools, on botany. They answered the questions put by their instructress without hesitation, as they seemed to have learned the lessons with pleasure. There is, perhaps, not a more agreeable feature in our social system, than the exertion to inform the female mind. A bouquet in the possession of a belle attracted the notice of an inquisitive swain. She answered his queries by telling the ignorant fashionable the common terms of the flowers, accompanied with the generic and specific names, according to the classification of Linnæus. The beau was so humiliated and confounded, that he betook himself to the science, the better to qualify him for her company.”

After recommending attention to the destruction of weeds, and the study of the diseases of plants, Dr. Mitchill thus concludes:—

“Our organization fits us for labour, and experience amply proves the health and recompense that result from due application. Employment, indeed, is essential to happiness, Persevering and diversified industry begets skill; and by this can rocks be converted to fences, water be changed to land, the barren rendered fertile, wastes wear the aspect of elegance and plenty, and the choice productions of nature be augmented and meliorated; and, if it be demanded where improvements in horticulture shall end, the answer is, that they surpass our present knowledge, and defy the existing rules of calculation!”

An Appendix contains some notes, of which the following, by Dr. Pascalis President of the Linnæan Society of Paris, appears to us worth quoting:—

“The process of abstracting electricity from the clouds, by planting poles covered with twisted straw, as mentioned last year, and thereby guarding cultivated fields against the destructive effects of hail storms, has been fully and successfully exemplified in extensive districts of Germany and Italy, in or about the lower Alps and Apennines; and it is now still further ascertained, that not only metallic, but ligneous or vegetable points, can divert torrents of electricity in different currents; also, that this element is as necessary to plants as pure air or other gases, because, by their sharp-pointed leaves and thorns, they abstract it from the atmosphere. This subject, which so strikingly evinces the wisdom of the Creator, was experimentally demonstrated by a Linnæan member, who has subjected electricity to positive and negative evolutions, by means of thorny shrubs, and as easily as Franklin drew it from the clouds with a child’s plaything — a flying kite, armed with a metallic point!”

ART. V. *Literary Notices.*

NATURAL History of the Auricula. — Captain Thos. Brown, F.R.S.E. &c., is preparing for publication a work on the auricula, which is to appear in 4to numbers every two months, containing four plates, coloured after nature. This work will contain about sixty of the most beautiful varieties of that esteemed flower, with a complete account of its natural history, mode of cultivation, admixture of soils, &c., and a list of the known varieties, by whom they were raised, together with a catalogue of the best collections in Great Britain. (*Brew. Ed. Jour. of Science*, July, 1827.)

The works of our celebrated botanist, Robert Brown, have recently been translated into German, and published at Smalcalden, in 2 vols. 8vo. (*Foreign Quar. Rev.*, July, 1827.)

A View of the Vegetable Kingdom of Java, by the celebrated Dutch naturalist, Dr. Blume, has recently been published at Batavia, in 15 parts. The same botanist intends publishing an extensive work on the plants of the Dutch East India possessions. (*Ibid.*)

A Pomological Magazine is announced by Messrs. Ridgway, to appear on the first of October next, in monthly 8vo numbers, with four coloured plates, at 4s. 6d. each. The publishers state “that they have secured the assistance of two gentlemen, whose intimate connection with the Horticultural Society of London gives them ready access to the most authentic sources of information upon all points connected with Pomology.” One of these two gentlemen must, of course, be Mr. Sabine; so that this work may be considered as a substitute for the quarto one of which a prospectus was issued two years ago (*Gard. Mag.*, vol. i. p. 88.), at the same time that a quarto work on plants was also announced. We have already expressed our hope that the latter work would be given up (*Gard. Mag.*, vol. ii. p. 545.), and are now glad to find that the work on fruits will be published in such a way, as to render it accessible to those readers to whom it will be most useful — we mean the nurserymen. If the *Pomological Magazine* be got up with that care which the present state of pomological science admits, it will be of real value; but, if it merely contain coloured figures of the fruits, without buds, leaves, blossoms, shoots, branches, and, in many cases, the general contour exhibiting the character of a full-grown tree of each variety, its usefulness will be materially diminished. It is to be hoped that only the very best sorts of each fruit will be commenced with, for the immediate guidance of purchasers from the nurseries. (See p. 52.)

The next periodical which we should like to see originated, would be a *Magazine of Natural History*; not an expensive work of coloured plates, but a vehicle of useful and curious information, chiefly on the plants, animals, and minerals of the country. When once all science is explored to a certain extent, the greater part of the literature of the world will be comprised in newspapers and periodicals. All that is worth knowing will be acquired at school before the age of twenty-one; and whatever it is thought worth while to add to the stock of knowledge will be obtained, as it arises, from the particular periodicals that bear upon the leading pursuits of the individual. If we had room, it would be easy to show that the general tendency of things is to this result. After a certain stage in the progress of knowledge, it will become easier for a youth to know every thing, than it is now for him to know a good deal.

Many branches of knowledge at present are rendered obscure by a multiplicity of words, and by mystical doctrines, which the growing taste for facts will one day sweep entirely away. When very little is known of any subject, it is natural to say a great deal about it, in order to conceal our ignorance.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

THE Botanic Garden of Perpignan is of little consequence, but there are, nevertheless, several scarce plants in it, habituated to the open air. *Solanum bonariense* and *Schinus Môle* were in the utmost luxuriance; there was also a fine tree of *Stillingia sebifera*. The lecturer here has 200 *fr.* (about 18*l.* sterling) per annum, with 200 more to pay the incidental expenses of the establishment, as utensils, flower-pots, new plants, &c. The head gardener is better off: he has 400 *fr.* for the garden, and 700 for taking care of the *pépinière*, or nursery, with which, however, he has to pay his assistants. (*Arnott, in Jam. Jour.*, June, 1827.)

Syntherisma.—A grass of this name, a native of Carolina, and described by Walter in his *Flora* of that country, is recommended by M. Bosc, in the *Annales de l'Agriculture Française* (tom. xxxvi. p. 212.), as very suitable for culture in the poor soils of the South of France. It is said to resemble the *Panicum sanguinale*, to grow rapidly, very high, spreading, bushy, and rooting at the joints like the Fiorin. It may be cut for hay or soiling three times a year. It has been introduced in the neighbourhood of Bourdeaux, from whence, or from M. Vilmorin of Paris, seeds may be obtained. (*Bul. Un.*, April, 1827.)

Method of destroying Moles in Meadows or Gardens.—Collect earthworms, kill them, and mix them up with the powder of nux vomica. After the mixture has remained in a heap twenty-four hours, take the worms, and place one or two here and there in the routes and holes of the moles. The desired effect is said to be a certain result. (*Bul. Un.*)

Whip-grafting, in France, has the more elegant appellation of (grafting *en bec de flûte*, mouth-piece of the flute,) flute-grafting.

Metamorphosis of Male and Female Plants.—Some curious experiments have been made on this subject by Drs. Autenrieth and Maux, of Tubingen. The difference between a male and female plant may be distinguished even in the seed, for example, in that of the common hemp; the round and elliptical seeds of which produce in general female plants; the oblong seeds, on the contrary, which have a thin edge projecting from the side of the radicle, produce male plants. The male seeds are also heavier, and they have the radicle longer than the female seeds. The radicle of the male plant develops itself sooner, as the males also come sooner into flower, and flower more abundantly, than the females. The stalks and the leaves of the male plants are commonly longer and thinner, and their flowers more exposed, than those of the females.

Notwithstanding these very essential differences, experience has proved that the male seeds, or those which are the more heavy, produce female plants, and the female seeds form male plants, if external circumstances are

changed; so that each seed appears to contain a germ for the developement of either sex. The developement of male plants is favoured by a soil dry and sandy, with little manure, by covering the seed lightly, and by the more free influence of the light of the sun on the plants developed; the formation of females, on the contrary, is favoured by a fresh soil well manured, by a thicker covering on the seed, and by the more feeble influence of the light. This experiment has been made in sowing hemp, spinach, and annual mercury, and in observing the situation of diœcious plants in a wild state. The weather and the season of the year also naturally concur in influencing materially this different developement. Drs. Autenrieth and Maux raised hermaphrodite plants of hemp, by sowing heavy or male seeds in a dry soil, light, and little manured, and only exposing the plants to a moderate degree of light and humidity. These hermaphrodites, in size and appearance, hold a middle place between male and female plants. Female plants change often into hermaphrodites, by transplanting them into a dry soil more exposed to the light; wounds, on the contrary, and repeated pruning, easily change a male plant into a hermaphrodite one; for instance in hemp, the nettle, spinach, and in *Lýchnis dioïca*. These hermaphrodite flowers often produce good seeds. In general, male plants change more easily into females, than females into males. Female plants support wounds and cutting much better than males. In monœcious plants, the separation of the sexes, and their stronger or weaker developement, depend very much on circumstances. A melon, in a pot, for example, little watered, much exposed to the sun, and several times pruned, will not form female flowers, but several hermaphrodite and some male ones; another melon in a larger pot, watered a great deal and never pruned, will carry some perfect female flowers. Even in plants commonly hermaphrodite, exterior accidents, especially the season, greatly influence the preeminent developement of the one or the other sex. The *Malvæcæ* and *Caryophýlleæ* afford numerous examples.

With respect to the influence of the seasons on the developement of the different sexes in plants, Drs. Autenrieth and Maux observe that

1. The middle of winter is favourable to the pre-eminence of the feminine sex in diœcious plants;
2. The commencement of spring favours the formation of hermaphrodites, with the more early developement of the male sex;
3. The beginning of summer favours the perfect formation of hermaphrodites;
4. The middle of summer is favourable to the predominance of the male sex in diœcious plants;
5. The end of winter still favours the perfect formation of hermaphrodites;
6. The end of autumn favours the formation of hermaphrodites, with a more early developement of the feminine sex. (*Bul. Un.*, 1826.)

The liquorice plant (*Glycyrrhiza glabra*) is cultivated in Bourguel in France, in a manner somewhat analogous to Mr. Judd's method of growing horse-radish. (*Encyc. of Gard.*, § 4114.) Trenches as deep as the soil will permit, and about two feet wide, are opened three feet from each other; the bottom of the trench is dunged and dug, and two rows of cuttings of the roots are planted as close as possible to its sides; these are covered a few inches, by sliding down a little earth from the ridglet; as the plants grow, more earth is slid down, till, at the end of the first summer, the whole field is level. In the second summer, every pair of rows are earthed up, from the wide interval between; during the third summer, nothing is done; but, in the October or November following, the crop is dug up, and, while the ground is being trenched for that purpose, it is sometimes planted as before for a repetition of the crop. In other cases, a crop of barley, and two suc-

ceeding crops of clover, are taken : after which, the ground, being again trenched, is found to contain a number of liquorice roots ; the plant, as it has been elsewhere noticed, being difficult to eradicate when the soil and climate are suitable. (*German Gart. Mag. Old Series, 1824.*)

Anise (*Pimpinella Anisum*) is much cultivated in the neighbourhood of Thoulouse. It is sown in spring, when all danger from frost is over, on light soil, hoed and wed once or twice, gathered in August, and immediately threshed. The seeds, it is well known, are crushed like those of the poppy, rape, &c. for oil, and distilled for flavouring spirituous liquors. (*Bul. Un.*)

Insalubrity of the neighbourhood of dunghills. — A writer in a French agricultural journal points out, with great force, the injury done to the atmosphere, as far as respects the breathing of animals, by the decay of animal and vegetable matter in dunghills, ditches, ponds, wells, and especially in sewers, and the cess-pools of water-closets. Wherever health is an object, he recommends neutralising the mephitic exhalations which arise from these places, by daily strewing over them, from a dredgebox, powder of lime, of which a very small quantity is said to have the desired effect. Though there is nothing new in this, yet it affords important hints for those who are employed to arrange the detail of dwelling-houses, and out-of-door offices ; and also to those who live in confined situations.

Colchicum. — In the British newspapers a case was lately related, in which the bulbs having been eaten by a family, boiled along with potatoes, proved poisonous ; and a French veterinary journal relates the case of twelve cows, which had been fed with the leaves and seed-vessels, and soon after showed the most alarming symptoms. By the use of strong decoctions of linseed, they were recovered after two or three days. (*Bul. Un.*)

The cantharides fly (*Lytta vesicatoria* of Gmelin), a coleopterous insect used in the *Materia Medica* in the preparation of blisters, is generally collected from the olive-trees in Sicily and the south of Spain ; but a French writer, observing that the insect is indigenous in France, proposes to introduce it to the rural economy of his country. (*Bul. Un.*)

GERMANY.

The Flanders' Agriculture is duly appreciated by M. Von Schwerz, the Director of the Agricultural Institution at Hohenheim, in Wurtemberg, who is using every effort to introduce it to his country. Every year a certain number of his pupils are sent to travel, and work three years, on as many farms, in different places of Holland and the Netherlands. (*Bul. Un.*)

Forest Management. — In the third volume of the *Sylvan*, a work published annually at Leipzig, on the subject of Forests and the Chase, a list is given of the books on this subject, published in Germany during the years 1824 and 1825. They amount to 44 different works, and show, by the seemingly unimportant parts of the subject (for instance, *Messkunst der Forstw.*) which are treated in separate works, the great attention paid to the subject of forests in Germany, as well as the national talent of book-making.

Mouldiness in the timber of a house, it is found, may be prevented by washing it over with a weak solution of muriate of mercury. The repair of a church at Potsdam, the timber of which, though quite new, was covered with mould, gave rise to the discovery. (*Bul. Un.*)

Prussian Gardening Society, Berlin, March 11. 1827. — The following speech of Mr. Ludoff, counsellor of finances, has been communicated to us by Mr. Otto, the general secretary : —

“ Having been deputed by the Society to inspect the school of gardeners, the management of which is committed to your care, I consider it my duty to give you a general sketch of its present state ; especially as to the results

of the last examination of the pupils, those who have entered this year into the second class, as well as those who have gone through the second and third classes at Potsdam.

“This institution has been greatly improved since its first foundation, but it requires some more improvements before it can be said to have reached that degree of perfection of which it is capable. Still, however, it has been as useful as it could be, under all existing circumstances. From the annual increase of the pupils alone we may judge that the public takes an interest in this institution, there having been forty pupils received in it during the three years of its existence; and although some of these may have been impelled by poverty (four youths per annum being received gratuitously), yet we may infer, from the progress they have all made, that the majority have been attracted by a love for the art. The examination of the thirteen pupils received last year has been very satisfactory; and, from the knowledge, both theoretical and practical, which they have imbibed in the short period of one twelvemonth, we may form the most sanguine expectations respecting their future progress, especially of nine of the number. It appeared that they have greatly profited by the three lessons a week which they receive in the elements of botany, and the nomenclature of plants. Most of the pupils have made progress in drawing, which had already been extended to 132 objects; their knowledge of geography, including the physical description of the earth, which they receive from Professor Dittman, proved very respectable. Not less had they profited by Dr. Bergmann’s lectures on chemistry and mineralogy. They also produced themes on the subjects of their instruction, and the diaries, which each of them has to keep, were mostly executed in a satisfactory manner. Their answers to all the questions as to the practical cultivation of plants, vegetables, and flowers, were good. Their general conduct and industry had been such, that there had been no punishment inflicted in the establishment for the whole year. Under all these considerations, all the pupils were forwarded to the next class at Potsdam, with the exception of one who was returned on account of his youth and bodily weakness.

“The examination of last month, with the sixteen pupils who had been transferred there during the two preceding years from the establishment at Schönberg was equally satisfactory. With the exception of one, the pupils had invariably displayed steadiness of conduct and industry in their studies.

“The seven pupils of the second class are practically trained by the royal gardeners of the palace; besides which they are theoretically instructed in the cultivation of vegetables and trees, arithmetic, algebra, and drawing, in its different branches.

“The nine pupils of the third class are instructed in the following branches: — 1. A continuation of the instruction in the culture of fruit and other trees. 2. On hot-house gardening (*treibgärtnerci*). 3. Geometry, with practical surveying and measuring. 4. Continuation of the instruction in botany. 5. Drawing of plans, laying out of kitchen-gardens, orchards, and pleasure-grounds, with a calculation of the expenses. 6. Themes on the most important subjects connected with gardening. In all these branches their progress had been satisfactory; and three of the number were discharged as competent gardeners, with permission to seek employment in the royal gardens for their farther improvement. The remaining six have been admitted in the fourth class, as garden-artists (*garten künstlerer*).”

The taste for gardening is gaining ground in Prussia; the Island of Peacocks (Pfauen Insel) has been so much beautified, that it may be pronounced the most perfect garden scene of its kind in Prussia; the gardens of Sans Souci have also been enlarged and improved. Prince Charles has had a new park made near Potsdam, called Glinike, which is very beautiful; and

connected with it, and the other works (*anlagen*) of the place, is a Russian colony of twelve houses, as a remembrance of the late war, laid out in the taste of their own country. The forcing of fruits (*obst-treiberei*), at Potsdam, has been greatly enlarged, and various kinds of fruit brought forward at a very early period of the season. Our botanical garden has received various additions from Mexico and Peru, mostly new and undescribed, specimens of which will be sent to England as soon as they can be conveyed. — *Fred. Otto. Berlin, March 11.*

The plough has been used for excavating a water-course, for the use of the Salt-works of Friederichshall, in Wurtemberg, drawn by eight horses. It was found to do the work of nearly 1,500 men, and to produce a saving of 32,000 days' work. The water-course extended several miles.

Restoring vegetable Life. — This object may in many cases be effected by a powerful stimulant, and, for all practical purposes, nothing is better than hot water, as any person may prove to himself with a withered nosegay. Camphor, however, is a still more powerful stimulant; and, by combining this substance with water by the medium of alcohol, as much can be effected in the way of restoration to life, as is practicable in the vegetable kingdom. In the *Transactions of the Prussian Gardening Society* directions are given for dissolving the camphor in alcohol to saturation, by adding it till it remains solid at the bottom of the vessel. The alcohol so prepared is to be added to water in the proportion of four drops to an ounce, and the two fluids beat together, till the flocculi of camphor disappear. Plants or parts of plants are then to be immersed in this liquid, but not longer than four hours; for, if the vital principle cannot be restored in that time, they may be considered irrecoverable.

A species of sea-weed has recently been brought into use in Germany for stuffing cushions and mattresses. "It is said to be capable of resisting humidity altogether, and that it will not harbour any infectious or contagious matter. No vermin will live in it. Some of the prisons and public establishments have already adopted it. This material is found in the north of Germany, and has been first applied to this use by Mr. Warburg, a merchant of that country. If it answers the description, the discovery will be a most valuable one." (*Times, August 6.*)

The central Prefecture of the Rural Society of Wurtemberg (Central stelle der landwirthschaftlichen Vereins in Stuttgard) have lately constituted what is called a Botanical Travelling Union, for the purpose of collecting specimens of plants in different parts of Europe, and distributing them equally among the different members of the Union. In *Dr. Brewster's Journal* for July, Professor Hooker has given some account of this society, strongly recommending it to the patrons of botany in Great Britain. The annual subscription is 15 florins (reckoning the louis d'or at 11 florins), and this sum may be forwarded, and the specimens received in return, through John Hunneman, Esq., 9. Queen Street, Soho. Professor Hooker has received upwards of two hundred rare species collected in the Tyrol for one year's subscription. Last year, one botanist was sent by this Society to Istria and the shores of the Adriatic, and another to Sardinia, and their collection will soon be divided. "In Germany, especially, the art of preserving plants is carried to a very high degree of perfection; and the advantage which the student derives from examining such specimens is incalculable, almost equal to that of doing so in the living state. Among many others, MM. Hoppe, Hornschuch, Funck, and Siebor have combined a great love of botany with a happy tact in all that concerns the preparation and drying of specimens; and, possessing also a deep and scientific knowledge of the plants themselves, these naturalists have given to the world collections which excel every figure, and are necessary to every student. The trifling labour attending the manual operation is amply

compensated by the beautiful scenery into which the travelling botanist is sure to be transported; by the impressions (almost never to be effaced) which the very circumstance of his discovering and gathering such and such a plant in a state of nature are sure to make upon him; and by the gratification in prospect of distributing to persons of a kindred mind with himself those vegetables, from the acquisition of which he has already derived so much pleasure." (*Brewster's Ed. Jour. of Science*, July, 1827, p. 24.)

ITALY.

At a recent meeting of the Academy of the *Georgifili*, at Florence, Dr. Guishi read an interesting memoir on the propriety of applying the principle of freedom adopted in the profession of the liberal arts to some others, and particularly to the profession of the law. A memoir was also read on the necessity of giving females an education suited to their condition, and conformable to the diffusion of knowledge. (*For. Quar. Rev.* July, 1827.)

The *Ornithogalum*, roasted as they do chestnuts, is eaten by the Italians, the wild yellow especially, with oil, vinegar, and pepper; and the small tuberous roots of *Gràmèn amygdalòsum* (*Cyperus esculéntus?*), which they also roast, and use in broth as a great restorative. (*Evelyn.*)

PORTUGAL.

The country south of the *Tagus* is, with the exception of that part of it nearest the river, chiefly covered with oak and cork trees; and the under-wood, for many leagues together, is composed of the gum-cistus. It is with this shrub that the bakers at Estremos, and throughout the Alemtejo, heat their ovens; and the smell of it, which every where prevails, is truly delightful; although to some strangers it is at first very overpowering.

Apples I never saw of so large a size, or of such excellent flavour, as those of Montemor o Novo in the Alemtejo. This town is remarkable for the immense quantities of apples and quinces which abound in the whole of its neighbourhood, and of these fruit trees the hedges are formed, the species of the former called *bem postas* are of deserved celebrity.

Moss Roses. — A few leagues from Evora, in a north-west direction, is a small village called Alcovas de Roses, from the quantities of beautiful moss roses growing wild about its hedges in every direction. They are as numerous as the blackberries in our own hedge-rows. (*Extracted from Sketches of Portugal, by A. P. D. G., and sent us by Clericus, June 2.*)

HOLLAND AND THE NETHERLANDS.

The Royal Society of Agriculture and Botany of Ghent held a meeting on June 29th, and gave their prizes to the proprietors of the plants exhibited to which they had been adjudged. "On this occasion we observed a cypress, with inscriptions expressing the regret of the Society for the loss it had sustained in the last twelve months by the death of M. M. Coninck (formerly Minister of the Interior), M. Fermondt, and the Marquess of Hastings (formerly Lord Moira). The Marchioness of Hastings has been for some time at Ghent. She, doubtless, was ignorant that the late Governor General of India had been a member of the Society, and one of the benefactors of the botanic garden, and the directors of the Society, on their part, did not know that Her Ladyship was in the city. Going to the exhibition with her family, she was much affected at seeing this expression of the gratitude of the Society." (*Brussels Paper*, July 5.)

The Botanic Garden of Brussels has lately been materially improved, and several thousand species added to the collection. (*Jour. d'Agr. du Royaume des Pays Bas*, Juin.)

RUSSIA.

An Economical Society, and a School for the education of future Agriculturists, have recently been established at Moscow, through the exertions of Prince Galitzin. "The branches of instruction are the following:—the Russian language, arithmetic, geography, statistics, rural architecture, surveying, book-keeping, agricultural chemistry, botany, the physiology of plants, the management of woods and forests, technology, farming, and the veterinary art. The course lasts five years. The Society publishes a journal in the Russian language, which has already accomplished much good." (*For. Quar. Rev.*, July, 1827.)

DENMARK.

Hamlet's Garden is situated in the neighbourhood of Elsinore, and is the favourite promenade of the inhabitants of that seaport. It consists of two parts, the upper and lower garden. The lower garden is laid out in the French style, but the upper part is in the English manner. The palace of Marienlyst (*fig. 29.*), Mary's delight, stands in the lower garden. It was

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intended for the residence of His present Danish Majesty, when Crown Prince. From the hill behind the palace may be enjoyed a marine prospect, which, travellers say, exceeds every thing between Denmark and Naples. Near Hamlet's Garden is Hellebek, a village belonging to Count Schimmelmann, who for many years was one of the cabinet ministers of Denmark. The situation of this village, close to the sea, combines such a variety of marine and rural scenery as might present many interesting studies to the painter. The beech, the national tree of Denmark, flourishes here in superlative vigour, overtopping the oak, of which, however, many very fine specimens are also observed. Nature in this place seems to be left to herself, and altogether divested of those ornaments, which, in too many cases, injure what they were meant to improve. The traveller would scarcely suspect that he was approaching a nobleman's seat, when he enters Hellebek. (*Feldborg.*)

NORTH AMERICA.

Linnean Botanic Garden near New York, April 20. 1827. — Among other novelties which I have lately introduced here is a large-flowered variety of *Fœonia moultan*, of the colour of the common cabbage rose, direct from China. *Camellia japonica* var. *coccinea*, which in 1826 produced scarlet flowers, has this year produced striped ones. I have *Tris purpurea* and *lutea* blooming from the same root, which last year produced only purple flowers. I am cultivating extensively the *Rhus coriaria*, with a view to its being planted on a large scale, to supersede the necessity of importing the ground sumach from Sicily. One of the greatest ornaments of my garden is the *Berberis Aquifolium*, with its fine large pennate leaves, and large clusters of bright yellow flowers. My plants, which are from the original seeds collected by Lewis and Clarke, are about $2\frac{1}{2}$ feet high, and I think they have nearly attained their full height. — The fruit department was the particular study of my late father, who died in 1802, and it has been my study for nearly 80 years. I have all the best fruits of Europe in my collection, and have originated a number here, which are distinguished in my catalogue by my prænomen. — *William Prince.*

Emigration to the Canadas. — Unquestionably, no man who is willing to make the slightest exertion can starve in America. If he will undertake to clear a farm, the means of subsistence are at once secured; should his habits unfit him for such an undertaking, the price of labour is so high, he is sure of lucrative employment in whatever capacity he chooses to enter the service of a master. So far the prospects of the emigrants are encouraging and agreeable.

But let us turn for a moment to the other side of the picture. Let us contemplate the exile seeking the portion allotted to him in the wilds of the forest, with the compass for his guide, doomed to endure, in his wretched log-hut, the rigours of a Canadian winter, without a human being for many miles round to break his solitude, or assist his labours. No village, no shop of any description, no medical advice within his reach, and worse than all, the lonely tenant of the woods is generally remote from any market, where he may dispose of the hard-earned fruits of his labours. (*Personal Narrative of M. de Roos.*)

Native Country of the Potato. — There has been considerable discussion, you know, concerning the origin and derivation of this esculent vegetable. It has been enquired with some solicitude, what is really the country of the *Solanum tuberosum*? and where does it exist without cultivation at the present day? I consider the articles I have received from Chile as affording answers of a satisfactory kind to both questions. The potato, whence our domestic stock is derived, is an inhabitant of South America, and is, at this time, thriving without human care or protection in Chile. The specimens are small, some of them being not so large as nutmegs. (*S. L. Mitchell, in a letter to N. F. Carter, of the New York Horticultural Society.*)

Jamaica Society for the Encouragement of Agriculture, and other Arts and Sciences. — Several members were elected, and the thanks of the Society were voted to Messrs. R. Smith, W. King, Dr. Adolphus, and Dr. Miller, for books; to Mr. Atkinson, for a rain-gauge; and to Dr. Adolphus, for a collection of minerals.

It was voted that the medical officers of the navy and army should be permitted to visit the Society's apartments, examine the specimens, &c., of natural history, and consult the books in the library.

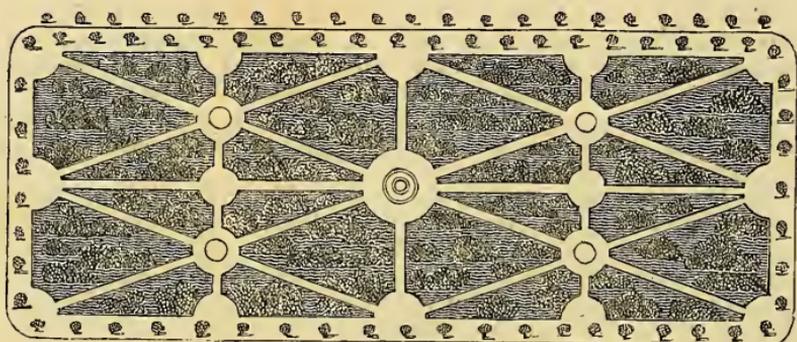
The following prizes were awarded: —

Mr. Thompson of Happy Grove, for yams, 1*l.*; Mr. C. Satchell, for Indian yams, 13*s.* 4*d.*; Mr. J. Blake, for hallelujahs (?), 13*s.* 4*d.*; Mr. C.

Satchell, for celery, 15s. 4d.; Mr. Brookes, for strawberries, 15s. 4d.; Mr. Brookes, for flowers, 15s. 4d.; Mr. R. Smith, for flowers, 15s. 4d.; Rev. T. B. Turner, for wax, 1l. 6s. 8d. The Society granted Mr. Macfadgen the use of their rooms for botanical lectures. (*Copied from the Jamaica R. Gazette by Y. B.*, June 21.)

Botanic Garden of Mexico. (fig. 30.)—An eloquent description of this garden is given by Humboldt. When Mr. Bullock saw it in 1825, the pension of the curator was about to be discontinued from the exigencies of the state. It is situated in one of the courts of the vice-regal palace; and, though in the centre of a large and populous city, the plants seemed in perfect health and vigour. It is laid out with paved walks, bordered with ornamental pots of flowers, and shaded with creepers trained over them on trellis-work. Walks diverge from a large stone basin in the centre, constantly supplied by a fountain with water; which, in small rivulets, is employed to irrigate every part of the garden. All the fruits both of Europe and India flourish in it. Mr. Bullock brought home models of most of the curious sorts, which are exhibited in his museum. He also brought a variety of seeds, and various plants, which were chiefly presented to the

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Horticultural Society, or disposed of to Mr. Tate, of the Sloane Street Nursery. (*Bullock's Mexico*, p. 182.)

SOUTH AMERICA.

A *Nursery Garden* has been established in the city of Caraccas, by Dr. Fanning, an American, for the purpose of collecting the most useful and ornamental plants of Colombia. He is also forming a botanic garden in the vicinity, under the patronage of Bolivar. (*New York Paper.*)

Orchideous Plants of Chile.—In this country, which, in the eyes of botanical geographers, forms a vegetative region of itself, which extends through 20° of southern latitude, and which has a surface varied with all the irregularity of mountains covered with eternal snow, rich valleys, and extensive plains, no more than three species of orchideæ are at this moment recorded to exist. (*Lindley, in Brand's Journal of Science*, Mar. 1827, p. 45.)

Botany of Chile.—From the copious materials relating to the vegetation of Chile which exist in this country, much information of the most important nature is to be derived; but from no source so extensively, perhaps, as from the collections formed for the Horticultural Society by Mr. James M' Rae. (*Lindley, in Brand's Journal of Science*, Mar. 1827, p. 44.)

Desiderata from South America.—Doctor Hamilton of Fareham has circulated a paper, with a view to procure seeds, flowers, or leaves of the following plants:—1. The Cow-tree, Palo de Vaca, or Arbol de

Leche, of the coast of Caraccas. (*Humboldt, Personal Narr.* p. 212–215.) 2. Mauritia Palm, Tree of Life, Arbol de Vida, Murichil, or American Sago Tree; the bread, wine, lodging, and clothing of the Indians on the northern banks of the Oronoko. 3. Ynga fæculifera, Pois Doux, from the vicinity of the city of Santo Domingo, Hispaniola; with pods about 10 inches long, which form an article of diet highly nutritive.

To preserve the Seeds in a state fit for vegetation, he says:—Fill an old cask about half full of moist earth; then put the seeds, those especially which are of an oily nature, and consequently liable to spoil soonest, as near the centre of the cask as possible; then fill up the remaining portion of the cask with moist earth, ramming it tight, and heading the cask so as to make it as completely air and water tight as possible, and stow it away in a place to which no salt water is likely to reach. In this way, seeds may be brought, with perfect safety, from the East Indies or New Holland.

To preserve the Flowers.—Gather them in various stages, from the young bud to the full-blown blossom, and press them carefully between several folds of blotting paper, changing them into dry parts of the paper, every second or third day, until all their moisture is absorbed; and then press them between the leaves of some book of sufficient size, until an opportunity of transmitting them to Europe presents itself. The same cautions apply to leaves, which should always be the most perfect. — *Fareham, near Plymouth, May 12. 1826.*

ASIA.

The Silk Tree, Acacia julibrissin, Durúkhti ubrishoóm, Persian.—This tree droops like the willow; the flower has silky fibres, of a delicate pink colour, and would resemble a swansdown puff, tinged with rouge. It sends forth a most fragrant perfume, and its name, Durúkhti ubrishoóm, the silk tree, bespeaks its appearance. It thrives in Teheraun in the open air, the thermometer ranging between 16° and 110° Fahrenheit; but it does not succeed so well at Tabriz, where the temperature is colder and more variable. It grows wild in the forests bordering on the Caspian Sea. There is one in the garden of the Prince Royal at Tabriz, and another in possession of the English officers resident there, who are obliged to protect it from the winter cold. (*Keppel's Jour. from India.*) The finest plant in England is in the Bristol Nursery; it covers the front of Mr. Miller's dwelling-house, is now covered with bloom, and is worth going 20 miles to see. — *S. Aug. 20.*

The Rasteraun, most probably the Hibiscus syriacus, is remarkable in its appearance, and resembles a large rose tree. It grows to the height of twenty feet; the trunk is nearly two feet in circumference; the flower, though larger, resembles the English hedge rose, and has five leaves; the calyx is in the form of a bell. The leaf of the tree is small, smooth, and shining. The branches droop gracefully to the ground, and the flowers are so abundant as completely to conceal the stem of the tree. Numbers of this species are to be seen in every garden in Teheraun. (Keppel's Journ. from India.)

Botanic Garden of Ceylon. — Sir Alexander Johnston, while President of the Council in Ceylon, was convinced by a long residence in Ceylon, that the nature and value of the different vegetable productions of that island were not sufficiently known, that the quantity of those which were the most useful might be greatly increased, and their quality greatly improved, were the attention of government and the public properly called to the subject; and that the very best way of attaining this object would be for government to establish a botanical garden in a central part of the island, and subordinate gardens in the several provinces in which there was any material difference of soil and climate. Sir A. Johnston, therefore, in

1810, when he came to England, at the request of the Ceylon government, for the purpose of proposing different improvements which were deemed of advantage to the island, submitted to His Majesty's ministers a plan of establishing a botanical garden of the description which has been mentioned. His Majesty's ministers after consulting with the late Sir Joseph Banks, adopted Sir Alexander's plan, and attached a salary of 500*l.* a year, exclusive of house-rent and travelling expenses, to the office of botanical superintendent of the Royal Botanical Garden in Ceylon, who was to have a pension in case of ill health, or twelve years' service on that island. Independently of other objects, one great object which Sir Alexander had in view was, to place the garden in Ceylon in communication with establishments in different parts of Asia, Africa, and Europe, so as to enable it to ascertain what productions of any quarter of the world might be introduced with advantage into Ceylon, either as an article of food, or as one of manufacture, and also what production of Ceylon could be introduced with advantage into any other quarter of the globe, and thereby enhance the value abroad of the productions of Ceylon, by increasing the demand for them, and improve the situation of the inhabitants, by increasing the quantity and description of vegetables which might be used as food by them. This plan was of the more importance, as it was connected with another plan, which was also proposed by Sir Alexander, and adopted by His Majesty's government, for doing away with the restrictions which existed in the King's settlements of Ceylon, as they do to this day in the Company's settlements throughout India, against Europeans holding any land; and on the contrary of encouraging Europeans, by giving them grants of land, to become landholders in Ceylon, and to employ their capital in the improvement of the agriculture and manufactures of the country. Sir A. Johnston, previous to his submitting the above plans to His Majesty's government, in order that he might be enabled to give government such information upon the subject as they might require, caused the most detailed reports to be made to him, by the natives of the different parts of the island, of the nature of the different vegetable productions of the country, which were of the most general use, either as food, or as raw materials for manufactories, or as articles of export.

Sir Alexander Johnston has favoured us with copies of many of these reports, and as they contain much useful and new information, we shall from time to time extract from them what we consider will be interesting to our readers. (*Extracted from a communication by Sir Alexander Johnston, August 7.*)

Dr. Walleck of Calcutta, the celebrated botanist, has gone with the English embassy to Ava, where he has already made great acquisitions in his department of science. (Newsp.)

AUSTRALASIA.

Australian Agricultural and Horticultural Society, August, 1826. — Premiums were offered for various agricultural productions, and for the best treatise on Australian agriculture; the best treatise on Australian gardening; a treatise on the best and most economical mode of preparing extract of bark from the mimosa, and other trees of the colony; on the best and most economical mode of preparing the potash of commerce from the woods of the colony; and on the best mode of preparing the castor oil from the seed of the *Ricinus communis*.

The Honourable Alexander M'Leay, F.R.S. &c. formerly Secretary to the Linnean Society of London, is the Vice-Patron of this Society, and, among its Committee, we observe the name of Robert Townson, LL.D. the celebrated author of *Travels in Hungary.* (*Colonial Times.*)

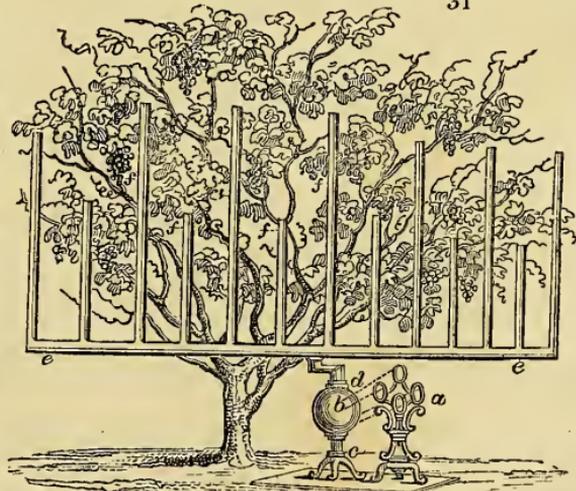
Australian Agricultural and Horticultural Society, February, 1827. — A report was read, by which it appears that the crop of wheat was above an average, and the crop of maize promised to be abundant, where it was sown in rich alluvial soil, but a failure on fresh land. Tobacco is said to be less extensively grown, since the reduction of the duty. The condition of the vineyards is mentioned as extremely luxuriant. The influence of the turf-club, in encouraging the breed of horses, forms a subject of congratulation, as also the increasing numbers, and the improvement in quality, of the breeds of horned cattle. An improvement of the quality of wool produced from sheep of the Saxon breed is also noticed. (*Colonial Times.*)

The fruits of New South Wales, and the general state of gardening in the Colonies in that part of the world, are very fully given in *Two Years in New South Wales*, by P. Cunningham, Surgeon, Royal Navy, lately published. The indigenous fruits are not very numerous, but every European fruit thrives there freely in the open air; and most of the tropical fruits grow in warm situations, and require only the protection of a glass frame during the season of ripening. ²⁵

ART. II. Domestic Notices.

ENGLAND.

CONCENTRATION of the Sun's Rays for the Purpose of accelerating Vegetation and the Maturation of Fruits. — Mr. Gauzen, the author of the plan for blooming fruits (p. 34.), is about to bring forward a very ingenious invention for hastening the maturity and increasing the flavour of fruits, and for flowering, with greater vigour, every description of exotic plant. The effect is produced by concentrating the sun's rays by means of lenses (fig. 31. a), which may be self-adjusted by watch machinery, on a hollow cast-iron ball (b), with an opening at the lower extremity (c), to admit the air to be heated in the ball, and another on the upper surface (d), to allow the heated air to pass off through iron tubes, which it heats in its passage. These tubes (e, f) are distributed at pleasure among the trees or plants on which it is intended to operate. In the case of a wall tree (fig. 31.), the arrangement would be very simple, and consist of one main tube (e e), with a number of branch tubes (f f f) of different lengths, so as to distribute the air over the surface of the tree and wall. Mr. Gauzen has tried many experiments with this engine, some of which, with a more detailed account of the invention, will be found in our succeeding number. He also informs us that by November he will be able to announce where the machines may be purchased, to-



operate. In the case of a wall tree (fig. 31.), the arrangement would be very simple, and consist of one main tube (e e), with a number of branch tubes (f f f) of different lengths, so as to distribute the air over the surface of the tree and wall. Mr. Gauzen has tried many experiments with this engine, some of which, with a more detailed account of the invention, will be found in our succeeding number. He also informs us that by November he will be able to announce where the machines may be purchased, to-

gether with a treatise on their use. Mr. Gauen has also invented a revolving forcing-frame, of which an account will appear in our pages at the same time.

The application of solar concentration to generating heat appears capable of being carried to an unlimited extent in forcing and maintaining artificial climates. Had Dr. Anderson been alive, he would have been delighted to recognise a principle by which his idea might be realised, of generating, or collecting and storing up, in or near hot-houses, as much solar heat during sunshine as would serve during night and dull weather. In our opinion, Mr. Gauen's invention would effect this object, if applied to heat an immense body of water, or gravel, or metal, surrounded by a non-conducting medium, which would form the reservoir of heat; and this heat might be drawn out by means of a current of air passing through the body, in coils of metallic tubes. This current of air, as well as the admission of external air to the hot-house, might be regulated by Mr. Kewley's machine. (*Encyc. of Gard.*, § 1490.): Indeed, Mr. Gauen's engine is the most ingenious gardening invention which has appeared since that of Mr. Kewley. We should like to see both applied to the heating and regulating of a hot-house constructed on the polyprosopic principle (*Encyc. of Gard.*, § 1610.), and wish we could indulge the hope that some spirited individual would attempt such a thing. A successful result would certainly be the *ne plus ultra* of hot-house gardening.

Truffles. — Some time in September last a friend of mine, a nephew to Mr. Tully, confectioner of Bath, paid me a visit at this place. When walking through the woods belonging to my employer, Colonel Kingscote, he asked me if I had not found truffles about them; I told him I had not searched for them. This he wondered at, because the woods adjoining, he said, were the places from whence they procured most of what they used at Bath. He added, that if I would allow him to come the next season, which he said would be September or October, 1827, he would bring a dog and have a day's excursion; in the mean time if I would accompany him to those and other places, he would show me where and how to find them. Anxious to be informed, I accepted his offer, and by the help of his dog soon found several. The situation was indeed similar to the woods of Kingscote, as also the soil they grew in. The woods are principally beech, the soil rather stiff and stony. I hope to be successful in the attempt I mean to make to cultivate the truffle, and then shall be most happy to furnish something farther in the shape of information. — *William Boyce. Kingscote Gardens, July 21.*

Rhèum palmatum as *Tart Rhubarb.* — About fifty years ago the late General Manners, of Bloxholm in this county, on his return from Russia, brought home seeds of the *Rhèum palmatum*. My father procured a few plants of the gardener, and it has been cultivated in the garden I now possess ever since, and the stalks regularly used every year. I have tried the *R. Rhapónticum* and the *undulatum*, which are much cultivated in this neighbourhood, but certainly the *R. palmatum* is preferred to either. — *R. Turner. Grantham, May 21. 1827.*

Passiflora quadrangulàris is frequently grafted upon *P. cærùlea* in France, and flowers and fruits the same year, sometimes on plants not higher than eighteen inches. (*Vallet ainé of Rouen.*) Some amateurs about London, among others Mr. Burnard of Holloway, have grafted various species of *Passiflora* on *P. cærùlea* with perfect success.

Pelargónium tricolor, grafted on the top of tall stems of *P. cucullatum* or *zonàle*, forms very handsome heads, which keep in bloom all the summer. Mr. Ingram has some fine specimens in the gardens of Frogmore.

Six *Pine-apples*, of the *New Providence kind*, were cut on the 23d, 24th, and 25th ult., by William Crawshay, Esq., of Cyfartha Castle, Gla-

morganshire, of the following weights, and their growth and beauty were quite perfect:—One 12 lb. 15 oz.; ditto, 10 lb. 8 oz.; ditto, 10 lb. exactly; ditto, 9 lb.; ditto, 9 lb.; making an average of upwards of 10 lb. 10 oz. each. Within the same period, twelve queen-pines were cut, weighing together 35 lb. (*Times*, July 6.)

The stamens of the flowers of Schizanthus pinnatus, on being touched with a needle or knife point, possess the same irritability as the stamina of the *Berberis vulgaris*.—*R. Turner. Grantham, May 21.*

Horticultural Depravity.—On the night of the 16th of June, some miscreant entered into the garden of J. T. Dering, Esq., of Crow Hall, near Downham-market, broke open the green-house, and maliciously destroyed every plant therein, including many fine orange and lemon trees, many of them of nearly forty years' growth. The ruthless villain then barked, cut down, and demolished between forty and fifty peach, nectarine, and other choice and valuable wall-fruit trees, which were in full bearing, and had been selected with great care to supply the deficiency occasioned by last year's depredation. He also cut through and destroyed several fine vines giving promise of an abundant crop, rooted up every melon and cucumber plant, and broke and destroyed all the frames and glasses. (*Farm. Jour.*, July, 9.)—We hope the unhappy wretch who committed these acts was no regular gardener.

Enormous Thistle.—There is now growing in the garden of Mr. G. Hardwick, of Stamford Bridge, a thistle, of the extraordinary height of 9 feet 2 inches; the leaves, in general, are 3 feet long, and 2 feet broad; there are four branches from near the bottom, 6 feet 2 inches long, each of which has thrown out 17 branches, with heads and flowers. There are 23 branches from the main stalk, from which have sprung the uncommon number of 253 smaller branches, with heads and flowers: on one of those stalks there are other branches with heads. (*Yorkshire Gazette*, July 21.)

Chelsea Botanic Garden, July 9.—There are now in flower here three hundred different sorts of wheat, viz. fifteen species with their varieties, forty sorts of oats, and eighteen of barley, from seeds brought from Spain, the Adriatic Gulf, and the shores of the Caspian Sea, by Professor La Gasca. (*Gard. Mag.*, vol. ii. p. 220.) It is hoped seeds will be saved from all these varieties, and sent to the different botanic gardens of the empire, in order to be sown in them, and the produce distributed among such local agriculturists as have the means and sufficient patriotism to give them a fair trial on a scale sufficient to admit of ascertaining their comparative merits. If Mr. Coke, the Duke of Bedford, Lord Althorp, the Duke of Portland, Mr. Curwen, and, in Scotland, Mr. Rennie, were to take up this subject with their characteristic energy and perseverance, the result would probably be some new and valuable varieties of grain introduced into general culture. Mr. Anderson, the curator, has obligingly sown these seeds for Professor La Gasca, who, we doubt not, will be found most liberal in the distribution of the produce as far as it will go.

Traps for Hay-stealers.—Have the grower's name printed or written on a great number of little slips of paper: distribute these in the hayrick as it is building, so as there may be at least one slip to each truss, which will not require above one hundred slips to an acre, but to make quite sure, say two hundred. Then when you suspect your man has given away a truss, or any particular truss or quantity to be stolen from your cart or rick, have the truss pulled to pieces, &c. This practice has been adopted in Shropshire, and a thief detected and convicted in consequence. The ingenious inventor is Mrs. Richards, of the Parish of Clun. (*See Farm. Jour.*, July 25. p. 255.)

Ranunculus acris, the sharp, or upright meadow crowfoot, is said to blister the mouth, stomach, and udder of cows. Mr. Whitlaw, who has a

patent for administering medicines by steam, and extensive establishments for this purpose, makes it a rule not to allow the use of milk or butter by his patients, while this species of ranunculus is in flower. All the diseases with which we are afflicted, he says, are owing to the imperfection of our agriculture, by which the seeds of poisonous weeds are ground into flour along with the corn; and milk, butter, and beef are contaminated, even in the living animal, in consequence of the deleterious plants which are suffered to grow in our pastures. It was a happy thought in Mr. Whitlaw, to combat such a wide-spreading evil by the power of steam.

Botanical Lessons. — We observe, with great pleasure, that Miss Kent, the author of those elegant works *Flora Domestica*, *Sylvan Sketches*, &c., proposes to give young ladies instruction in the science of botany. It is remarkable that this delightful science, which would seem to be more peculiarly a lady's study, has hitherto been almost entirely neglected by them; this may have proceeded, in some measure, from the difficulty in obtaining assistance; and Miss Kent is encouraged to hope that she may be the means of extending to others the pleasures and advantages she has herself derived from this innocent and interesting pursuit. Miss Kent's address is No. 72. St. Paul's Churchyard. (*Times*, Aug. 7.)

SCOTLAND.

Caledonian Horticultural Society, June 7. — Prizes were awarded for the best brace of cucumbers, and their history; for the only parcel of early peas exhibited, of the early frame variety; for the best specimen of early potatoes; for the best asparagus. The Committee regret to state that no China roses were produced to the meeting; "eight distinct varieties" being required in flower, while few cultivators can have more than half that number in flower at one time. An extra medal was awarded to Mr. W. Oliver, gardener to the Earl of Rosslyn, at Dysart House, for the best collection of dessert and baking apples, with a request that he would communicate their history, and mode of preserving the fruit till this season.

Specimens of a very good late Pear, in perfect preservation, were exhibited; and the Committee were of opinion, that an extra medal should be awarded for this pear, and grafts of it requested for the experimental garden; and, also, that an account of the mode of keeping the fruit should be requested. A medal was accordingly awarded to Mr. Robert Reid, gardener to Sir Alexander Keith, of Ravelstone, who sent the pear.

A box of Nonpareil Apples, in the most perfect state of preservation, excited the admiration of the Committee; and, as they did not consider themselves entitled to vote farther medals at this meeting, they directed that particular notice should be taken of these nonpareils. Thanks given to Mr. Alexander Bisset, at Methven Castle, who transmitted them, and that he be requested to communicate his mode of keeping fruit. (*Edin. Adv.*, June 19.)

The North British Professional Gardener's Society held a meeting June 15. Prizes were awarded for tulips, peaches, potatoes, cauliflower, rhubarb, ranunculus, geraniums, and double balsams. (*Edin. Adv.*, June 19.)

The Dundee Horticultural Society held a meeting on August 1st, and gave away numerous prizes, which, we regret, want of room prevents us from recording. Mr. Daniel Stewart, gardener to David Blair, junior, Esq. Craighill, exhibited some flowers of a superb new seedling rose, which promises to be an important acquisition to that deservedly popular tribe; to the rambling habit of the Ayrshire, it adds the beauty of some of the double white varieties, and undoubtedly it will ere long supplant many of our common ornaments of the cottage and the rock. We understand it is to be named the Craighill climbing rose. (*Dundee Cour.*, Aug. 5.)

The *Caledonian Lodge of Gardeners* had their splendid triennial procession in Edinburgh, on July 3d. The brethren assembled in the Riding School, Nicolson Street, at two o'clock, and a number of deputations from the lodges in the neighbouring towns arrived in succession. Shortly after three o'clock the grand display commenced. The whole procession moved off, in regular order, by the South and North Bridges, and thence to the British Hotel. The members were tastefully decorated with their sashes and the other showy insignia of their order; and their flags, music, and beautiful garlands of flowers, gave the whole an appearance greatly superior to that of the common parades. The members dined in the Hopetoun Rooms, and spent the evening in the most harmonious manner. (*Scotsman*, July 4.)

The *University Course of Lectures on Botany* were terminated July 30th, when the following prizes were awarded:—To Mr. Edward Moore, of Plymouth, a gold medal, for the best essay on the plants which are poisonous either to man or the inferior animals, and belong to the British Flora, with various circumstances (as stated in the intimation given last year) relative to their natural history, culture, and properties. To Mr. Isaac Haig, of Bemersyde, Berwickshire, a silver medal, for the essay next in merit on the same subject. To Mr. John Sutherland, of Edinburgh, a silver medal, for a herbarium collected in the neighbourhood of Edinburgh. Before opening the sealed notes, in which were the names of the successful competitors, Dr. Graham expressed himself much pleased with all the essays given in. They evinced much patient research and general knowledge of the subject. He also complimented the collector of the herbarium on the very great accuracy with which the plants were named. (*Scotsman*, Aug. 1.)

A *Strawberry*, exceeding five inches in circumference, was gathered in the neighbourhood of Edinburgh in the last week of July. (*Scotsman*, Aug. 1.)

Yucca gloriösa and *flamentösa* have flowered magnificently in the nursery grounds, Leith Walk, and at Redbraes, Bonnington Road, belonging to Dicksons & Co. Some of them were upwards of ten feet high, and covered with many hundreds of blossoms. They are supposed to be the finest that have yet flowered in this quarter of the country. (*Scotsman*.)

The *Edinburgh Green-Market* has been abundantly supplied with the vegetables and fruits of the season during the last two months. There has been some altercation respecting the size of the strawberry-baskets, which the Committee of the Fruit-Gardeners have set at rest, by declaring by advertisement (*Scotsman*, June 20.) that the baskets at present in use contain one full imperial quart each, which is about one fifth less than the former basket.—*B. Edin.*, Aug. 10.

Botanic Garden, Edinburgh, June 7. 1827.—List of rare plants which have flowered during the last three months, communicated by Dr. Graham to Professor Jameson:—*Acácia lunata* and mucronata, *Banksia integrifolia*, *Cactus heptagonus*, *Cycas circinalis*, *Dracæna obtecta*, *Dryas integrifolia*, *Liparia sphærica* and villösa, *Lomatia longifolia*, *Magnolia cordata*, *Omalanthus populifolius*, *Oxalis bipunctata*, *Passiflora pedunculata*, *Penæa imbricata*, *Primula longiflora*, *Psidium chinense*, *Sterculia Balanngas*, *Strophanthus divergens*, *Trixus auriculata*. (*Ed. Phil. Jour.*, June, 1827, p. 174.)

Watching the Swarming of Bees.—The hive is placed upon a weighing beam, about three feet eight inches long, with a board on the other end, on which stones of the weight of the hive are put. When the bees begin to cast, (an ordinary top swarm is between 4 lb. and 5 lb. weight,) and when the first pound's weight of bees have left the hive, the beam will turn back a little, the same way as a merchant's scale does on the counter: but, before the scale rests, it forces out a trigger, like the pin of a mole-trap, which lets off a small iron wire to a bell in the house, that gives sufficient

warning to the bee-mother to go and take care of the swarm. The above method has been practised for several years by Mr. Duncan, gardener, near Ayr. (*Glasgow Chronicle*.)

IRELAND.

Olea excelsa.—A correspondent (J. R. K.) informs us that he has found the *Olea excelsa* stand the winters of Ireland without injury for the last six or seven years, in an exposed situation, though it had to endure, in one instance, a frost of 18° Fahrenheit. He thinks it will prove a valuable acquisition to our stock of hardy evergreens, being arborescent, perhaps a forest tree, from its specific name *excelsa*, or lofty. Its growth is vigorous, its form pleasing, and foliage large and rich; it perfects its shoots early, and its buds appear well formed to resist the cold. Any dry soil suits it, and it may be rapidly propagated by grafting on the privet, or by layers. It is a native of Madeira, perhaps of an elevated part of the island.

The Reinette Franche Apple, the same correspondent recommends, as being the most valuable eating apple for the season. It is in use from January to July. Large, rather oblong, about 2½ inches in its greatest diameter; sides somewhat angular; green until fit for use, then yellowish, and a little ruddy to the sun, with some russet about the eye and stalk; flesh juicy, sugary, and rich, never mealy. It is a great bearer, and makes vigorous upright shoots; leaves large, and many of them of a remarkable oblong oval. The French say it is the best apple they have.

The Reine Claude Violette Plum, or Purple Gage, is a new seedling variety of the Green Gage, of a purple colour, equally good, and a better bearer: it hangs longer on the tree, and is the best red plum we have. In its wood and leaves it generally resembles the Green Gage, but its buds are larger, its leaves of a darker green, more rugose, and more regularly crenated.—*J. R. K. July 10. 1827.*

ART. III. Horticultural Society and Garden.

JUNE 5th.—*Read.* Remarks upon the application of tar to wooden fences and walls, with observations on the mode of destroying insects prejudicial to fruit trees: by Daniel Edward Stephens, Esq. On the cultivation of the *Polyánthes tuberósa*: by the Rev. George Swayne, C.M.H.S.

Distributed. Cardon d'Espagne, Poirée à Cardes blanche, and *Ænóthera biennis*, from M. Vilmorin, C.M.H.S. Fine blue Kohl Rabi, from Messrs. Booth of Hamburgh. Marseilles Lettuce, from Mr. William Malcolm, F.H.S.

Exhibited. Flowers of *Rhododéndron Catawbiense-Pónticum*, a hybrid variety. Flowers of *Yúcca angustifólia*, and Lambert's large nut. Dried apricots from Morocco, and walnuts from Morocco, four years old. Early Cantaloup melon. Lemons grown on a wall protected by glass only.

Also, from the Garden of the Society. Fruits of the Flat Peach of China, and early May Cherries. Flowers of various Roses, of various *Pæonies*, of various *Íris*es, of various *Ranunculuses*, of *Glycine frutésce*ns, of *Lupinus polyphýllus*, a very handsome species; of *Scilla peruviana* (blue), of Straw-coloured Broom, and of *Quisquális indica*.

June 19th.—*Exhibited.* A plant in flower of *Geranium Húmei*. Flowers of Double *Ranunculuses*, from Mr. Thomas Hogg of Paddington, and from Mr. Henry Groom, F.H.S. Double Roses, and Knevett's Pine Strawberry.

Also from the Garden of the Society. Flowers of *Lonicera flexuosa*, Show Roses, Double and Single Ranunculuses, *Pæonia Whitlèji*, *Pæonia fràgrans*, Rose Boursault, Watt's Climbing China, Fraser's Double China, *Rosa Champneyana* and Italian Evergreen Rose; twelve sorts of Strawberries; seven sorts of Oraches, viz. White, Red-stalked White, Green, Red-stalked Green, Lurid, Purple, and Red; also four sorts of Lettuces, viz. Black-seeded Got, Laitue de Malte, Union Cabbage, and Large White Silesia.

July 5d. — Read. An account of some improvements in the construction of hot-beds: by Thomas Andrew Knight, Esq. F.R.S. &c., president. A paper on the cultivation of the pine-apple: by Mr. George Sanders, gardener to the Rev. James Tomkinson, F.H.S. An account of a new melon and cucumber pit: by Mr. Edward Malone, C.M.H.S., gardener to George Savile Foljambe, Esq. F.H.S.

Exhibited. A collection of Roses from Mr. John Lee, F.H.S., a monstrous *Campánula*, a collection of Pinks from Messrs. Ronalds and Sons, a Nepal Rose, a collection of Pinks from Mr. Hogg of Paddington, Seedling Pinks from Mr. George Pittman of Hommerton, *Pæonia albiflora Hümei*, *Pæonia albiflora fràgrans*, and *Ophrys apifera*, from Mr. James Young, F.H.S.

Also, from the Garden of the Society. Netted Succada and Netted Cantaloup Melons. Blood Red and Havannah Pine-apples, and twenty-two sorts of Strawberries. Eight sorts of Lettuces. Flowers of a variety of Show and other Roses, of varieties of *Pæonies*, of varieties of Single Poppy-Anemones, of varieties of Sweet Williams, of varieties of French Marigolds, and varieties of eight sorts of other flowers.

July 17th. — Read. Observations on the cultivation of stove plants: by Sir Edward Poore, Bart. F.H.S.

Exhibited. A cone of *Pinus Lambèrti* (*Gard. Mag.*, vol. ii. p. 228.) from the river Colombia, sent by Mr. David Douglas, one of the Society's collectors. Various flowers, from Mr. Robert Donald, F.H.S. A collection of Carnations and Picotees, from Mr. Hogg of Paddington. A plant in flower of *Digitalis scèptrum*. Sooted yellow-fruited variety of *Ribes nigrum*. Red Roman Nectarine and Noblesse Peaches. A grape unnamed, which appeared to be the Raisin des Carmes.

Also, from the Garden of the Society. Flowers of varieties of Dwarf and tall Dahlias, of varieties of French Marigolds, of varieties of Roses, of varieties of Stocks, and flowers of *Catlèya nòva* sp. (one of the most beautiful of epiphytes), of *Gloxinia speciosa* var. *flòre álba*, of *Collòmia grandiflora*, of *Cenóthera Lindleyana*, of *Clàrkia pulchélla*, of *Papàver Rhœas*, and of *Cyanus*. Fruits of nineteen sorts of Gooseberries, seven sorts of Raspberries, of two sorts of Currants, of Green Pine Strawberries, of Queen Pine and Black Antigua Pine-apples, and of *Ribes tenuiflorum*.

The prizes for fruit exhibited on the 25d of June, 1827, were awarded as follows:—

The large silver medal for the best fruits, consisting of pines and grapes, to Mr. James Brown, gardener to the Duke of Buckingham, at Stowe in Buckinghamshire.

The Banksian medals. To Mr. William M'Murtrie, gardener to the Viscount Anson, at Shuckburgh in Staffordshire, for pine-apples and melons. To Mr. Christie Duff, gardener to the Earl Grosvenor, at Eaton Hall in Cheshire, for various fruits. To Mr. John Bowers, gardener to the Lord Selsey, at West Dean House in Sussex, for grapes, nectarines, and a melon. To Charles Gomond Cook, Esq., of Upper Poole House in Herefordshire, for a Providence Pine. To Mr. Thomas Tyer, gardener to the Lord Ellenborough, at Roehampton in Surrey, for strawberries. To the Right Hon. Reginald Pole Carew, for citrons grown in the open air in his garden at Anthony House in Cornwall.

Anniversary Fête, July 25.—Instead of a dinner as heretofore, it was resolved to give a public breakfast in the Society's garden at Chiswick, and to admit the families and friends of the fellows to a certain extent, and under certain regulations determined by a committee, and approved of by a select number of ladies of rank under the designation of "Ladies Patronesses" of the fête. The price of the tickets was one guinea each; "2973 tickets were issued, and 2843 persons attended. A larger number of Fellows of the Society were present than have ever been known to have met together on any former occasion. Notwithstanding the magnitude of the assemblage, the arrangements and regulations were such as to prevent all injury to the garden, not a single plant having been damaged. From the success of the experiment in this instance, the Council are led to hope that a repetition of the meeting in future years will be found highly conducive to the interest of the Society, by exhibiting to the greatest advantage the produce of its labours, and by diffusing more generally among the public a taste for horticultural pursuits. The expenses have been more than defrayed by the receipts; and, although the Council did not anticipate such a result, it is probable that there will be a surplus, out of which it is proposed to erect some building of permanent utility in the garden." (*Extracted from a paper suspended in the Society's Meeting-Room.*)

This fête produced a good deal of discussion in the newspapers at the time, and some temporary inconveniences, arising from a deficiency of refreshments, gave rise to expressions of dissatisfaction; but, the cause being of a temporary nature, and easily remedied in future, it is not worth recording. It was allowed by all parties that such an assemblage of women of beauty, fashion, and rank, had never before been seen in a garden. Objections, however, have been taken to this fête, as a misappropriation of the garden, and as degrading it to the rank of a place of public amusement; and, as our wish is to be impartial on every subject, we give the following letter:—

The Fête at Chiswick.—Sir,—You have on many occasions shown yourself a warm friend to the Horticultural Society, but, at the same time, manifested that you will not shrink from a bold and independent expression of your sentiments respecting any part of its proceedings which may seem to call for reprehension.

Trusting that you are prepared to view the matter in the same light with myself, I do hope and expect that your next Number will contain some severe strictures on the notable fête which it seems is to take place at the garden of the Society on the 25d inst. I expect that you will be equally ready with myself to reprobate such a project, and that, through the medium of your Magazine, the subscribers may be excited very generally to protest against the recurrence of such a misappropriation of their own grounds. The Society, if I mistake not, was instituted, and its garden formed, to promote a more general diffusion of scientific and useful knowledge on the subject of horticulture; and I, for one, most exceedingly regret that these objects should have been so far lost sight of, that the Society should be made to pander to the sickly appetite for amusement of the fashionable world. It is beneath the dignity and beside the purpose of the Society. If it is designed to bring the Society more into notice, and recommend the garden especially to the liberal patronage of the amateurs of an elegant and useful science, nothing could have been worse conceived than this new project, by which every thing is done to destroy the distinctive character of the garden as a scene for exercising and displaying useful science and ornamental design, and to turn it into a mere *locus* of exhibiting amusements wholly foreign to these objects. If it is in contemplation to augment the funds of the Society by such attractions, I must say that it is a paltry scheme, unworthy of the cause, and one which, I trust,

will be disavowed and protested against by the great body of the subscribers. I could say more on this subject, especially on the manner of carrying the scheme into effect. What have "*Ladies Patronesses*" to do with the exhibition of the Society's garden? But I forbear, my object being to excite your attention to the subject, and to put your pen into requisition, rather than to exercise my own. I am, Sir, &c. — *A Subscriber to your Magazine and F. H. S. London, June 21. 1827.*

Other letters on the same subject (by F. S. and W. M.), which we do not think it of use to give at length, attempt to ridicule the idea of combining Kensington Gardens, Vauxhall, and Bagnigge Wells, in what the writer says should be exclusively devoted to science, and be supported on principles of utility, and not rendered dependent in any degree on fashion. The price of tickets for ladies is complained of, and also the limitation of the number of ladies to *one*, from the families of such of the Fellows of the Society as are not subscribers to the garden.

At first sight there seems a deviation from propriety in mixing up fashion with science, and rendering an experimental garden a public promenade; and if this were to be done frequently in the course of the season, we should think the practice reprehensible: but what can be more harmless than such a fête once a year? If the Society may dine or breakfast together once a year in a tavern, surely they may do so in their own garden. If it be asked what strangers and the ladies have to do at such meetings, the question may be answered by asking if horticulturists must necessarily be less social and gallant than other men. For our own part, we are of opinion that it would be an easy matter to show that such fêtes are calculated to do much good, both to the Horticultural Society and to society in general. It is obviously allowable and praiseworthy to call in the influence of fashion as an auxiliary support to useful institutions; and it will not be denied, we think, that large assemblages are calculated to generalise the manners, the feelings, and the taste of those who compose them. If the difference in society in these matters were less, the moral strength and happiness of society would be greater. But our pages are open to any other view of the subject.

ART. IV. *Provincial Horticultural and Florists' Societies.*

THE Yorkshire Horticultural Society held a meeting, for the first time, in the city of York, on July 18th. The meetings of this Society have been hitherto held at Leeds; but it is intended in future to hold four meetings a year, two at York, and two at Leeds. We regret that we can only give some very short extracts from the copious and well drawn up account of the July meeting given in the *Yorkshire Gazette*. We confess we are equally astonished and delighted at the number of useful, rare, and beautiful productions which were exhibited. Among the fruits was a fine specimen of the *Cárica papàya*, a fruit nearly allied to the fig, and resembling a quince in shape and size: it was from the stove of Lord Grantham at Newby Hall, and has been very rarely seen in this country. A specimen of netting, for preserving fruit trees from insects and from the effects of frost, was shown by Mr. Slater of Yeadon, near Leeds, the manufacturer; and a plan for laying out one hundred acres of ground in plantations and gardens was exhibited by Mr. Major, architectural and landscape gardener, of Knowsthorpe, near Leeds. The thanks of the Society were given to various gentlemen, particularly to John Smith, Esq., to Hawksworth Fawkes, Esq., to Lord Grantham, to Mr. Horner, and to Messrs. Backhouse. The fruit is stated to have been chiefly sent from the West Riding. The meeting was

held in the Festival Concert Room, and was numerously attended by ladies as well as by gentlemen. A high compliment was paid to S. W. Nicoll, Esq., an amateur florist, for the taste with which he arranged the colours and forms of the numerous and large bouquets and pyramids of flowers which decorated the room.

“Every one who admires in flowers the beautiful workmanship of nature; every one who desires to improve or to profit by improvements in fruits and culinary vegetables,—he who is allowed by fortune the free enjoyment of the vegetable riches of nature, and he who with bodily and mental exercise is employed in rearing them to perfection,—is now called upon to lend his aid to the efforts of this Society.

“We do feel confident that this appeal will not be made in vain: we promise ourselves the pleasure of seeing in our gardens, in our markets, and on our tables, abundant proofs of increased knowledge among gardeners, and improved taste among their employers. That these sentiments are generally acknowledged, is evident from the rapid augmentation of the numbers of the Society since the extension of its meetings to York; from the zeal manifested by several of the neighbouring gentry in sending fruits and flowers and curious plants for the inspection and gratification of the meeting; from the competition of gardeners, and from the large and most respectable attendance of visitors.” (*Yorkshire Gazette*, July 21.)

The York Florists' Society held their annual show of Carnations, Picotees, and Gooseberries, on July 26th, when numerous prizes were adjudged. The competition was unusually great, and the stand of flowers was the best that has been seen in York for several years, demonstrating an increasing spirit of improvement in the Society, which, no doubt, will be fully maintained next year. The piece of plate given annually by the Society to the winner of the greatest number of first stand prizes during the current year, was mooted between Mr. William Hardman and Mr. Wilson, who had each won eight; when, the second prizes won by each of the two during the same period being taken into calculation, it was adjudged to Mr. Wilson: also, the piece of plate allotted to the winner of the greatest number of first prizes of geraniums, roses, &c. during the same period, was adjudged to Mr. Butler. (*York Cour.*, July 31.)

The Show of Pinks and Roses, by the same Society, was held on July 5th, when twenty-five prizes were awarded to as many individuals.

The Morpeth Florists' Society held their annual show on the 25th of June:

The Horticultural Society of Hexham held a meeting on the 23d of June, for the exhibition of flowers and vegetables: and

The Haworth Society of Florists held their annual show of Ranunculuses on the 25th of June.

Numerous prizes were awarded at these different meetings. (*Newcastle Cour.*, July 17.)

The Liverpool Floral and Horticultural Society held their first meeting in the large room of the York Hotel, Williamson Square. The exhibition, the first of the kind that ever took place in Liverpool, was most pleasing. The display of tulips was fine and extensive. There were many rare and valuable stove and green-house plants. Two leaves of the sable *Blackbúrnia*, commonly called the great palm, with the fruit and bloom, from the garden of John Blackburn, Esq. M.P., of Hale, formed part of the exhibition, and was greatly admired. For this beautiful present the Society, we believe, was indebted to the lady of our venerable county representative.

[We should be happy to receive the history and description of this plant, which was celebrated even in the time of Linnæus, and visited by him when in this country.]

The show-room was handsomely decorated with flowers and ornamental shrubs, and had a most delightful appearance. The company who visited the exhibition was numerous and highly respectable; and all seemed

pleased with the exhibition which had been submitted to their view. We trust that the patronage which the Liverpool Floral and Horticultural Society will receive from the wealthy and respectable inhabitants of the town and neighbourhood, will be such as to induce its founders to continue their exertions to render its periodical shows increasingly interesting. The lovers of botany and of horticulture ought, for this purpose, to enrol their names as subscribers, in order to raise a fund out of which suitable prizes may be offered to individuals who exhibit the finest specimens of tulips, auriculas, &c. We hope that, ere long, we shall have to announce the accession of a long list of subscribers and contributors to the Society. Nearly sixty prizes were given away. (*Liverpool Albion*, June 4.)

The *Lancaster Floral and Horticultural Society* held their Pink and Ranunculus Show on June the 27th. Six prizes were given away for purple-laced pinks; six for red-laced; six for black and white; and eight for seedlings. Six prizes were given for dark, and dark-purple and red ranunculuses; six for striped; six for spotted, mottled, or edged; and six for selfs. Prizes were also given for fruits, roses, hardy shrubs, and herbaceous plants, green-house plants; for geraniums grown by ladies; for bouquets from the open gardens; for apple trees in pots; and for lettuces and other culinary vegetables. The following are the names of the pinks:—

<i>Purple laced.</i>	<i>Red laced.</i>	<i>Black and White.</i>
1. Suwarrow.	1. George the Fourth.	1. Cicero.
2. Mary Ann.	2. Miss Foote.	2. Beauty of Flora.
3. Lustre.	3. Rosaire.	3. Queen of June.
4. Queen of May.	4. Princess Charlotte.	4. Black Railer.
5. Bowes's Premier.	5. Childwall Beauty.	5. Fancy.
6. Bowes's Cato.	6. Scott's Mrs. Scott.	6. Black Baquet.

The ranunculuses were for the most part without names. (*Lancashire Gazette*, June 30.)

Preston Flower Show, June 27.—The display of fruit and flowers was admirable but the most attractive production in the room seemed to be a magnificent dish of strawberries of the Kean's seedling kind, from the garden of Dr. Robinson. The following are the pinks which obtained prizes:—

<i>Purple laced.</i>	<i>Red laced.</i>	<i>Black and White.</i>
1. Cato.	1. Rosaire.	1. Premier.
2. Mary Ann.	2. Lady Wilson.	2. Black Baquet.
3. Duchess of Manchester.	3. George Fourth.	3. Seedling.
4. Ruler.	4. Lady Cobbett.	4. Beauty of Flora.
5. Rosamond.	5. Lancashire Lad.	5. Incomparable.
6. Suwarrow.	6. Seedling.	6. Mère Brune.

The ranunculuses were without names. A variety of prizes were given for roses, green-house plants, hardy plants, grapes, melons, strawberries, cherries, cauliflower, lettuce, beans, artichokes, and a blue fig tree, in ripe fruit. (*Preston Pilot*, June 30.)

Herefordshire Horticultural Society, July 31.—The fourth show of this Society presented a fine collection of plants and flowers. The stand for fruits contained a superb display of gooseberries, many of them of an extraordinary size, remarkably fine melons, grapes, nectarines, apricots, plums, white and red currants, and cherries; on a table there were also excellent cucumbers, onions, and carrots. The small stand in the centre of the room was richly decorated with the choicest emblems of Flora, comprising carnations, picotees, dahlias, &c. The flower of *Cactus speciosissimus*, and a *Magnolia grandiflora*, from Garnons, were greatly admired, as also a *Nerium splendens*, from the green-house of T. Lane, Esq., and several others. Upon

the whole, the show both of fruits and flowers was excellent, and there was a full and highly respectable attendance of company. The following flowers obtained premiums:—

CARNATIONS.

- | | | |
|-----------------------------------|------------------------------------|---------------------------|
| <i>Scarlet Bizarres.</i> | 2. Hatfield's Litchfield Beauty. | <i>Purple Flakes.</i> |
| 1. Plummer's Lord Manners. | 3. Dawson's Duchess of Devonshire. | 1. Fripp's Zamana. |
| 2. Name unknown. | | 2. Fletcher's Lord Anson. |
| 3. Gen. Picton. | <i>Scarlet Flakes.</i> | 3. Hume's Miss Parcart. |
| <i>Crimson Bizarres.</i> | 1. Barr's Waterloo. | <i>Rose Flakes.</i> |
| 1. Yeomanson's George Rex Fourth. | 2. Sir Francis Burdett. | 1. Webb's Lady Ducie. |
| | 3. Lacey's Queen. | |

PICOTEES.

- | | | |
|-----------------------|-----------------------------------|--------------------|
| <i>Purple.</i> | <i>Red.</i> | <i>Yellow.</i> |
| 1. Glover's Beef Axe. | 1. Seedling, Sir J. G. Cotterell. | 1. Louis dix-huit. |
| 2. La Cleopatra. | | |

Prizes were also given for cockscombs, green-house plants, dahlias, hardy plants, grapes, melons, apricots, nectarines, gooseberries, onions, cucumbers, and carrots. (*Hereford Journal*, Aug. 1.)

The Windsor Florists' Society held their usual Flower and Gooseberry Shows, which were fully attended, both by local and stranger friends and amateurs. The taste for gardening is much on the increase here, and it is in contemplation to organise a Windsor Horticultural Society. We regret we have not room to print the prospectus which has been issued by Mr. Lovegrove and other leading men of the present Florists' Society.

The Uxbridge Florists' Society held their Show of Pinks on the 27th of June. It was well attended, and a number of prizes given away.

Ross Horticultural Society, July 25.—The grand stand contained 344 feet of stage room most tastefully filled with a miscellaneous assortment from the house and open garden, and the whole formed an extraordinary display of the most varied colours and foliage. The stage for prize flowers was covered with the choicest carnations, picotees, and dahlias. The balsams and cockscombs were fine, and added much to the general effect. The grapes produced by Mr. Hilton, Colonel Money's gardener, exceeded any previously shown. This meeting was attended by 240 subscribers and their friends, and in the evening by about 150 other persons, so that this interesting show was witnessed by at least 400 persons. The sale of specimens not removed produced 3*l.* 15*s.* 6*d.* The number of specimens ticketed and entered in the Society's book amounted to 799. The carnations which obtained prizes were as under:—

Scarlet Bizarres. 1. Wood's Commander; 2. Smalley's Foxhunter; 3. Lord Byron; 4. Prince William Henry; 5. Turner's John Bull.

Crimson Bizarres. 1. Pyke's Eminent; 2. Marquis of Wellesley; 3. Cartwright's Rainbow; 4. Cope's Suwarrow; 5. Beauty of Bailey.

Scarlet Flakes. 1. Queen of the Universe; 2. Sir John Boughey; 3. Earl Moira; 4. Madam Mara; 5. Barr's Waterloo.

Purple Flakes. 1. Butt's Rodney; 2. Pope's Defiance; 3. Brooke's Bristolian; 4. Bates's Wellington; 5. Dixon's Fame.

Rose Flakes. 1. Webb's Lady Ducie; 2. Redfern's Miss Ward; 3. Staffordshire Lass; 4. Metcalf's Miss Landers; 5. Barr's Rose Flake.

Purple Picotees. 1. Lee's Cleopatra; 2. Wollard's Queen; 3. Beauty of Bailey; 4. Salamander; 5. Lady Sandwich.

Red Picotees. 1. La Beauté Parfaite; 2. Will Stukely; 3. Hogg's Ellen; 4. Pearson's Maria; 5. Duchess of Beaufort.

Dark double Dahlias. 1. George the Fourth; 2. Superbissima; 3. Superba; 4. Sans Rival.

Light double Dahlias. 1. Camellia-flora; 2. Quilled Lilac.

Prizes were also given for balsams, cockscombs, stove or green-house plants, hardy plants, and for the following gooseberries :—

Red. 1. Crown Bob; 2. Printer; 3. Alcock's King Richard; 4. Rifleman; 5. Brundit's Jolly Gardener.

Green. 1. Greenwood's Green; 2. Surrel's Green; 5. Woodward's Whitesmith; 4. Blakeley's Green Chisel; 5. Green Ocean.

Yellow. 1. Golden Chain; 2. Gorton's Viper; 5. Cheshire Lass; 4. Lomax's Victory; 5. Robinson's Stump.

Grapes. 1. Saint Peter; 2. Black Amber; 5. Muscat of Alexandria; 4. Old Sweetwater; 5. New Sweetwater.

Melons. 1. Ionian; 2. Green Cantaloup. (*Hereford Jour.*, Aug. 1.)

Mr. Hogg's Show of Pinks and Carnations, at Paddington, was as brilliant and various as on any former occasion. Many new sorts have been added, from abroad, or from seedlings raised by Mr. Hogg. The following is a select list of pinks, all of which we can affirm to be of very great beauty:—

Aiton's George the Fourth.	Hoare's Woodland Beauty.
Bray's Invincible.	Humber's Regulator.
Barratt's Conqueror.	Knight's Lady Auckland.
Barnard's Bexley Hero.	Keen's Wellington.
Cooper's Cupid.	Pottecary's Eclipse.
Clarke's Adonis.	Steven's Waterloo.
Cheese's Miss Cheese.	Steven's Harefield Hero.
Cheese's Champion.	Pittman's High Admiral.
Corbett's Leopold.	Pittman's Regulator.
Curzon's Somerset Hero.	Pittman's Leonidas.
Dakin's Burdett.	Troup's Matchless.
Dry's Earl of Uxbridge.	Turner's George the Fourth.
Dry's No. 2.	Turner's Wiltshire Hero.
Davey's Britannia.	Westlake's Hero.
Davey's Roi de Pourpre.	Westlake's Heroine.
Davey's Lady Shannon.	Westlake's Receiver General.
Davey's Venus.	Wright's Lady Craven.
Greenwood's Beauty.	Willmer's Eclipse
Hopkin's Scare-crow.	Willmer's John Willmer.

The new idea for breaking Seedling or Breeder Tulips, "I cannot, in justice to those who have subscribed to the proposal I made, disclose publicly at present. I am sorry it has subjected you to so much animadversion; I certainly do not hold myself altogether free from censure, by having offered only hearsay evidence, instead of having waited to give direct and positive proof; however, if I live till next May, I shall be prepared to do so. Why should your Perthshire correspondent show 'sa muckle wrath;' for who ever heard of a Scotchman catching the Tulipmania? Does he consider this new idea a mere *ignis fatuus*, a will-o'-the-wisp, broached merely to hoax 'the cullers of simples?' I hope I shall be enabled to convince him as well as others, that the scheme is rational, and the success certain."—*T. Hogg. July 25.*

Gooseberry Show at Newark, July 26.—The prizes were adjudged by Mr. T. Capain, who very kindly officiated upon the occasion. It may be right to premise that the show is instituted for the sake of the gardeners and cottagers of Newark and its vicinity; and the weight of the berries is no mean proof of the horticultural skill of the successful candidates. The prizes consist of a copper tea-kettle for the heaviest berry of all colours, and one also for the heaviest of each colour, red, yellow, green, and white; and half a pound of tea for the second heaviest berry; although, to gratify the growers, four berries of each sort are "weighed," or, to make use of a

sporting phrase, "placed." The zeal and earnestness displayed upon the occasion, although in such a comparatively lowly station, were truly gratifying; and, so long as the cottager is stimulated by the trifling contribution of the rich, to employ his leisure hours in the cultivation of his garden, so long will he be virtuous, happy, and true to his country. It is the small village of Muskharn where these horticulturists principally live, and we think that in no one parish of England is there less crime. We have been induced to make these remarks as a stimulus to additional exertion upon the part of the gentry of Newark as well as of other large towns.—*T. C. H. Aug. 8.*

Lancaster Gooseberry Show, July 28.—Prizes were given for the following berries:—

Best Pan. Red, Top Sawyer, 20 dwt. 16 gr.; Yellow, Rockwood, 20 dwt. 14 gr.; Green, Ocean, 15 dwt. 12 gr.; White, Nailor, 15 dwt. 8 gr.

Second Pan. Red, Roaring Lion, 19 dwt. 19 gr.; Yellow, Globe, 16 dwt. 22 gr.; Green, Troubler, 14 dwt. 15 gr.; White, Wellington's Glory, 13 dwt. 18 gr.

Best Berry in any Class. Huntsman, 20 dwt. 1 gr. Red, 1. Roaring Lion, 19 dwt. 11 gr.; 2. Huntsman, 19 dwt. 7 gr.; 3. Top Sawyer, 18 dwt. 15 gr.; 4. Overall, 17 dwt. 15 gr.; 5. Sir John, 17 dwt. 6 gr. Yellow, 1. Rockwood, 16 dwt. 9 gr.; 2. Globe, 16 dwt. 9 gr.; 3. Golden Queen, 15 dwt. 21 gr.; 4. Gunner, 15 dwt. 20 gr.; 5. Sovereign, 15 dwt. 14 gr. Green, 1. Favourite, 14 dwt. 22 gr.; 2. Elijah, 14 dwt. 14 gr.; 3. Peover Pecker, 14 dwt. 7 gr.; 4. Ocean, 14 dwt. 1 gr.; 5. Angler, 14 dwt. 1 gr. White, 1. Bonny Lass, 16 dwt.; 2. Governess, 15 dwt. 12 gr.; 3. Thrasher, 15 dwt. 9 gr.; 4. White Lion, 15 dwt.; 5. White Eagle, 14 dwt. 20 gr. Best Seedling, 12 dwt. 2 gr.

Lancaster Carnation Show, August 5.—Prizes were given away for the following flowers:—

Scarlet Bizard, Perfection; Pink ditto, Rainbow; Purple Flake, Henry Hunt; Scarlet ditto, Salamander; Pink ditto, Duchess of Devonshire: forming the best pan of Carnations.

The best Carnation of any Class.—Perfection.

Scarlet Bizards. 1. Perfection; 2. Foxhunter; 3. Lord Bagot; 4. Rising Sun; 5. Triumphant; 6. Davey's Sovereign.

Pink Bizards. 1. King Alfred; 2. Rainbow; 3. Prince Leopold; 4. Marquess Wellesley; 5. Miss Wilmot; 6. Lee's Diana.

Purple Flakes. 1. Major Cartwright; 2. Wood's Commander; 3. Broad's Queen Charlotte; 4. Princess Charlotte; 5. Wild's Mary Anne; 6. Henry Hunt.

Scarlet Flakes. 1. Falkner's Salamander; 2. Potter's Champion; 3. Madam Mara; 4. Thornicroft's Blucher; 5. Cartwright's Commander; 6. Rising Sun.

Pink Flakes. 1. Duchess of Devonshire; 2. Incomparable; 3. Smiling Beauty; 4. Rochdale Beauty; 5. Miss Landers; 6. Lady Hood.

The best Picotee of any Class. Cleopatra.

Purple Picotees. 1. Cleopatra; 2. Ogden's Mary Anne; 3. Princess Charlotte; 4. Duke Wellington; 5. Lady Bagot; 6. Pearson's Eminent.

Red Picotees. 1. Will Stukely; 2. Childwall Beauty; 3. Nonpareil; 4. Incomparable; 5. England's Defiance; 6. Pearson's Maria.

The best and second best seedling carnation or picotee, green-house plants, hardy plants, fruit, bouquets, pine-apple, vegetable marrow, celery, pears, apples. (*Lancaster Gazette, Aug. 11.*)

ART. V. *Garden Libraries.*

MACKAY's Clapton Nursery Library, July 20. — The Secretary is desirous that we should acknowledge his obligation to Mr. Gorrie for a present of his dendrometer, with the following instructions for its use, which instructions may be considered as forming an appendix to Mr. Gorrie's paper on the subject. (Vol. II. p. 8.)

Mr. Gorrie's Dendrometer. — In constructing a dendrometer, it is necessary to have the support and quadrant at exact right angles with the table, in order to give the diameter on the principle of parallel lines. The correctness of the sights in the quadrant may be proved by forming two lines intersecting each other at right angles, placing the table on the direction of one of these lines, and moving the slider till the sights on the quadrant take the other; if they are found incorrect they will be easily adjusted by placing them so as to take the line. In placing the instrument for measuring, the slider must be fifty feet from the tree; and, should the tree not be nearly perpendicular, it must be placed opposite that side where the top of the bole neither comes near nor recedes from the point of observation. In taking the diameter of slanting branches, the table must be adjusted, by putting in or out the single leg, so as the side of the support or quadrant will be in the same direction as the branch, the motion of the slider will then bisect the branch at right across, and give the shortest, or true diameter.

In taking the length of slanting branches it will be necessary to take the angle of elevation at the low end of the branch, then elevate the quadrant to the apparent height, when it will be found that the sights do not point to any part of the branch. The slider, or, if the distance is long, perhaps the whole instrument, must be moved in a straight line till the quadrant take the part of the branch where the angle is wished to be taken. The degree of elevation will give the perpendicular height; the space travelled over by the slider will form the other angle of the right-angled triangle; of course the hypotenuse length is wanted as the length of the branch. Suppose, by the table, the perpendicular height is found to be ten feet, and the space travelled over two, then, by the forty-seventh proposition first book of Euclid, the square of the hypotenuse of a right-angled triangle is equal to the squares of both the other sides: Hence $10 \times 10 = 100$, and $2 \times 2 = 4 + 100 = \sqrt{104} = 10 \text{ feet } \frac{2}{100}$; or 10 multiplied into itself gives 100, and 2 multiplied into itself gives 4, and the sum of both squares is 104 feet, the square root of which is 10 feet and $\frac{2}{100}$ of a foot, or $\frac{1}{50}$ nearly, and so on of any deviation more or less from the perpendicular. — *A. Gorrie. Annal Gardens, June, 1827.*

Toxteth Botanical and Horticultural Library. — At a meeting of some of the inhabitants of the neighbourhood of Toxteth Park, held March, 1827, it was resolved, —

1st, That it is desirable to establish a library in Toxteth Park, for the purpose of enabling those who desire it, to obtain information on the subjects of botany, horticulture, and agriculture, at a moderate expense.

2d, That such library be established, and denominated Toxteth Botanical and Horticultural Library.

A resolution was also passed, adopting rules for the regulation of the Society. (*Liverpool Mercury, June 1.*)

Our readers are requested to correct the name, and what is said of this library, in *Gard. Mag.* vol. ii. p. 275., agreeably to the above information.

Library of the Glasgow Horticultural Society. — We have received a copy of the regulations of this library, as agreed on in February, 1827. As far as we can judge, they seem very judicious. We are happy to learn that

the use of the books is not to be limited to the members of the Society, but that others may subscribe for the use of them as in the case of public libraries.

Ayrshire Horticultural Library.—A copy of the regulations, with a catalogue of the books forming the library, has been sent us by Mr. McCarter, the librarian. Subscribers in general pay 10s. entry money, and 2s. per quarter, but journeymen gardeners are admitted to all the benefits of the institution by merely paying 2s. per quarter in advance. The books, though not numerous, are well selected; the *London Horticultural Transactions* are wanting, but we hope some Ayrshire Fellow of the Horticultural Society who sees this will send the institution his copy. We would recommend to Ayrshire gentlemen in general, to send donations of any spare books they have, on subjects of general utility. This library, and that of the Glasgow Society, will find a volume or two which we have addressed to them, at Mr. Black's, bookseller, College Street, Edinburgh, not as of any value, but as a mark of our sincere wishes for the prosperity of both libraries.

Benefit or Friendly Societies.—A valuable paper on the history and constitution of societies of this description, by Mr. W. Fraser, has appeared in the *Edinburgh New Philosophical Journal* for July, and is to be continued in succeeding numbers. The writer seems to have thoroughly investigated the subject, and to have had considerable experience himself as Clerk to the Edinburgh Compositors' Society, instituted in June, 1824, upon the principles recommended by the Highland Society of Scotland. Whoever has any thing to do with societies for benefiting the condition of the labouring classes, will do well to consult these papers, and the tracts of Mr. Cleghorn, reviewed in a former Magazine. (vol. ii. p. 521.)

Reading from a general Library.—W. S., under-gardener in the employment of an opulent banker near Nottingham, suggests that, where the number of gardeners is too small to establish a garden library, they might join together and subscribe to a public library; and that, if such public libraries found a demand for gardening and agricultural books, they would soon procure them for their readers. His "generous employer is a subscriber to the Nottingham Public Library," and he and his fellow-journeymen have only to name the book they want, and it is "immediately procured for them." W. S. further suggests that, instead of recommending gardeners to employ every moment of their time in reading, and to have no pleasures, more would be gained by allowing a small portion of every evening for relaxation of some sort, which would be looked forward to during the hours both of labour and study, as the enjoyment-time, and would keep up the spirits, and redouble exertion. He recommends, for the more ambitious young gardener, half an hour before going to bed, to the flute, the violin, singing, or dancing; and he uses various arguments to show the advantages of devoting a part of the evening to female society.

Religious Books.—Ignota has sent us a list, which may be obtained of the Agent of the Society for Promoting Christian Knowledge, No. 21. Fleet Street, London. We do not print this list, because, as it is chiefly calculated for Christians of the Church of England (Ignota being "unacquainted with the excellent books of the Scotch Presbyterian Church") to be consistent, we ought to publish lists suited to every class of Christians, which would occupy too much room. We are, however, most sincerely obliged to Ignota.

Dr. Brewster's System of Popular and Practical Science, and *Arnott's Physical Science*, are works that we would strongly recommend for Garden Libraries. It is gratifying to hear a profound philosopher like Dr. Brewster stating it as his opinion, "that many departments of science, which have been hitherto deemed beyond the reach of ordinary capacities, may be made perfectly clear and intelligible." (*Ed. Jour.*, July, 1827, p. 193.)

ART. VI. *Answers to Queries, and Queries.*

PROTECTING Peas from Mice.—Peas sown in November are almost sure to suffer from the depredations of mice, as the peas lie so long dormant in the ground before they vegetate. Can you inform me of the best remedy?—*A. G. Lynn, May 1.*

The plan adopted to prevent their attacks is, when the peas are sown in rows in the usual way, a quantity of furze is cut small with a billhook, and the peas are perfectly covered with the furze. The earth is then drawn over the furze, which proves a safe protection to the pea, and by no means injurious, but rather promotes vegetation. My father has practised the above method for upwards of ten years, and has never failed to protect his early crops of peas from the mice. — *James Brown, jun. Stowe, near Buckingham.*

Prices of Plants, and where they may be procured.—Several correspondents (C. of Manchester, R. of Liverpool, Y. of Yarmouth, and R. S. of Aberdeen, &c.) ask where new things figured in the Botanical Periodicals are to be purchased, complain that they often write for them and cannot procure them, and ask whether we could not give a list with every Number, or with every fourth Number, so as to be bound up with the volume, of the London prices of plants and seeds. In respect to plants newly figured in the *Botanical Magazine* and *Botanical Register*, most of these being rare, and probably in some private collection, are not to be procured in the nurseries. They are to be obtained only from private gardens, through private friendship; from the Horticultural Society through subscribers to the garden; and from Kew Gardens, through very particular interest, or through foreigners. In general, any amateur or cultivator, however remotely situated, may obtain whatever is purchasable in Great Britain or on the Continent, by applying to the nearest respectable nurseryman; who will procure it for him through his London agent, in the same way as any book published in London or Paris may be had through any bookseller in any part of Great Britain. It would, indeed, be absurd to suppose that the same general principles of commercial intercourse did not apply to the commerce of plants and seeds, as well as to every other commerce.

While we state this, we may add that desiderata for completing collections of particular families, such as the *Iridææ* wanted by D. F., are very proper subjects for the *Gardener's Magazine*; and we also think with Mr. Arnott of Perth, that it would tend to promote the progress of botany and gardening, if we could give annual lists, to be bound up with the index to each volume, of the London prices. We believe, also, that it would be worth while for the London nurserymen and florists to circulate such lists through the medium of the *Magazine*; but, if they are so blind as not to see this, so much the worse for them.

Grapes and Wine-making.—Can any of your correspondents inform me what are the proper kinds of grapes of which to make wine similar to foreign wine, also the process of making it, and what is the produce of juice from a given quantity of fruit? I am aware that this subject hardly appears legitimate as to your general objects, but Speechly in his *Treatise on the Vine*, and other horticultural writers, enter fully on the subject, though I cannot find the information I require.—*J. M. April.*

Dr. Maculloch's *Treatise on Wine-making* will supply the information required by our correspondent. — *Cond.*

Downton Castle and Gardens.—Could you, or any of your readers, give me some account of the grounds and gardens of the distinguished president of the Horticultural Society? Of the picturesque beauty of Downton, I have formed a high opinion from Mr. Knight's poem, *The Landscape*, and your *Encyclopædia*; but I have read nothing of the kitchen-garden, and am very curious to know how it is cultivated; whether Mr. Knight's practice is as good as his theories are correct and plausible; or whether, like most other writers, he excels only in that character. What makes me the more anxious on this head is, some remarks on Mr. Knight's theories, and on his practice, which I lately heard made by a distinguished vegetable physiologist and botanist in the Jardin des Plantes in Paris, in company with an eminent English botanist, lately and for some time resident there.—*S. T. P. May 16.*

We visited Downton in 1804, and again in 1809, and can bear testimony to the grandeur and picturesque beauty of its scenery; but it had not then become the scene of horticultural experiment. We understand Mr. Knight keeps no regular gardener, and, if so, it is not very likely his garden will be in very high keeping; it may, however, bear good crops, and it unquestionably is a scene of great interest. We shall, therefore, feel obliged to any reader who has lately been there, or who lives in that neighbourhood, and sees Downton gardens occasionally, to comply with the wishes of our correspondent.—*Cond.*

The turnips I transplant are the common, not the Swedish. You ask, "But do they bulb freely?" I answer, in my own words, "Nothing can succeed better, or produce finer roots."—*Rusticus in Urbe.*

Rare Species of Iris, &c.—Where can the following species of Iris, &c. be purchased, and at what price?—*D. F. Edinburgh, May 18. 1827.*

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|--|---|
| 1. <i>Iris arenaria</i> of <i>Bot. Reg.</i> | 9. <i>Iris longispatha</i> , <i>Bot. Mag.</i> |
| 2. — <i>flavissima</i> of <i>Jacquin's</i> | 10. — <i>ventricosa</i> . |
| <i>Icones</i> , 220. | 11. — <i>sub-biflora</i> , <i>Bot. Mag.</i> |
| 3. — <i>brachycuspis</i> of <i>Bot. Mag.</i> | 12. — <i>Nepalensis</i> , <i>Donn's Prod.</i> |
| vol. xlix. | 13. — <i>reticulata</i> . |
| 4. — <i>Ruthénica</i> var. of <i>Bot. Mag.</i> | 14. — <i>Monnièrii</i> , <i>Decandolle</i> . |
| vol. xxviii. | 15. — <i>amæna</i> , <i>Redouté, Lil.</i> |
| 5. — <i>Bohémica</i> . | 16. <i>Hemerocallis disticha</i> , <i>Bot. Reg.</i> |
| 6. — <i>Caucásica</i> . | 17. <i>Tulipapræcox</i> , } <i>Sweet, H. Brit.</i> |
| 7. — <i>Ibérica</i> . | 18. — <i>altaica</i> , } |
| 8. — <i>lutescens</i> . | |

Application of Steam to Forcing-houses.—1. Is it necessary or expedient that houses heated by steam should also be furnished with common fire-flues?

2. What is the absolute expense of fitting up a house (such as would require two common flues) with steam apparatus?

3. What is the comparative expense of fitting up steam apparatus and fire-flues?

4. Is there any saving of fuel when steam is used?

5. Supposing the original expense of the steam apparatus the greater, does the saving of fuel compensate the increased interest of the outlay?

6. Is there any saving of time in the case of steam apparatus?

7. For what length of time can the boiler be left to itself in very severe weather?

Simple as the above queries may probably appear to some, answers to them from men of experience would be of very considerable interest to me, and probably to many other of your readers.—*N. Edinburgh, April 2.*

I wish to burst the double yellow rose, and apply to you for some assistance. For the last three years I have carefully watched a double yellow rose on its own roots in my garden; it has had the advantage of being placed against a south wall of a hot-house. The first year it produced no buds, the second it produced four, and the third twenty-four, but I have never had the pleasure of seeing a single blossom burst. As soon as the calyx divides, a small insect is seen, which appears to have made the bud its habitation, and to have lived upon the petals of the flower. The plant has been constantly washed, and it thrives remarkably well. If through the medium of your widely circulated Magazine you could suggest any plan for destroying the above-mentioned insect, you will confer a great obligation upon Yours, &c.—*R. N. Southborough Lodge, Bromley, Kent.*

Primula sinensis.—Some hints on the propagation and culture of this plant are wanted by—*A Constant Reader, &c. March 10.*

Cutting over young Forest Trees.—Having been engaged in planting recently in a very chalky soil, which has been well trenched to the depth of eighteen inches, and finding that the trees, excepting those of the fir tribe, have in many cases seemed to flourish for the first year, and then come nearly to a stand, and so seem disposed to continue, particularly the ash, I would beg to ask you whether I am right in wishing to have them all cut down? how near the ground it ought to be done? at what time of the year? whether all the sorts ought to be so treated, say oak, ash, birch, beech, sycamore, elm, hazel, thorn, &c.? whether it ought to be done the first, second, third, fourth, or fifth year after planting? and whether it ought to be repeated?—*W. Thonville.*

We should feel obliged to Mr. Gorrie if he would send us answers to the queries of our correspondent.—*Cond.*

The Coffee Bean, "it is generally said, loses its vitality in a few weeks. Some years ago, when I resided in Italy, my children used to sow the beans which we had in daily use, and they grew freely. I suppose they were imported to Leghorn from Africa, but how old they might be I am not able to say. When I mentioned this to a gentlemen curious in botanical matters, he told me he had raised date and cocoa palms from nuts bought in the London shops, but had never tried the Coffee. I should like to know the experience of others on the subject."—*C. H. D. March.* Since the above was in type, we have seen a young Coffee plant raised from one of a handful of seeds, taken indiscriminately from a parcel of Mocha Coffee purchased in the shops.—*Cond.*

Destroying the Green Fly on Peach Trees.—"Has any correspondent tried the effect of Digitalis for this purpose? I procured 4 oz. of tincture of Digitalis, which I mixed with about 3 pints of water, and in the evening, with a small brush, which I made with soft feathers, I brushed over every part of a tree very much infested, with the mixture. Next day the insects appeared to be dead; in two or three days I was convinced they were so; I then took a pot of soft water and washed the tree as clean as I could; it soon after began again to produce fresh wood, and is now at the time of my writing this completely filled, with the exception of one small branch at bottom, with sound, firm, and healthy wood.—*D. F. July, 1826.*

Mildew.—Sir,—You will particularly oblige me, as well as a number of your subscribers in this part of the country, by inserting in your widely circulated Magazine the following queries, relative to that hitherto incurable evil, so troublesome to gardeners, the mildew. Of this evil, all gardeners have reason, more or less, to complain; and, as far as I know, none have yet found out its radical cure. The questions which I now solicit you to publish may, probably, by attracting the attention of some of your scientific readers, be the means of eliciting from them some-

thing that might lead to that desirable end, and confer an invaluable benefit on all those connected with horticultural pursuits:—

Is mildew a constitutional disease in some genera of plants? Is it itself a vegetable, or is it an insect?

It is generally thought that cold wet soils and cold wet seasons, if they do not actually produce it, very much promote its growth; but it is a well known fact, that mildew is found prevalent in a greater or less degree in almost every soil and situation in this country, in hot and dry, as well as in cold and wet seasons; and, unless there are different species or varieties of it, how is it that in the hottest seasons, and on the driest soils, our culinary vegetables, particularly the leguminous and brassica tribes, suffer so much by it as often to be entirely destroyed; while on cold soils and in wet seasons, mildew on such vegetables seldom appears?

It is well known to many gardeners that peach and nectarine trees, bearing dark-coloured fruit, as the Royal George, Red Magdalen, Galande, &c. peaches, the Red Roman, Newington, and other nectarines, are very subject to mildew in almost every soil and situation, while the light or pale coloured, as the Noblesse, Montauban, and Vanguard peaches, the white, Duc de Tello, and other pale-coloured nectarines, are scarcely ever affected by it. With roses I have found it the same. Rose trees, bearing dark-coloured flowers, are seldom free from mildew, while those which bear light-coloured flowers are very little affected by it.

It may be said that the dark-coloured peaches and nectarines are the finest, and require more heat to ripen their wood; but that, I should suppose, is hardly correct, for we see that some of the light-coloured peaches are latest, and, indeed, scarcely ripen either their fruit or wood in this country in the best seasons: I might instance the Catherine and other Clingstone peaches, and the White and other nectarines, both Clingstones and Freestones.

Some are of opinion that mildew is a plant, and its seeds being very small are carried about with the wind, and, if those species or varieties of plants whose juices are congenial to its nature are more glutinous or more pubescent than their neighbours, they are most apt to catch the seeds as they fly, and consequently liable to be most affected by it; but, on the most minute inspection, I cannot perceive that dark-coloured peach or nectarine trees are more glutinous or more pubescent, either in foliage, wood, or fruit, than those of a light colour. The dark-coloured roses are certainly more pubescent, in the young shoots and leaves, than some of the white or blush varieties; but none of them are so pubescent as the different varieties of the moss rose, which are not so subject to mildew as the darker-coloured roses.

From the above considerations, I would beg to submit, Is mildew infectious? and, Why are trees, bearing high-coloured fruits or flowers, more liable to its attacks than others? I am, Sir, &c.—*J. Y. Perthshire, June 7. 1827.*

Fruiting the Pine-apple.—In large collections of pine plants, it frequently happens that several full-grown plants fail of fruiting in due season, while at the same time some of the succession plants show fruit twelve months earlier than is desirable, though precisely under the same mode of treatment as to soil, air, water, &c. Any information by which the evils stated above may be remedied, and the fruiting of pine plants be reduced to a greater degree of certainty, will be very acceptable to—*A Pine-Grower. May 25. 1827.*

Bearbind and Wire-worms.—I am much troubled with these, and very desirous of knowing how I can destroy them.—*A Kentish Reader. Barfrestone, June 30. 1827.*

Canker in Auriculas. — Information as to the cause, prevention, and cure of this disease is much wanted by—*Carolus. Camberwell, July, 1827.*

Plants of Rhèum australe, Ribes (an Arabic word, not *Ribus*) *hýbridum*, and the Flat Peach of China are wanted by—*J. Y. Yarmouth, July 27.*

Has salt ever been applied as a thin top dressing immediately after sowing (before the seed-leaves appear), as a preventive to the destructive havoc of the *Chrysoméla nemòrum æràta* of Marsham, the turnip fleas (they certainly leap much oftener than fly), or, as they are generally called, the turnip flies?—*Umbratus. May 10. 1827.*

ART. VII. *Retrospective Criticism.*

CHANGING Botanical Names.—Sir,—At vol. ii. p. 422. of your *Gardener's Magazine*, you have proposed changing the name of *Wistèria chinénsis* to *W. Consequàna*, an alteration which I think not advisable or likely to be adopted. Nor is it proper that it should, as certainly every name first published that is not absolutely wrong, or that would not tend to mislead, should be adopted. If there is not some such rule to go by, there will be no end to the change of names. I am much pleased with Decandolle for adopting this plan, in restoring original names instead of those which have been in use for a considerable time, and only changing names when several plants have been confused under the same name, so that it would be difficult to make out the original one. In this case he has adopted *W. chinénsis*, for the present plant, first published in the *Botanical Magazine*, rather than *sinénsis* published since in the *Botanical Register*. Your Chinese friend Consequa, I should presume, would also be better pleased with having some plant named after him, which had not been already published. I am not averse to the dividing genera where it is needful, but I certainly am of opinion that the original specific names should be always adopted, and that generic names should not be changed, except where the genus is divided. I therefore agree with Sprengel in his *Systema Vegetabilium*, Link in his *Enumeratio Plantarum*, and Sweet in his *Hortus Britannicus*, in adopting *Bèlis* of Salisbury for the *Pìnus lanceolàta*, instead of *Cunninghàmia*, proposed by Brown, most probably out of opposition to Salisbury, and not from any fear of its ever being confused with *Bèllis*, as he pretends, as that is not likely: or, if such is the case, Brown's genus *Calèya* must certainly be altered to give way to *Càlea*, an old established genus; *Dáhlià*, from sounding like *Dàlea*, and many other alterations that I could point out, must take place from the same cause. But I am afraid I have been troubling you with an uninteresting criticism. Should it attain a place, I shall most probably be induced to continue my criticisms occasionally, as I am a friend to the science of botany and gardening generally, though so humble an individual as—*A Female Critic. Kent Road, July 29. 1827.*

We are happy to have called forth the remarks of our female friend, and should wish to hear from her frequently. We cannot give up the specific name *Consequàna*; but as it is the first we ever presumed to propose, if A. F. C. and our other friends will adopt it, we promise never again to attempt another botanical alteration, which, as mere horticulturists, we acknowledge we are not legitimately entitled to do.—*Cond.*

The Warrington Gooseberry, according to Mr. Saul, has been praised by us (*Gard. Mag.*, vol. ii. p. 74.) beyond its merits, as compared with the large show gooseberries. To convince us of our error, our indefatigable

correspondent has sent us a box containing specimens of twenty-one large sorts, and of Warringtons, all grown in the same garden. The berries had so far lost their flavour before arrival, that we could not form a correct judgment as to their comparative merits. We certainly have hitherto preferred the flavour of the Warrington, Ironmonger, and old Rough Red, to that of any red gooseberries we ever tasted; but this may be from our very limited knowledge of the large Lancashire sorts, and, at any rate, as an editor, we wish to have no opinion of our own. Mr. Saul writes us his opinion, that the Warrington will soon be put out of the question, as compared with the show gooseberries; for those who have begun to cultivate the latter find them superior, both for every culinary purpose, and for the dessert. They come much earlier in the spring for tarts, and at least ten days earlier than the Warrington; they are also great bearers. "You would be surprised to see the quantity and size of some of the berries in the gardens near this town. The blackbirds and thrushes are remarkably fond of those large berries; they pick off the end of the berry, and then scoop out the inside, and leave the husk hanging by the petiole like a bell. The birds are caught by placing a steel trap [query, of what description?] on the ground under the largest berry, without any bait. The bird jumps on the trap to reach the berry, and is taken. It is expected the show berries will be heavier this year than has ever been known. Those I send you were gathered at random from my garden, and yet one of them, the green favourite, weighed 17 dwts. At the public show here, on the 28th of July, the heaviest green berry weighed only 14 dwts. and 22 grains. I do not subscribe to this show, because, as it is held at a public-house, I consider it has a tendency to encourage drinking." Mr. Saul recommends the following gooseberries as deserving a place in every garden:—*Reds*. Princess Royal, Huntsman, Top Sawyer, Fox Hunter.—*Yellows*. Rockwood, Viper, Scorpion.—*Greens*. Favourite, Troubler.—*Whites*. Wellington's Glory, Lion.—*For preserving*, the Crown Bob.—*Lancaster*, Aug. 10.

The Huntsman Gooseberry is one of the best flavoured of the Reds; at the late Windsor Show, several of them weighed more than 1 oz. each; it is a great bearer, free grower, and very hardy.—*J. P. B.* August 15.

No fruit improves more by cultivation than the gooseberry; "you mistake in calling the large specimens monstrosities; allow me to say there are many of them remarkably fine, handsomer berries, and of as rich a flavour as any of the oldest and most admired small sorts, of which, in fact, they are only improved varieties, and they will bear as plentifully, and with as great certainty. I presume you will hardly pay the same compliment to all the improved sorts of peaches, plums, pears, apples, strawberries, and every other horticultural production, on the improvement of which so much valuable time has been spent, and which productions of late years have been so much increased in size, and so materially benefited in all their qualities. In the present age of improvement, I think it may be doubtful if it should be applied to carnations, pinks, roses, double dahlias, and other florist's flowers, which are daily increasing in size and beauty, at an immense sacrifice of time and labour; yet a botanist may truly call them all monstrosities."—*Suffolciensis*. August 4. 1827.

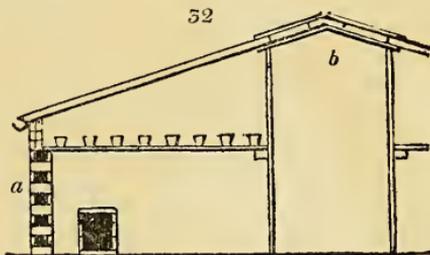
ART. VIII. Calls at Suburban Gardens.

GOLDWORTH Nursery, near Woking, Mr. Donald, F.H.S. May 15. 1826.—In the neighbourhood of Woking and Chobham there are several nurseries which are chiefly devoted to raising articles for the trade; that of Mr. Donald is the principal nursery for stocks for fruit trees; but most of the

leading hardy articles are also grown there. The stocks are cherries, crabs, Paradise apples, pears, and common, muscle, Brompton, Brussels, white pear, and mignonne plums. The Paradise apple and plums are raised from layers, and the others from seeds. The laying is not practised in the usual manner, but the young shoots laid down in a horizontal position their whole length, without being tongued; they are then wholly covered with soil to the depth of about two inches, and in that state throw up shoots from every bud, which shoots root at their lower ends, and are ready to be taken off in the autumn. An immense number of plants are thus obtained annually from one stool.

There are some other practices peculiar to the nurseries in this quarter, and some also which are peculiar to Mr. Donald. Among the former may be mentioned the mode of shading and protecting newly sown pine and fir seeds, by covering the beds with small furze, large heath, and similar ligneous matter as a mulch. This at once deters birds, excludes excessive light, and preserves moisture; as the plants come up the mulch is removed by degrees. Of Mr. Donald's peculiar practices we shall only at present mention that of propagating the different varieties of *Arbùtus Unedo* by cuttings, a thing not, as far as we know, done in any other nursery.

In noting down what presented itself in passing through the grounds, we begin with a propagating house lately erected. (*fig. 52.*) It stands south and



north, with a span roof and hollow walls (*a*) on Mr. Silverlock's principle. (*Encyc. of Gard.*, § 1561.) By means of a boarded roof over the centre path (*b*), the sashes can be pushed up, as well as drawn down, which is a great advantage in houses of this description, both for ventilation and working. In this and other houses were stools of thirty different sorts of *caméllias*, and a large stock of young plants raised from them.

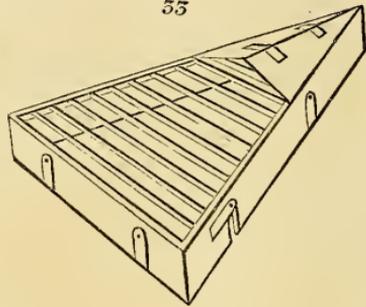
Standards of *Rhododéndron pònticum*, and *R. catawbiéense* were first grown by Mr. Donald; and the straw and light orange azaleas were raised by him. There is a large stock of *Magnòlia tripétala*, tall plants; medlars are superiorly grown; and also the different species of *Clemàtis*; forest trees and thorns to a considerable extent. In transplanting the last, the plough is used to turn in the earth on the plants, but the trench for bedding them on is prepared by the spade.

The planting, and all the operations of culture in this nursery, are performed with a degree of neatness and precision, which is rare even in those of the metropolis: one reason is, that the men employed here are not gardeners who have come in to work for a few weeks or months till they can get a place, but local labourers who know nothing more of gardening than the performance of the operations of nursery culture which they have been taught, and which they continue to perform year after year, till they attain a higher degree of perfection in them than professed gardeners; the soil, which is a light sandy loam, is also highly favourable for nice operations; but the grand reason is, that few masters of nurseries are more particular, or have a greater love of neatness and order, than Mr. Donald. On a recent addition to his nursery grounds, purchased by Mr. Donald, he has built some cottages for his workmen, with hollow walls, in Silverlock's manner, already mentioned; a circumstance which does credit to him as a liberal-minded man for adopting a plan so new, and as a man of sense for adopting one so decidedly advantageous.

Waterton's Nursery, near Chobham, May 13. 1826.—This nursery is noted for its extensive propagation of American plants, for which it is peculiarly adapted, having several acres of natural bog. Some new varieties of *Azàlea* and *Rhododéndon* have been raised here, and we do not suppose that in any nursery there is such a stock of these and other American plants of a large size. The grounds are well sheltered by hedges, chiefly of beech, hornbeam, and thorn; some of them are remarkably well trained, being not more than a foot broad at the ground, from 10 to 15 feet high, and only a few inches broad at the top. The display of *Azàlea* and *Rhododéndon* blossoms here about the middle of June must be most splendid; but a more particular account of this, and some other nurseries in the neighbourhood, we shall defer till a future opportunity.

Virginia Water, May 14. 1826.—This is a large artificial lake, which may be considered as a beautiful episode to the general scenery of Windsor Park. It is surrounded by a drive of mown turf, which commands agreeable views of the water, and some buildings which are brought in as objects. Among the latter are an archway which serves both as a gate and a bridge, a boathouse, two prospect towers, and the keeper's lodges. The lake empties itself by a very well constructed cascade, which is best seen from the public road. On the lawn before the keeper's lodge we observed a hen-coop on a very good plan. (*fig. 55.*) One angle is covered for the hen to sit under during rain and at nights; the remainder of the roof is covered with open work, under which the young fowls run about and eat their food; and they are let out or shut in at pleasure by small openings in the three boards which compose the side of the triangle. In the course of the drive round the lake, some fine specimens of Italian and Weymouth pine occur, and in one place groups of the latter have risen from self-sown seeds, giving a wild forest character, not unlike what one meets with in Poland.

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Oatlands, Ball Hughes, Esq. May 14. 1826.—The kitchen-garden here is capitally managed by Mr. Brown, who, notwithstanding the coldness of the season, gathered peas from the open ground so early as the first of May. They were of the kind called the nimble Dick, nimble taylor, early May or double blossomed frame; an early pea imported from Holland soon after the peace of 1814. They were sown on the 12th of November last, and received no protection whatever during the winter. The situation of this garden is particularly warm, and the soil remarkably light and dry. In Lord Tankerville's garden, not two miles distant, the same sort of pea was sown on the same day, but none were fit to gather till after the middle of May. In a pine-stove here vines have been grown for a number of years without having been taken out to winter, and have borne good crops every year. This is in conformity with M'Phail's doctrine and practice, which we, thinking the vine and all deciduous trees require a winter, have always been in the habit of considering as not to be commended. On expressing this to Mr. Brown, he pointed to his own crops, and referred us to Mr. Shepherd's pine and vine houses at Sunbury. Every part of this garden is in excellent order. We regret to find that the present proprietor has excluded the public from walking in the park.

St. Anne's Hill, Mrs. Fox, May 15. 1826.—This is a very interesting and beautiful place, both on account of the extensive prospects obtained from the house, and the taste for picturesque beauty and rare plants displayed

by the late Mr. Fox in laying out the grounds. It is most gratifying to observe that every part of these is kept in as high order and polished neatness, as the greatest admirer of garden scenery could wish. We cannot enter into a detail of their beauties; those of architectural art and sculpture, as the temples, covered seats, and antique statues, are easily described or copied, and may be reproduced anywhere by wealth; but to depict or imitate the disposition of the trees and shrubs, requires a degree of taste and talent much less common than either money or architectural skill.

Among the trees are some fine cedars. A large one, which we should have thought upwards of half a century's growth, was brought here a small plant, by Mrs. Fox in her carriage, from Lee's Nursery about 30 years ago. It is now upwards of five feet in circumference at the ground's surface. Looking from the house to the distant scenery, the variety of kinds and forms of trees in the foreground, their colour, grouping, and connection are particularly happy. Not less so is the manner in which the kitchen-garden is placed; blended on two sides with the pleasure-ground; on the opposite two enclosed by beech hedges; concealed from the exterior by evergreens; and the garden itself intersected by grass walks. The effect of the latter and the green hedges, being so different from that of the broad surfaces of gravel and bricks in ordinary gardens, gives a charm to the scene which in the present day may be considered as quite original. It is true, indeed, that the enjoyment of wall fruit is wanting, and there is only one small hot-house; but to have introduced much glass or brick walls would have marred the effect of the place when viewed from other places. A proof of this may be seen at Cooper's Hill, where a former proprietor of Kingswood Lodge, a situation in many respects similar to St. Anne's Hill, introduced a red-walled kitchen-garden in front of his house, which is, or was some years ago, a harsh and disagreeable feature from many parts of the country which lie before it.

In front of the house, some lozenge-shaped groups of China roses, bordered by low hedges of ivy, have a particularly good effect. Mr. Tucker, the gardener, deserves great commendation for the high order and keeping of every thing under his charge: he has held the situation 20 years, which adds to his value.

Sunbury Forcing-Garden, Mr. Shepherd, May 15. 1826.—This is a small garden, almost wholly occupied by hot-houses and pits, in which pine-apples and grapes are grown for the market in a very superior manner. The most remarkable circumstance as to the grapes is, what we have already hinted at, that the vines have been in a state of continued pine-apple heat for 30, and some for nearly 40 years, all the while bearing excellent crops. The sorts are chiefly the black Hamburgh and Sweetwater, with some Muscats; but the latter do not thrive well in this garden; in some houses even the Sweetwater does not thrive so well as in others; but, in all, the Hamburgh grows freely and bears abundantly. Mr. Shepherd's general practice is, to keep his pines at a very low temperature in the autumn, and very high in the beginning of summer, the difference between which gives the vines a comparative winter; add to this, that they are chiefly trained over the back path, and that, by letting the sashes down during the greater part of the day in September, the leaves and shoots are exposed to the direct influence of the weather. A sort of winter is in some cases produced, or at least prolonged, by training the shoots so close under the roof glass, as even to be in contact with it; that position being, in the winter season, the coldest in the house, from the radiation of heat from the exterior surface of the glass. Mr. Shepherd strips the leaves off the vines every year, in the end of October, or beginning of November, because soon after the latter period the sap begins to rise. In general, the Sweetwater vine so treated ripens its fruit about the beginning of April, and the Hamburghs about a month later. The plants at the warmest end of the house, where the flue enters, in some cases ripen

their fruit a month earlier than those at the cold end ; and the vines in the succession pinneries are, of course, much later than those which are ripening fruit. By this means a succession of grapes is obtained from April to July. There are now in these houses ripe Sweetwaters and Hamburgs, and Hamburgs and Muscats not larger than radish seeds. The stems of most of the plants are within the houses, in general in the back path, and the vines trained under the glass over that path ; but sometimes they are planted in front, and trained under the rafters. In the latter case the roots extend into a front border ; in the former they extend under the tanpit, and into a border behind the back wall. The borders are never dug, but every year a coating of about a foot in thickness, of half-rotten dung, is spread over them, to keep out the frost in winter and drought in summer, and to nourish the roots, and encourage them to come to the surface. On examining this dung, the fibrous roots are found occupying the surface of the soil, and rising into the decayed part of the dung.

Vauxhall Nursery, 17th April.—Messrs. Chandler and Buckingham have been famous for their collection of Camellias for several years. The blow is now rather on the decline ; but still there are many fine specimens, the glass being covered with mats during sunshine to prolong the bloom. Several varieties of waratáh, blush, single white, the myrtle-leaved, and sasánqua are very fine. In a separate house are the new sorts raised from seed in this nursery, including those figured in *Camellia Británnica*, a work which we have elsewhere noticed (Vol. I. p. 317), and some others which have not yet received names. There are various other very fine and showy plants here. Many of the green-house shrubs of the season are in luxuriant blossom. *Azàlea índica álba*, *Pæðnia móltan* vars. *ròsea* and *papaveràcea*, *Rhododéndron fràgrans*, *Prostránthera violàcea*, *Amarýllis Johnsoni*, *Erica nigrétta*, are a few of the names. This nursery contains a large stock of *Pæðnia papaveràcea* and *móltan*, *Magnòlia conspícua*, and *Pýrus japónica*. The first of these plants is not to be purchased under five guineas. Messrs. Chandler and Buckingham commenced with a score of them, when they were at a much higher price, about seven years ago ; and must therefore have a very considerable capital employed on this particular plant. That it should be worth a tradesman's while to do such a thing, is a gratifying proof of the immense riches and botanical taste of this country.

Gibbs's Nursery, Old Brompton, April 18.—We called here, expecting the pleasure of viewing Mr. Gibbs's collection of hybrid cowslips, the most extensive that probably was ever formed. Unfortunately, last winter's frost has destroyed every plant of the collection in this nursery ; but in Mr. Gibbs's grounds at Ampthill there are duplicates of most of the sorts, which have survived. These hybrids were arranged in four divisions ; oxslip cowslips, polyanthus cowslips, primrose cowslips, and auricula cowslips ; and the varieties under each division were numerous, and very beautiful : we believe Mr. Gibbs was the first that ever originated such varieties. A very fine bloom of apple trees is now expanding in this nursery ; there are upwards of 400 sorts, which have been proved, and of which the proof trees remain, as specimens, and for the purpose of supplying grafts. The blossom of one tree struck us as being remarkably large and beautiful : we were informed it was the Scarlet Perfume, an apple of first-rate merit, very odiferous, and of the highest flavour. Mr. Gibbs has proved most of his apples by grafting them on other free-growing apple trees of three or four years' growth : he generally puts three or four sorts upon a tree, forming so many boughs, and distinguishing each by a number stamped on lead, and suspended by copper wire. Several of Mr. Braddick's new Flemish pears are coming into blossom here ; and some sorts have already been proved. The leading features of this nursery are fruit trees, and the original grass garden, from which it is said the idea of the one at Woburn Abbey was taken.

ART. IX. *Biography.*

Some Account of Richard Richardson, Esq. M.D. F.R.S. &c.

THIS celebrated naturalist was born at North Bierly, the residence of his ancestors, near Bradford, in Yorkshire, in 1663, being baptised on the 24th of September in that year. He cultivated, at an early age, with his own hands, all the exotic as well as rarer indigenous plants he could find in his neighbourhood, disposing them, while yet a boy, as I was informed by his son, according to what he then thought their natural affinities, especially the orchideæ, umbelliferæ, and cruciferæ, of which I saw a great many still thriving there, long after his death, in 1776.

Possessing a handsome estate, and devoid of all that ambition which stimulates many country gentlemen to preside on a bench of magistrates, he studied and practised medicine, rather from a wish to alleviate the sufferings of his neighbours and friends than to enrich himself; and, when, in maturer age, his great sagacity in discovering the cause of most diseases was aided by having experienced the best modes of curing them, he was frequently called to a great distance, throughout his own and the adjoining counties; on these occasions, if the patient was not opulent, he only would take such a fee as to repay the expense of his journey, which was generally made on horseback.

At what period he first visited the Continent I cannot learn; but his son told me that a plant of *Cycas circinàlis* of Linnæ's *Sp. Pl.* ed. 2., and *Hort. Cliff.*, was sent to North Bierly, in 1702, from Leyden, where, I suspect, he had graduated; and that plant, when I saw it in 1776, had acquired a stem three feet in height.

To this species of *Cycas*, in a work which has long been ready for the press, I shall restore Herman's original name of *Japónica*, expressing the eastern boundary of the genus, and which, instead of misleading, will be useful to our gardeners; for most Japanese plants endure a great degree of cold in winter, if they have sufficient heat in summer. This grows wild abundantly in the islands of Lequeo and Kinsin, and is much more hardy than two other species, now confounded under the same name: 1. *Cycas circinàlis* of Petit-Thouars, which is indigenous in the islands of Madagascar, Java, and Amboyna; 2dly, *Cycas circinàlis* of Linnæ's *Mantissa*, and *Fl. Zeylanica*, which is the true *Tódla pána* of Rheede, and probably confined to the Mysore range of mountains.

Little more is known of Dr. Richard Richardson, at this distance of time, even by his son, and immediate heiress Miss Currer, than that the mildness of his disposition, elegance of language, and liberality in communicating his deep knowledge to the various scientific men with whom he became acquainted, soon endeared him to them all, and he was elected into the Royal Society in 1712. How accurately he distinguished both the cryptogamous and phænogamous vegetables of Great Britain will remain proved to ages by the third edition of Ray's *Synopsis*.

The green-house at North Bierly was, like most of that period, covered by a slated roof, and only glazed in front; but the stove had partly a double roof of glass, and this must have been erected before the commencement of the 17th century; for I saw a memorandum in one of Dr. Richardson's books, that he had sent a pine-apple, weighing 3lb. and 1 oz. on the autumnal equinox of 1698, to his friend and most skilful botanist Mr. Ray, then confined with a bad leg.

I believe he never published any work, except the following dissertations:—

On Subterraneous Trees, &c.: *Phil. Trans.*, vol. xix. p. 526. Observations on a Boy who lived to seventeen years of age without any Secre-

tion of Urine; on the Trout of the Welsh Lakes; on the Eraine; the Nut-Hatch, the *Régulus cristatus*, and the *Hélix pomatia*: *Phil. Trans.*, vol. xxviii. p. 167. A Relation of a Waterspout in Lancashire: *Phil. Trans.*, vol. xxx. p. 1097. On the *Squilla A'quæ Dulcis*, destroying the young Fry of Carp and Tench: *Phil. Trans.*, vol. xxxviii. p. 351.

A plant belonging to the extensive natural class of *Rubiaceæ* was named Richardson, after him, by Houstoun, and adopted by Linné; but if that be really *sui generis*, it will now be necessary to particularise it with the title of *Richardsonia*; for Kruitz has lately named *Cála æthiópica* of Linné after the excellent French carpologist, with stricter propriety, *Richardia*.

Our celebrated countryman lived to the age of 77 years and 7 months, dying on the 21st of April, 1741. A bust, which would not disgrace Chantry's chisel, is placed on a simple monument at the head of his grave, in the chancel of New Chapel, near Cleck Heaton, with the following epitaph:—

M. S.

RICHARDI RICHARDSON, M.D. F.R.S.

Rerum naturas investigando, veterum monumenta perscrutando, apprime sciens, ille artem medicam, summâ cum felicitate, summa etiam liberalitate, exercuit; mitis animi candore, singulari morum suavitate, spectatissimus. Vixit annos 77. Decessit, A.C. 1741. (*Com. by R. A. S., Esq., April, 1826.*)

Gilbert Slater, Esq., late of Low-Layton, Essex.

This gentleman, who died in 1794, was, from his earliest years, passionately fond of plants; and was not less respected for his amenity, liberality, and every characteristic of a gentleman, for his opulence and honour as an English merchant, than for his enthusiasm as a botanical collector. His gardens, and their extensive buildings, were the dépôt of every thing valuable, curious, and rare. He spared no expense in procuring and cultivating an extensive and well-collected assortment of exotics; and, being all his life connected with East India commerce and shipping, was indefatigable in procuring from them the vegetable beauties described in the writings of Kæmpfer, Thunberg, and Du Halde. He wrote and printed lists and directions for collecting and transporting seeds and plants, which he distributed among his friends in the China trade; and, though year after year disappointed in only receiving what he had had ten times before, yet he persisted in his endeavours, and, by unceasing expense, still hoped to possess the beautiful magnolias, the camellias, the pæonies, and azaleas of China. For this purpose, he sent out in his own ships three young gardeners (two of whom never returned) at different times; and, had he lived but a few months longer, he would have had the long wished for gratification of finding himself possessed of many of those plants which he had so long desired to see, and which have been, and now are, the most splendid ornaments of our gardens.

In his lifetime he had great pleasure in introducing several plants, which are still great favourites, viz. the *Hydránga*, *Rôsa semperflôrens*, *Volkméria índica*, *Magnôlia pumila* (or night-smelling), and various others of less beauty; and, notwithstanding many Chinese plants are now introduced which Mr. Slater never had any description of, yet several contained in his list are still strangers; and, should any other new genus be obtained from that source (the field of Mr. Slater's exertions), it would be but a consistent act in Decandolle or Mr. Brown, to perpetuate a name which has so fair a claim upon their consideration.

The above memoir is sent to the Gardener's Magazine by one who is desirous of giving it publicity, from a dutiful impulse of grateful remembrance due to the respected memory of a kind and generous master.—*J. M.*

THE
GARDENER'S MAGAZINE,
NOVEMBER, 1827.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Outlines of Horticultural Chemistry, &c.* By G. W. JOHNSON, Esq. of Great Totham, Essex.

IN the following attempt to illustrate the practice of horticulture, by demonstrating its scientific principles, and thereby holding out guides for future improvement, I am not at all prompted by the conviction that any arrangement of mine will produce splendid illumination, or that I have facts and views to adduce that will astonish by their novelty, or be powerfully beneficial by their importance: my humbler object is to combine known facts, and known scientific principles; to trace the regular procession from cause to effect; to represent horticulture as it is, a compound of science and art; to afford a theory to every practice, which by rendering practices rational makes them more impressive on the memory, and facilitates their improvement.

It is certain that a horticulturist should have a knowledge of botany, systematic and physiological; otherwise he will be unable to understand terms and observations that must occur in every well written work on his art, to comprehend the nature and habits of the objects of his culture, or to render observations he may make intelligible to others, if even to himself. Chemistry is of as much, if not greater, importance to him; and to this science, as illustrative of horticulture, I shall chiefly confine my attention. Without a knowledge of it, many of the gardener's simplest operations must be unintelligible to himself, and consequently be casually performed; he knows nothing of them but what he has learned by rote, or

stumbled upon by chance. As evidence of what can be effected by a combination of chemical and practical knowledge in the cultivation of the soil, we may quote the example of Lavoisier. He cultivated two hundred and forty acres in La Vendée, actuated by the beneficent desire of demonstrating to his countrymen the importance of sustaining the art of cultivation on scientific principles. In nine years his produce was *doubled*, and his crops afforded one third more than those of ordinary cultivators. It would be as supererogatory to dwell upon the importance of this improvement, as it is to dilate upon the distinguished station which horticulture maintains among the arts of life. A garden was the first habitation of man; it has ever since been a source of his purest pleasures, of his most healthful employment and sustenance. We ought to hail, with well founded satisfaction, the gigantic strides which the art has made in the march of improvement during late years.

The political economist may view its improved diffusion among the poorer class, as an earnest or means of more important benefits. The labourer who possesses and delights in the valuable appendage of a garden to his cottage, is generally among the most decent of his companions; he is seldom a frequenter of the alehouse: and there are few among them so senseless as not readily to engage in its cultivation, when convinced of the comforts and gain derivable from it. When the peasantry of a state are happy and contented, the abettors of anarchy will cabal for the destruction of its social order in vain; for they will have first to efface the strongest of all human associations, home and its hallowed accompaniments, before the rustic will assist in the tearing of them from others, in the struggle to effect which he has nothing definite to gain, and all these flowers of life to lose. Of the taste for horticulture, so diffused among the higher orders of society, we have only to speak in a strain of commendation. It is from persons of cultivated minds, and beneath the fostering care of fortune, that improvements can chiefly arise; and no pursuit is more worthy of such patronage, "*Nihil est melius,*" says Cicero, "*nihil uberius, nihil homine libero dignius.*" (Nothing excels, nothing is more profitable, nothing more suitable for a man of leisure.) Many theoretical speculations must be demonstrated to be futile, many experiments will fail of the desired object, in the progress of investigation; but one happy result confers a benefit on mankind through remotest ages, every failure serves as a beacon for future travellers.

The subject of the present paper is *the root* of plants, its offices, the mediums in which it grows, the nourishment it obtains to its parent plant, &c.; consequently, it includes the consideration of soils, manures, &c.

The root is present in all cultivated plants. The truffle, which, however, can scarcely be considered as belonging to cultivated vegetables, having hitherto defied all attempts to subjugate it, may be considered as consisting of nothing but root. A root is annual, biennial, or perennial. In the two former instances, if the individuals to which they belong be allowed to perfect their seed, no care can protract their existence beyond the ensuing winter, however genial the temperature, &c., in which they are made to vegetate; but, if the ripening of seed be prevented, it is undetermined how long they may in most instances be sustained in life. I have known mignonette continued in healthy vegetation for four years with this precaution. In all roots, and under any mode of management, the fibrous parts (*radiculæ*) are strictly annual; they decay as winter approaches, and are produced with the returning vigour of their parent in the spring. Hence the reason that plants are transplanted with most success during the season of their decay: for, as the root almost exclusively imbibes nourishment by the mouths of these fibres, in proportion as they are injured by the removal, so is the plant deprived of the means of support; that sap which is employed in the formation of new fibres, would have served to increase the size of other parts. The size of the root I have always observed to increase with the poverty of the soil in which it is growing. Duhamel found the roots of some young oaks in a poor soil to be nearly four feet long, though the stem was not more than six inches. The cause of this is evident: the nourishment which is required for the growth of the plant, can only be obtained by an increased wide-extending surface of root, and, to form this, more sap is often required than the plant, owing to the poverty of the earth, can obtain to itself; in that case a soil is sterile, for the plant must evidently perish. Every one may have noticed this familiarly instanced in *Pòa ánnua* growing on a gravel walk, its stem minute, its root a mass of widely extending fibres. A root always proceeds in that direction where food is most abundant; from a knowledge of this fact, we should be circumspect in our mode of applying manures, according to the crop and object we have in view. The soil in my own garden, being shallow, never produced a carrot or parsnep of any size; but almost every root consisted of numerous forks thickly

coated with fibres: digging two spades deep produced no material advantage, the gardener applying as usual manure to the surface; but, by trenching as before, and turning in a small quantity of manure at *the bottom*, the roots always spindle well, grow clean, and have few lateral fibres. For late crops of peas, which mildew chiefly from a deficiency of moisture to the root, it is an object to keep their radiculae near the surface for the sake of the light depositions of moisture incident to their season of growth; hence it will always be found of benefit to cover the earth over the rows with a little well rotted dung, and to point it lightly in. Plants are very much benefited by having oxygen applied to their roots, being found to consume more than their own volume of that gas in twenty-four hours; and, when applied by Mr. Hill to the roots of melons, hyacinths, &c., the first were found to be improved in flavour, the second in beauty, and all in vigour. (*Hort. Trans.* vol. i. p. 233. and *Gard. Mag.* vol. i. p. 232.) Everything, therefore, that promotes the presentation of oxygen to the roots of plants must be beneficial: hence we find that frequently stirring the ground about them promotes their growth; for, in proportion as the soil is loose, can the atmosphere easily penetrate it. Moist earth rapidly absorbs oxygen from the atmosphere, as Humboldt has demonstrated, but dry soil does not: this affords another reason for frequently stirring the earth about plants during the droughts of summer; for well pulverised soils admit the evening dews, &c., more freely than consolidated ones, and consequently dews will be deposited more within their texture, and moisture is more firmly retained in such pulverised soils, inasmuch as that they are not so much heated by the sun's rays, being more pervaded by the air, which, like all gases, is one of the worst conductors of heat. The decomposing parts of animals and vegetables contained in a soil are also highly absorbent of moisture; hence, the more freely the air is exposed to them, the more effectually will they be enabled to exert this power. By being freely exposed to the influence of the air, such substances are more rapidly decomposed, which leads to a consideration of the practice of exposing soils as much as possible to the action of the atmosphere by ridging, &c. When a soil is tenacious, or abounding in stubborn vegetable matters, as in heath lands, it cannot be too completely exposed to the action of the air; but, to light soils, which are in general deficient in organic decomposing matters, Chemistry would say that ridging is accompanied by evils more injurious than can be compensated by the benefits obtained: for such light soils are easily pulverised

whenever occasion requires, are so porous as at all times freely to admit the pervasion of the atmosphere; and therefore, by this extra-exposure, the vegetable and animal remains are hastened in decomposing, and much of their fertile constituents evolved in the state of gas, or carried away by the rains, &c., without there being any crop upon them to benefit by them. Thus Theory argues, and Practice certainly seems to support in this instance her doctrines. Switzer, one of our horticultural classics, says: "Rich heavy ground cannot well be ploughed too often to make it light, and the better manure by killing the weeds; as light poor ground cannot be ploughed too seldom, for fear of impoverishing it." (*Ichmographia Rustica*, vol. iii. p. 237.)

We have seen that plants search after and acquire food by the agency of their roots; and the extremities of these appear to be the chief if not only parts employed in the intro-susception of all food not in a gaseous state, for M. Duhamel observed that that portion of a soil was soonest exhausted in which the greatest number of the extremities of the roots were assembled. (*Physique des Arbres*, vol. iii. p. 276.) This explains why the fibrous points of roots are annually renewed, and the caudex extended in length; by these means they each year shoot forth into a fresh soil, always changing their direction to where most food is to be obtained. If the extremity of a root is cut off it ceases to increase in length, but enlarges its circle of extension by lateral shoots. It is by their extremities, then, that roots imbibe food; but the orifices of these are so minute, that they can only admit such as is in a state of solution. Carbon, reduced to an impalpable powder, being insoluble in water, though offered to the roots of several plants, mingled with that fluid, has never been observed to be absorbed by them; yet it is one of their chief constituents, and is readily absorbed in any combination which renders it fluid.

Roots, then, obtain such nourishment to plants from a soil as is in a gaseous or liquid state; we may next, therefore, consider what constituents of soils are capable of being presented in such forms. Water can be the only solvent employed; indeed, so essential is this liquid itself that no plant can exist where it is entirely absent, and on the other hand many will exist with their roots in vessels containing nothing but distilled water. Plants with a broad surface of leaves, as mint, beans, &c., I have always found increase in carbonaceous matter, whilst thus vegetating; but onions, hyacinths, &c., with small surfaces of foliage, I as invariably have found to decrease

in solid matters: the first obtain nourishment by decomposing the carbonic acid gas of the atmosphere, the latter do so in a much smaller proportion; hence the reason why the latter are so much more impoverishing crops than the former, inasmuch as that they acquire nearly all their solid matter by means of their roots. These observations explain the conflicting statements of Saussure and Hassenfratz on this point: the former experimented with broad-leaved plants, the latter on such as have small foliage; the first maintained that plants increase in solid content when their roots are supplied with water only, the latter denied the fact. It has been advanced that water is the sole food of plants; but all experiments are inconclusive which are presented as supporting the theory. In the first place, all waters contain earthy, saline, and organic matters; even distilled water is not pure, as Sir H. Davy has proved, and rain-water Margraaf has demonstrated to be much less so. No plants, growing in water only, will ever perfect seed; and the facts, that different plants affect different soils, and that a soil will not bear through a series of years the same crop, whereas it will a rotation of different ones, demonstrate that they each take different kinds of food from the earth, and not that universal one, water, which is ever present and renewed.

Silica, or the pure substance of flint, is present in all soils; it is soluble in water, requiring one thousand times its weight of this liquid to dissolve it (*Kirwan's Mineralogy*, vol. i. p. 10.); it is found in many plants, and in all the grasses that have been analysed. Alumina, or the basis of clay, present in all soils, is so soluble in water as to be inseparable by the filter, and is much more so when any of the acids are present (*Sennebier's Physiolog. Veget.*, vol. iii. p. 18.); it is found in plants in minute quantities, especially in the grain of barley, oats, wheat, &c. (*Schröder in Gehlen's Journ.*, vol. iii. p. 525.) Lime is found in almost all soils; it is easily soluble in water, and there is but one plant which is known to contain none of it as a constituent, the *Salsòla Sòda*. (*Ann. de Chimie*, vol. xviii. p. 76.) Magnesia, generally present in soils, is soluble in water, and is found in many plants. Iron is present in all soils, in all natural waters, and in all plants. Manganese is found in some soils; it is soluble in water containing acids, &c., and is found in a few plants. But none of these, in a state of purity, either simply or combined, have ever been found capable of perfecting a plant through all its stages of growth, when moistened with distilled water; the contrary was the case, however, when the water contained in

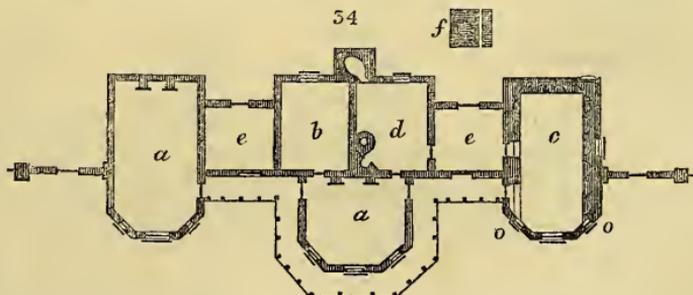
solution vegetable or animal matters, as the dung of animals. Now these matters contain carbon, hydrogen, oxygen, nitrogen, and various salts: the three first are absolutely necessary for the existence of all plants, every part of these is composed of them; nitrogen is found in some plants; and the importance of salts to vegetation is demonstrated by the facts, that clover will not flourish where there is no sulphate of lime, that nettles follow the footsteps of man for the nitrate of potass, which always abounds near the walls of his habitation, and that marine plants linger for the common salt of their native haunts. Salts of some kind or other are found in every species of plant, but none that have not also been detected in soils. During decay, vegetable and animal matters exhale various gases. Carbonic acid, hydrogen, carburetted hydrogen, ammonia, &c., are of the number; all of which have been applied to the roots of plants with great benefit by Sir H. Davy and others.

(To be continued.)

ART. II. *Plan and Elevation of a Dairy Cottage, and Poultry-yard, erected by Mr. B. Mathews, at Syndal House, Kent, for the late Sir Samuel Auchmuty.* Communicated by Mr. A. MATHEWS, A.L.S.

Sir,

OBSERVING that you invite architects to send you plans and sketches of rural buildings (*Gard. Mag.*, vol. i. p. 353.), I take the liberty of enclosing a plan and general view of a dairy cottage, and poultry-yard (*figs. 34. to 36.*), erected by

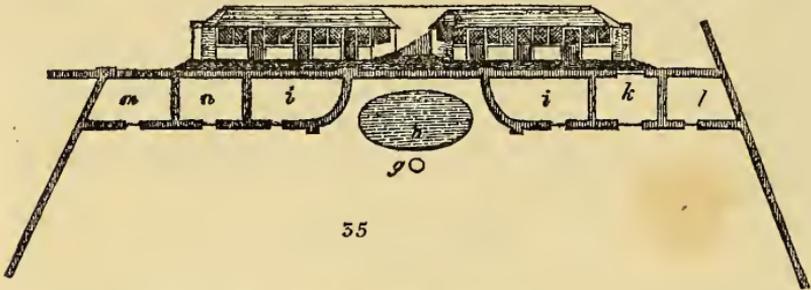


my father, Mr. B. Mathews, for the late Sir Samuel Auchmuty, at Syndal House, near Feversham, Kent, and now in the possession of John Hyde, Esq., who, I am happy to see, is treading the steps of his estimable predecessor, in improving

his estate, and encouraging and assisting the poor of his parish, which, if you think them worth presenting to your readers, are much at your service.

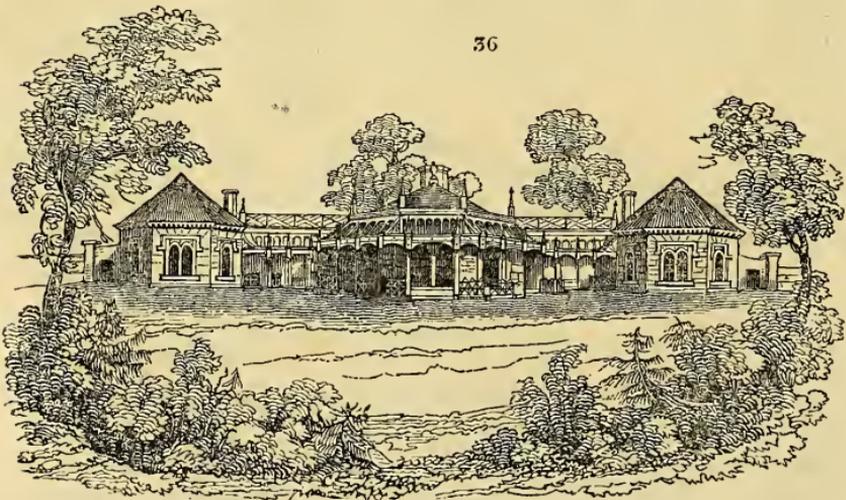
The cottage (*fig. 34.*) consists of two sitting-rooms (*a a*), a bed-room (*b*), dairy (*c*), scalding-house (*d*), and two covered sheds (*e e*).

The poultry-yard (*fig. 35.*) is behind, and contains a pump, well, and cistern (*fig. 34. f*), a pigeon-house on a post (*fig. 35. g*), a pond (*h*), two houses for hens (*i i*), one for ducks (*k*), one for geese (*l*), one for turkeys (*m*), and one for fatting-coops (*n*).



The cow-lodge is at a short distance from the dairy; it is surrounded by the plantations, and is now completely hid from the view. There is nothing out of the common way in its construction.

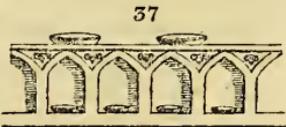
The elevation of these poultry-houses (*fig. 35.*) shows the lower part of the front wall of brickwork, and the upper part of open latticework, painted green. For the better ventilation and health of the fowls, this latticework is left open during the summer; but each division is furnished with wooden



shutters, attached to the plates inside with hinges, which, during the winter nights, and especially frosty weather, are kept closed.

The cottage consists of only the ground-floor; its elevation (*fig. 36.*) is considered handsome. It stands in a gentle valley in the park, about an eighth of a mile from the mansion. The spot was chosen, on account of its soil and situation, for a new kitchen-garden, which was begun at the same time as the cottage. The prospect, though extensive, is not so much so as that from the mansion, which is considered one of the finest in Kent. The cottage fronts the east, looking over the village of Ospringe towards Boughton-under-Blean and Hearn Hill, bounded by the Blean woods, of which it takes in an extensive range. To the north-east is seen to much advantage, though in a valley, the town of Feversham, with its handsome spire, and the tops of the houses rising above its numerous orchards, in some of which are ancient pear trees still in good condition, and producing abundant crops. In the distance, and in the same line, may be seen the shores of Sea Salter and Whitstable, with part of the Isle of Sheppy, called Shellness.

The centre of the building was furnished for the dairy-man and his wife to reside in; the large sitting-room was intended as a room in which the family might occasionally drink tea, in the summer, and, during Sir Samuel's life, it was furnished with his camp equipage. The left wing (*fig. 34. c.*), the dairy, corresponds in size with the right, but is of a higher pitch inside, as the floor is sunk about two feet below the level, and paved with square 14-inch tiles. The shelf for the milk-pans is made of black slate, supported by brick arches, each arch forming a recess for a pan of milk. (*fig. 37.*) In the space between the doors is a small stone trough, supplied with water from the cistern at the well, by a pipe laid under ground. In the centre stands a large table. The two small windows (*fig. 34. o o*) are blanks, forming niches in the inside, in which are placed



a bull and a cow. In the centre of the angles formed by the arches supporting the shelf are fastened small rams' heads (*fig. 37.*), which give the interior of the milk-room an air of neatness and taste. The covered shed (*fig. 34. e.*), next the dairy, is fitted up with racks, in which the milk-pans and other utensils are set to drain; the other shed is fitted up with bins, &c., to keep the corn and provisions for the poultry, and is made use of by the dairy-man as a cellar to keep his beer, &c., in. As coolness

in the summer is essential to a dairy, the wings are neatly thatched with a thick coat of reeds; the centre is slated.

Previous to commencing the building, my father inspected nearly all the dairies of note in Kent, by which he obtained much valuable information. The bricks with which the whole was built were burned on the spot; and the carpenter's and joiner's work was executed by the house-carpenter at the mansion, under his own superintendence as steward to Sir Samuel.

I am, Sir, &c.

ANDREW MATHEWS.

Academy, Turnham Green, March, 1827.

ART. III. *On preparing Ice and filling an Ice-house, so as the Ice may keep for Two or Three Years.* By Mr. JAMES YOUNG, Gardener to Henry Smith, Esq. of Wilford House, Nottinghamshire.

Sir,

NONE of your correspondents having laid before us the proper method of preserving ice, so as it may keep in an exposed situation through the hot months of summer, for one, two, or more years, as may be required, I now venture to do so. Most gardeners who are in the habit of laying up ice annually for summer use, complain of its melting away too rapidly. This, I presume, is owing to the method they practise to preserve it. To remedy this evil, the method which I have practised for a considerable number of years, with gratifying success, is as follows:—

In the months of December or January, when the water-pools are frozen to a sufficient thickness, say one or two inches, proceed to break the ice in pieces, and draw it off the water with iron hooks, conveying it to the ice-house in carts, as quickly as possible. Before throwing it into the house, three or four men should be employed to break it in small pieces, about the size of common road-metal. Then carry it into the house, where two men should be again employed in pounding it almost to powder. Lay the bottom and the sides of the house with a layer of wheat-straw, three or four inches thick. After there are about two feet of ice thus pounded, take ten pounds of salt, and dissolve it in ten gallons of boiling water. When the salt is sufficiently dissolved, pour it on the ice through a common garden watering-pot; thus going on regularly every two feet, watering, and laying

the sides with straw till the house is filled, finishing with a double quantity of the salt water. After it has been in eight days, and when it has subsided, fill up closely with small bundles of straw, to exclude all air as far as possible.

An ice-house filled in this manner will be found, when opened in summer, to be as firm as rock, and to require at all times the force of a pickaxe to break it up. It will be found to keep three times longer than the common method of filling ice-houses, and more suitable for being received from the ice-house for use, as it will keep three times longer when exposed to the air. I was induced to try the above method on account of our ice-house being placed in a very exposed situation. The sun shines from rising to setting on it, and it was found impossible, before adopting this plan, to keep ice above a year, and now it keeps three years, and the last of it is as good as the first.

I remain, Sir, &c.

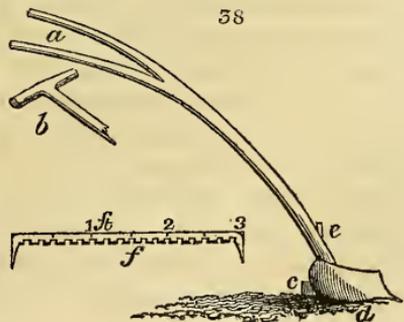
Wilford House, Sept. 5. 1827.

JAMES YOUNG.

ART. IV. *Notice of a Horticultural Plough and its Uses.*
By Mr. WILLIAM GODSALL, Nurseryman and Florist,
Hereford.

Sir,

I TAKE the liberty of sending you a description and a rough sketch of my Horticultural Plough, as I am not aware that any thing of the sort has ever been made use of before. Upon *light* land it is, in my opinion, a most desirable implement, on account of the facility, dispatch, and neatness of its work, compared with that of the hoe. I drill with it for peas, beans, French beans, &c., employing it to cover the seeds, and also to earth the plants. It will readily be seen that it is adapted to drilling and moulding, or earthing other garden crops, particularly where the land is unencumbered with trees, &c. It is used by one man, who, after a little practice, will employ it with great expedition. It may be made with one or two handles (*fig. 38. a b*); if only one, it should have a cross handle at right angles (*b*). The heel (*c*) consists of a piece of light



quartering, bevelled at the fore end, on which is screwed a piece of curved sheet-iron (*d*), to turn the furrow, and having a sharp edge. There is a small square staple (*e*), through which passes a thin piece of iron three feet long (*f*) with notches on the under side, similar to the fastening of a swinging hot-house light; it has feet and inches marked thereon, and each end is painted white and bent downwards, by way of index, to regulate the distance between the drills: but this, of course, may be removed in earthing or moulding the crops. It will serve in the accompanying sketch (*f*) for a scale to the plough, and render it unnecessary to detail its dimensions.

I hope, at some future time, to send you my method of facilitating the planting of ranunculuses, anemones, &c., in beds, and remain,

Sir, &c.

Hereford, May 15. 1827.

WM. GODSALL.

ART. V. *Culture of the Gloriòsa supérba.* By MR. JAMES PRINGLE, Gardener to Lewis Charles Daubuz, Esq. Truro, Cornwall.

Sir,

As none of your numerous correspondents have yet noticed the *Gloriòsa supérba*, in their communications published in the Gardener's Magazine, I am induced to send you an account of my mode of treatment in flowering that really beautiful plant.

The roots are potted singly in 48-sized pots, about the middle of January, in compost, one half loam, one fourth leaf-mould, and one fourth bog-earth. They are then plunged in a cucumber bed (heat, from 75° to 80°), where they remain until the shoots have grown six or eight inches long. Having filled a back corner of a pine pit with compost as above, they are turned out of their pots into the mould, disturbing the balls as little as possible.

It is necessary to support the shoots by either tying them to tall stakes or to a trellis. I form a temporary trellis along the back of the pine pit, to which the shoots are trained horizontally. While the pots remain in the frame, they are watered sparingly; but, when removed to their destination in the pine stove, they have an abundant supply, and the shoots are frequently syringed. When the shoots are decayed, they

are cut over, and the roots allowed to remain without water until they are taken up and potted in January.

From some plants which I plunged on the 9th of April last, the shoots extended the length of nine feet, each shoot producing from five to seven finely blown flowers. I have every expectation of some of the plants ripening seed this season.

I am, Sir, &c.

Truro, August 15. 1827.

JAMES PRINGLE.

ART. VI. *Culture of the Gloxínia maculàta.* By Mr. JOHN NELSON, principal Gardener to William Miles, Esq. Clifton, near Bristol.

Sir,

THE *Gloxínia maculàta* is a most beautifully flowering plant, but it is frequently kept for years without blowing; by adopting the plan of treatment which I am about to mention, it may be flowered every year to great perfection.

First, I pot them off in the early part of March into pots four inches over, in black bog-earth, mixed with a little sand, observing to put one plant only in a pot; and, should any suckers arise, they should immediately be broken off. Secondly, I bring them forward in the bark-bed or dung-frame; as soon as they begin to vegetate, water them freely, and, when the pot is filled with fibres, shift them into pots six inches over; water them freely for about ten days, then place them in pans kept constantly filled with water, still clearing off the suckers should any appear.

By this mode of treatment they will produce flowers from two to three feet in height. When they have done flowering take them out of the pans of water, place them with your other plants, and let them receive the same quantity of water as your other plants receive, until the flower stems begin to decay, then place them on your dry shelves in the stove till the 1st of January, then watering them sparingly until they again make their appearance; again pot them off, and treat them as before directed.

I am, Sir, &c.

JOHN NELSON.

Clifton, near Bristol, March 16. 1827.

ART. VII. *Reminiscences of a Visit to Malacca.* By Mr. JAMES MAIN.

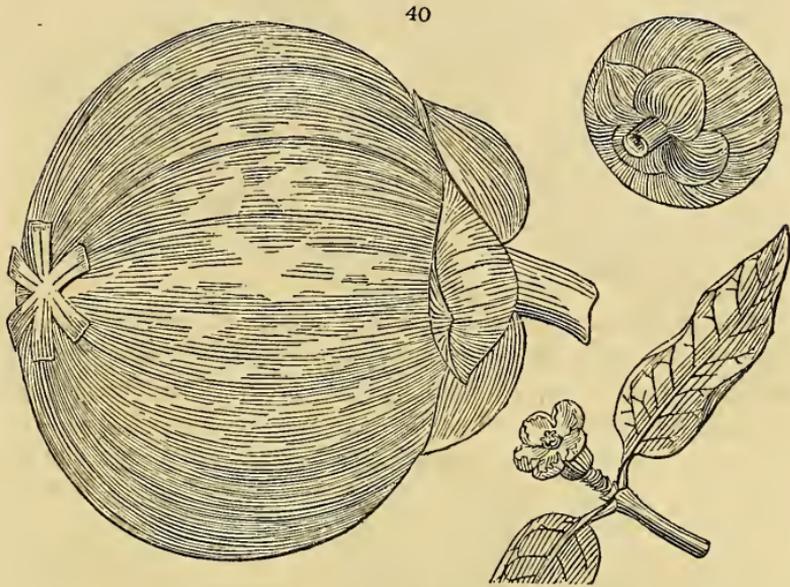
MALACCA is situated on the straits of that name, on the south side of the continent of Asia, opposite the large island of Sumatra. It is a considerable town, part of it fortified by a high wall and fosse, skirted by a narrow glacis. The country is thickly clothed with wood; the soil is excellent, and, if cleared, is fit for the production of spices, sugar, rice, indigo, cotton, coffee, maize, and all kinds of tropical fruits.

Various spices are found wild in the woods, particularly the nutmeg; and, though not equal in quality to the nutmegs of Ceylon and the Molucca Islands, yet, as an inferior spice, they are of great importance in a commercial point of view. Of ornamental trees, the *Æschynomene grandiflora*, the *Tectona indica*, *Barringtonia speciosa*, many species of palms, and particularly the *Michelia Champaca* (fig. 39.), a showy and odoriferous tree, give a character of great richness to the masses of wood. But the catalogue of fruits transcends every thing of the kind perhaps in India: for, besides the fruits common every where in the East, they have the *Artocarpus integrifolia*, *Annonas*, and the *Cárica Papaya*, in great perfection. Of the latter it may be remarked that, though in the class *Dicècia*, both male and female plants produce fruit, only the female tree always bears the largest. The fruit weigh about two pounds each, may be eaten with sugar as melons, but are chiefly used as kitchen fruit. But, of all the delicious fruits in India, none can equal in purity and delicacy of pulp, richness of flavour, and refreshing coolness of juice, those which follow:—



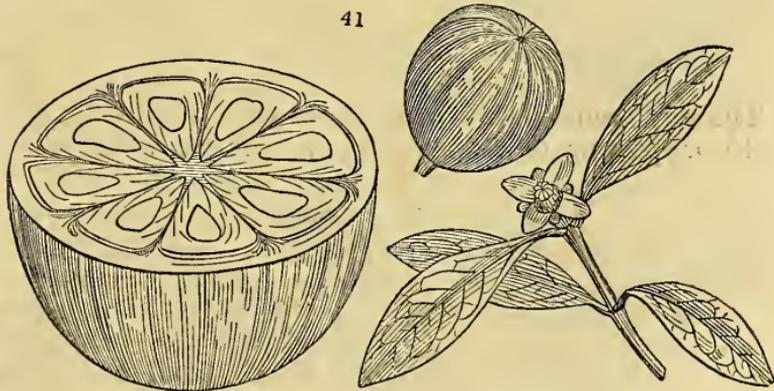
The Mangosteen, *Garcinia Mangostana* (fig. 40., full size), is here in the highest perfection, growing wild in the woods. It is said to be the most salubrious of fruits. The eatable part

is a transparent pulp surrounding the seeds. The calyx and stigma are both permanent till the fruit is ripe.

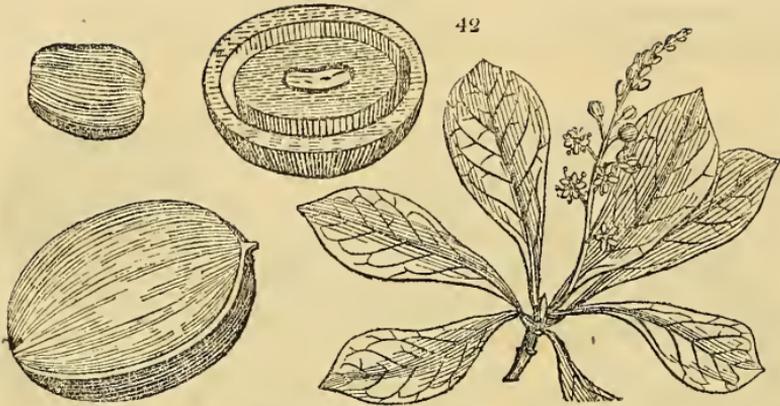


There are three other kinds of fruit, probably of the same genus, viz.

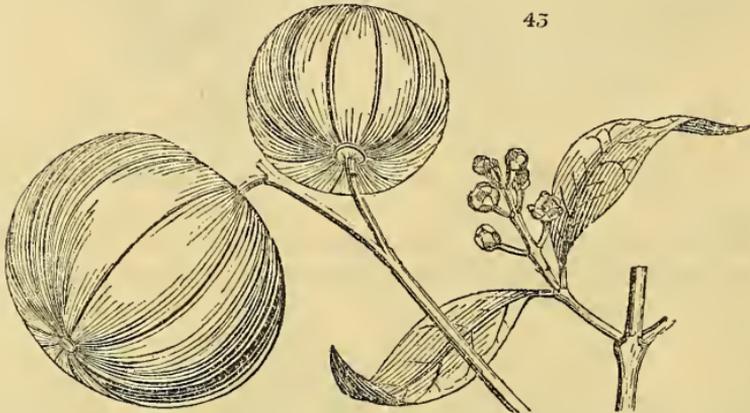
The Duku (*fig. 41.*) is an egg-shaped fruit, about the size of an apricot, and in flavour little inferior to the mangosteen.



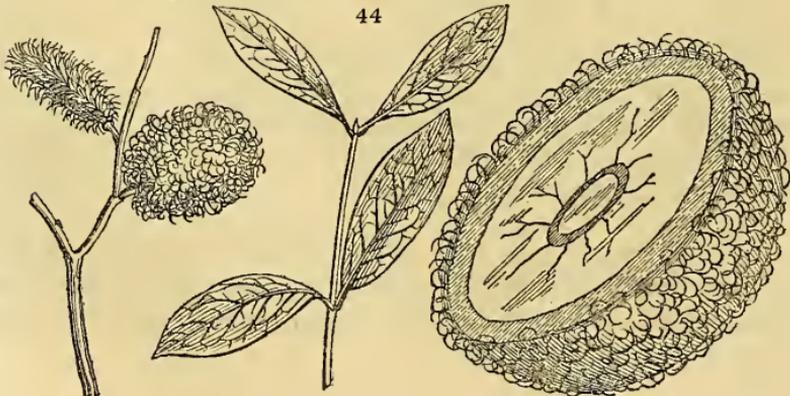
The Courangi (*fig. 42.*) is a small fruit common at Malacca; the shell is brittle, and encloses one seed, surrounded by a spongy melting substance of an agreeable acid flavour, like that of the tamarind.



The Baduc, or Jambosteen (*fig. 43.*), is, in flavour and internal structure, like the mangosteen; the fruit is white, with a slight tincture of pink colour, and grows in bunches like the fruit of the potato.



The most beautiful fruit is the Rambosteen, *Nephelium* (burdock) *lappaceum* (bur-like). (*fig. 44.*) It has an echinated



capsule of a bright scarlet colour, the pulp transparent and most delicious, surrounding one seed.

The four last kinds of fruits were seen in the bazaar, but no description of the plants which produced them could be obtained.

These notices are sent to the Gardener's Magazine, in the hope that the fruits may be one day imported and cultivated in our stoves.

J. M.

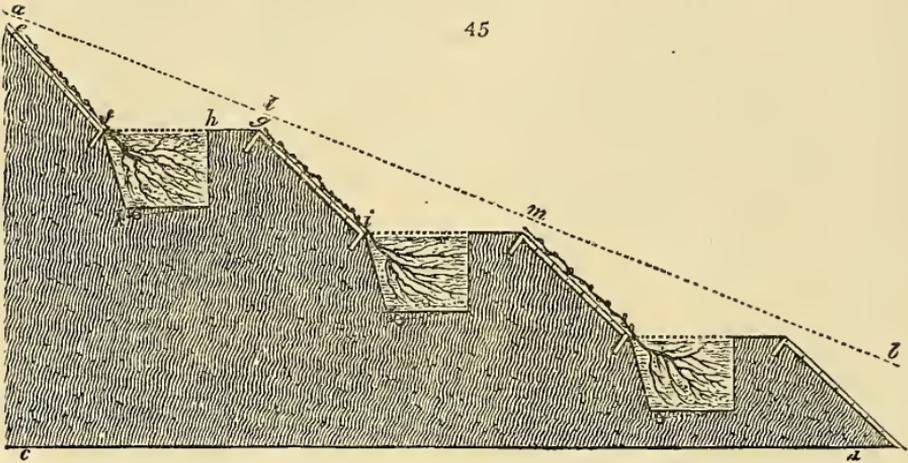
Chelsea, April, 1827.

ART. VIII. *A Description of a Method of cultivating the Vine, by which it is thought Grapes may be ripened in many Parts of England for the Purpose of making Wine.* By F. N. B.

IN the first place, it may be necessary to state that deficiency of heat is not the only, or perhaps the principal reason, why grapes are not usually brought to perfection in this country in the open air. The place generally selected for a vine is against a wall in a level garden, possessing a considerable depth of soil. The nature of the vine is to strike its roots deep and wide. The situation mentioned affords it an opportunity of doing so; consequently, even in the driest weather, the extremities of the roots are enabled to send up such a quantity of sap, that the plant continues, until very late in the autumn, to grow with the vigour of spring. The fruit, from this cause, perhaps in a greater degree than from the want of heat, instead of ripening, continues in a green or growing state. In France, although the soil in which the grape is cultivated is generally much shallower than in our gardens, and the climate both warmer and drier, still, in certain situations, and in some seasons, to counteract this superabundant supply of sap, the stem of each bunch of grapes is twisted about half round, which is well known to produce, to a considerable extent, the desired effect, and demonstrates the truth of what has been stated. It therefore appears that two things are requisite, in order to ripen grapes in this country: in the first place, increase of heat, and, in the second place, a decrease of sap during the latter part of summer and in the autumn. The following is the plan proposed as being likely to effect both these objects:—

Commence your operations upon a hill composed of chalk, or of any kind of stone which can be easily worked, having from six inches to a foot of tolerably good soil, and facing

the south. (*fig. 45.*) The inclination of the face of the hill must be as the line $a b$ is to the level line $c d$. Begin to take



off the earth from the top of the hill till you have worked downwards thirteen or fourteen feet; wheel it away, and lay it in a ridge at the foot of the hill; then remove the chalk or stone to any place where it will not be in the way, till you reduce the upper part of the hill to the angle formed by $e f g$. This will give you the inclined plane $e f$, six feet broad, on which the sun at noon will shine vertically about the third week in August, and a flat terrace, $f g$, of the same breadth. From f to h , which is four feet, dig a trench two and a half feet deep; the side of the trench below f to be rather inclined towards the bottom of the trench below h , to prevent the wall which will be mentioned presently from sliding down. From h to g is a footpath; from g to i is the second wall. If the bottom of the trench is composed of materials through which water will easily filter, it may be made perfectly level; if otherwise, make it a little sloping towards the back, and likewise to either end, or from the centre to both extremities, just as it may be found convenient, and place at the back a row of draining tiles, k , to convey the water through the boundary wall entirely out of the vineyard. The dotted line from the draining tiles shows the bottom of the trench, in case the substance of the hill retains water. At the angle close to f let in a row of bricks endwise; from this row of what masons would term "headers," face up the slope with bricks laid flat in a bed of mortar, till you get within two inches and a half of e ; the two inches and a half are to be occupied by a second row of "headers:" thus the whole will be kept firm and compact. The bricks which are laid flat, together with the mortar,

will require about three inches: this space will be gained by the masons while in the act of levelling the rough work of the labourers. The wall should be neatly pointed with good mortar; the lime may be made near the spot with the chalk dry from the hill. Having proceeded thus far, cast the turf from *l* to *m* into the trench *f h*, and then the earth which was under the turf upon it, till the trench is filled up to the level of the path *h g*. The first wall and terrace are now finished. Make similar inclined planes, trenches, and paths all down the face of the hill, constantly throwing the earth from that part of the hill you are going to work upon to the trench you have just dug out above, and the earth in the first place carried to the foot of the hill will be ready for the last trench. This is supposing the hill affords just earth enough, which, should it be about nine inches thick, will be the case. The whole should be surrounded with a wall, and the end of every second trench would be a good distance for a fruit tree, either pear, peach, plum, cherry, or apple. In this way, the east and west walls may be usefully employed. The boundary wall on the north side might be carried back about twenty feet beyond the top of the first sloping wall, which would give room for a good border for fruit trees, with a full south aspect. The bottom of the hill must likewise be protected by a wall, and about the centre of it would be a good place for a labourer's cottage. Watering would, of course, be occasionally necessary; therefore, if no brook can be led to the foot of the hill, a well must be dug, and a path left in the centre of the vineyard, from the bottom to the top of the hill, for the convenience of carrying up the water; or it might be thrown up by means of an engine, with a rose on the end of the pipe, to prevent the water from going with too much force.

On these inclined walls the sun being vertical about the 20th of August, the greatest portion of heat will be enjoyed by the vines at the time it is most necessary; for it must be recollected the grapes will be as forward by the third week in August, as they are on the common wall by the same time in September. They will be so, not merely from the greater effect of the solar rays, but from the confinement of the roots, and from the moderate supply of sap the plants will receive in consequence; for, in a damp season, they will not have more water than is useful, and, in a dry one, it may of course be regulated accordingly as it appears to be requisite.

As no foundation is wanted for the inclined walls, and as the bricks, except the first and last course, are to be laid flat, the

expense will consequently be small, compared with the number of square feet covered with vines.

Should a hill of a more rapid ascent be fixed on, it would be necessary to dig the trench deeper and narrower; by which means two feet for a path might still be gained. If the elevation were less than the one described, the only difference would be additional width in the paths. In any case, the inclination of the walls should be as above directed.

A plantation of Scotch pine and larch on the east, west, and north sides, at a due distance, would be useful as a protection from the winds, and ornamental as a finish to the vineyard.

As, in the first place, it was stated that deficiency of heat and a superabundance of sap were the causes of grapes seldom arriving at perfection in the open air in this country, and as by this method the heat will be very materially increased, and the sap duly regulated, so there can scarcely be a doubt but that the result will be (except in very unpropitious seasons) well ripened and good flavoured fruit.

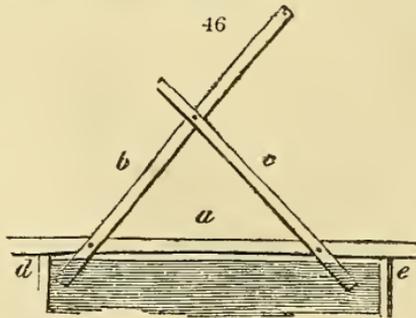
Grantham, December 6. 1826.

F. N. B.

We hope this scientific and interesting paper will induce some gentleman who has a chalk hill on his estate to attempt establishing a vineyard. We have no doubt of success, if the plan of our correspondent be followed. In some situations it might be worth while to form a vinery for growing table grapes on the above plan, covering each separate slope with a separate range of sashes, supported about 18 inches from the ground.

To show the young gardener how easily and cheaply experiments may be made, we subjoin F. N. B.'s mode of ascertaining a slope that shall be perpendicular to the sun's rays on any particular day of the year. He says,

"I cannot answer for the accuracy of the inclination for the walls, as the only mode I made use of to ascertain the sun's elevation was by means of three laths (*fig. 46. a b c*), nailed together as a triangle, and, in order to obtain a level, placed on a tub of water (*d e*); and when one stick (*b*), by pointing exactly to the sun at noon, cast no shadow, I took the one it crossed, which was at right angles with it (*c*), to be the inclina-



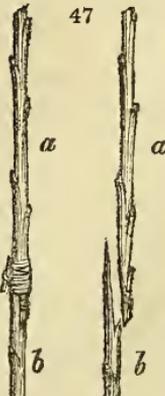
tion of the wall on which the sun would shine vertically on the 22d of August, the day on which I tried to ascertain the point. Of course, one of the nails on the stick resting on, or parallel to, the surface of the water was not fixed, till, by elevating the stick (*b*) so that no shadow was cast, I was enabled to ascertain its proper place." — *Cond.*

ART. IX. *On grafting the Peach, Nectarine, and Apricot on Stocks of their own kind.* By Mr. DANIEL CAMERON, late Gardener to Admiral Sir George Cockburn, at Highbeach, Essex.

By the mode, common in British nurseries, of budding the peach and apricot upon plum stocks, some time is lost in producing handsome bearing trees, and the fruit is of inferior flavour. Every gardener must have observed that the vigorous shoot made by the bud the first year, when cut down the second year to within six or eight inches of the stock, receives a severe check, and is very liable to disease. It frequently happens that the future tree is spoiled in appearance by the weakness or unequal vigour of the side shoots, and partial decay of these, and of that part of the main stem which is above the stock. But, even under the most favourable circumstances, this mode of raising peach trees never produces handsome plants till the third year, and they seldom bear fruit till the fourth or fifth year.

As a quicker and better mode of raising trees of this kind, I venture to recommend the following practice, which I adopted some years ago at Hampton Lodge, near Farnham, when gardener to Henry Long, Esq., and have subsequently adopted at the place I have just left, Highbeach in Essex.

Sow in autumn kernels of peaches, nectarines, or apricots, under the walls where they are to remain. They will make a vigorous shoot the following spring, and may either be budded in the August of the same year, or grafted the March of the year following. Grafting is the mode I prefer, and the scion (*fig. 47. a*) should have a quarter of an inch of two-years' old wood at its lower extremity. At least, I have found scions so taken off succeed better than those taken indifferently from any part of the young



wood. Cut the stock with a dovetail notch (*b*) for the scion to rest on, and tie it on in the usual manner. Remove the buds of the scion in back and front, leaving two on each side and a leader; when these have grown six or eight inches, pinch off their extremities with the finger and thumb, by which means each shoot will throw out two others, and thus produce in autumn a fan-shaped tree with ten branches. I have generally found them bear two or three fruit the second year from the graft, and a proportionably greater number the third year. The flavour of the fruit, I think, is superior to that from trees grafted on plum stocks; and I am happy to find that this opinion corresponds with that of French gardeners, as well as of some of your correspondents. (See *Gard. Mag.*, vol. ii. p. 167, 168, &c.)

Such of your readers as have an opportunity, may examine the trees that I have raised in the above mode, at the two places mentioned. I cannot help thinking this plan of raising trained trees of the peach, nectarine, and apricot deserving the attention of nurserymen; but, if they should neglect it, I have no hesitation in saying that there are very few private gentlemen who would not find their advantage in its adoption.

If budding be preferred to grafting, the shoot produced by the bud should be pinched after it has grown six or eight inches, and only five buds allowed to push; the five shoots produced by these buds should themselves be shortened to five or six inches, and disbudded as they push, so as to produce a fan of ten shoots, as in the case of the grafted tree. If the wood so produced is properly ripened, it will hardly fail to produce blossoms the following year. I confess, however, I have had very little experience in budding, though I have seen a budded peach bearing fruit the second year; but it is necessary to remark that the shoot was not cut down.

I am, Sir, &c.

DANIEL CAMERON.

*Henderson's Nursery, Pine-apple Place,
Edgeware Road, Aug. 15. 1827.*

Mr. Cameron's paper seems to us to open a new field for improvement in the culture of the peach and apricot. We would suggest to nurserymen to raise stocks in plunged pots of eight or nine inches in diameter; to graft these stocks at one year old, as practised by Mr. Cameron; and to sell the trees, still in pots, after being one or two years trained. By the plants having been grown in pots, they would be sent out with the whole of their roots; and, when transplanted into the

free ground, they would grow vigorously, and, perhaps, even bear fruit the first year. In wet and late seasons, the young shoots of plants, the roots of which were confined to pots, would be better ripened even in the open air; but, if it were an object of consequence to have them thoroughly ripened, and fruit buds formed, the pots might be removed about the last week in August, and placed under a glass roof, or projecting coping. We hope some nurseryman will enter into the spirit of Mr. Cameron's improvement, because we are convinced it is founded on rational principles; but, if none of them will take this trouble, we trust some gentleman's gardener will give the plan a fair trial. In the mean time, reference may be made to Mr. Cameron, or to the gardens where he practised.

The next greatest improvement to that of Mr. Cameron, would be to treat the shoots produced by buds of peach trees inserted in plum stocks, in the same way as Mr. Cameron proposes to treat the buds of peaches on peaches. By adopting this practice, very handsome trained trees might be produced in one year. They might be removed without being cut down, and would probably bear fruit the third year. Their not being in pots would be no objection, as the roots of the plum are much better adapted for removal than those of the peach, almond, or apricot. Time and handsome trees would be gained by this mode; but to these Mr. Cameron's practice adds better flavoured fruit. — *Cond.*

ART. X. *On Salt and other Matters.* By AGRONOME.

Dear Sir,

I DID not think of being so soon called upon to stoop and gather up the salt which I had dropt; much less did I think of engaging in a paper war with any of your correspondents, all of whom I am particularly glad to see, not forgetting Mr. C. W. Johnson, who has been so kind as to bestow upon me some beautiful compliments, including the "lie circumstantial." It would hardly be fair in me to retaliate, without first giving him my card; and as that is not quite convenient at present, I shall content myself with stating a few facts, to show that what I have said is from conviction and experience, and that I am as free from prejudice as even Mr. Johnson can wish me; neither do I think self-sufficiency is one of my phrases nor one of my failings. That I was too sanguine as a gardener in my young days, or may be too sanguine as an author

in my old days, is perhaps a constitutional complaint which I may never get rid of. It is very strange if I "never tried an experiment with salt." I had only related two anecdotes respecting it, and the distance in time was above thirty years; and that I could give one for every intermediate year, would surely be no very difficult task. I have lived very much near the sea beach as well as near salt-works; I have watched the effects of the sea breeze and salt spray, and always found it rather prejudicial to vegetation than otherwise! The pamphleteers will perhaps say that this was owing "to the saline particles not being distributed scientifically; they were either sown too thick or too thin, or not at the right season; the salt should be measured by the imperial bushel, and weighed by the patent beam and scales, by men of rank and science." I acknowledge that I possess neither rank nor science, but I hope I possess a common share of common sense, and, as Providence has ordered it, I possess rather more than a common share of experience; and I refer to the most sensible part of your readers, if a given distance from the sea would not determine the case with as great precision as weights and measures; but such point I could never find. We have all seen a heap of rank manure lying in a field; we have seen it destroy vegetation for several inches all round; then all at once vegetation sprung up most luxuriantly, then gradually diminished, till the effects were lost in the natural verdure of the field. But, when a heap of salt lies in a field, it, like the dung, destroys all vegetation round it; but where is the point of luxuriousness? where is so much as a fairy ring? no where to be seen: the pestilential effects of it diminish as gradually as those of the poison tree which we read of in the Island of Java; or, if certain vegetables seem to thrive, they are of a particular kind, more resembling marine than terrestrial natives, and are actually feeding on the murdered carcasses of their more delicate neighbours! Facts like these, Sir, might teach a child that salt was not a manure, although extremely good and useful for many things. It destroys weeds and worms; dead weeds and dead worms are an excellent manure. But, if destroying a perverse and rebellious generation of vegetables, to make room for a better, be manuring, then a naked summer fallow is manuring: or, if cutting off nine plants to make room for a tenth be a manure, then a turnip hoe is a manure; for, though only a piece of steel on the end of a stick, it has often procured me forty or fifty tons of turnips per acre instead of four or five! By way of explanation, I sow nearly four pounds of turnip seed per acre in drills thirty inches

asunder, so that, without the hoe, they would be little better than so many rows of cress or mustard. "But," says the man of science, "salt enters into the constitution of plants, and therefore must be a manure." I grant that it does enter into the constitution of certain plants, and I have witnessed some extraordinary good effects from its application; and I could fill several sheets on that side of the question, but am engaged at present on the opposite side. It hardens the straw, that would otherwise be flaggy; it makes the grain plump, that would otherwise be shrivelled; in short, its uses are extraordinary, if applied with judgment: but to call it a manure is a kind of false philosophy which I should like to extirpate from the rising generation, as it would only lead to futile experiments, foolish arguments, and false conclusions. I make use of great quantities of salt every year, and did so before the duty was taken off, both rock salt and salt and ashes. I was then obliged to swear what I was going to do with it, and what I had done with it, and also give an account of the experiments I had tried with it, some of which have helped to make up the pamphlets I have read; but now I have no more trouble than if carting from a dunghill. I was at a salt-works last Tuesday, and, I suppose, the greatest salt-works in Europe; I bought a three-horse cart-full for ten shillings; they loaded it into the bargain, only one of the men begged sixpence to drink, as he said he had made me a *good load*, and trod it well, so as not to shake off. I thought he spoke true, and gave him the sixpence. I weighed it and measured it after getting it home; it was $37\frac{1}{2}$ cwt., and measured 62 imperial bushels! Now, this was not salt and ashes, but fair, good salt, only not quite fit for a silver salt-cellar; so, if any one wants salt manure, as they call it, I think I can tell them where the cheapest shop is. I asked a great many questions of the agent, and also of the neighbouring farmers, the substance of which would occupy several letters; but all that I could write, or indeed all that others have written or could write, may be comprehended in the following parable:—A certain man had two sons; they were twins, very much alike in every thing, and in nothing more than in their delicate complexion, and weakly and sickly appearance: they were troubled with worms, a weak digestion, &c. &c. One of them was put under a course of physic, which nearly killed him; but he however got well, and grew quite fat and jolly: the other lingered on for some time, and died at last, although he had always as much roast beef and plumpudding as he could set face to! The old man made the following remark, which passed cur-

rent through the country; that physic fattened the one, and roast beef starved the other: and the puffing apothecary who sold the physic began to collect evidences of the marvellous cures which his medicines had performed, and employed certain scribblers to write in praise of it, some of whom overshot their mark, and published treatises to prove the extraordinary feeding and fattening powers of Glauber's salts!

I am, dear Sir, &c.

June, 1827.

AGRONOME.

ART. XI. *On the Use of Salt in the Culture of the Hyacinth.*
By Mr. THOMAS HOGG, Florist, Paddington.

Sir,

IN addition to the judicious remarks of Mr. Campbell on the culture of the hyacinth, allow me to state the result of an experiment made last autumn upon some bulbs imported the year before from Holland; consequently this was the second year of their flowering in England. About the end of November the smaller bulbs were planted in 48-sized pots, and the larger in upright thirty-twos, in compost of one third loam, one third rotten cow-dung, and the remaining third of river sand, steeped in a strong brine of salt for ten days previous. The pots were then plunged in the ground, and covered with five or six inches of old tan, where they remained till the middle of March, when they were removed into the green-house. They flowered in a manner seldom surpassed, either for brilliancy of colour, largeness of flower, or strength of foliage. What! salt again, *usque ad nauseam*. *Rideat Agronome!* whom I nevertheless regard as one of the most entertaining of your correspondents. He evidently has been dry-salted a little himself, for one may discover at times, in his diatribes, particles of "Attic salt," seasoned also *exig. par. piperis*. With respect to salt as a manure, I may be permitted to observe, as not altogether out of place, that I am by no means an advocate for its general application. Great care and discrimination are requisite, and its use ought to be first regulated by a course of experiments, and by reference also to the situation of plants while growing in their wild state. I have found it beneficial, and I have also, in one or two instances, found it the contrary. But, to return to the previous subject, the greatest possible injury, in my opinion, that can be done to all flowering bulbs is to cut off the leaves close to

the ground, as is too generally done, as soon as they have done flowering. By suffering them to die down gradually, there will be a chance of having strong healthy bulbs for the ensuing year. In order to preserve the blossoms of hyacinths which are planted in beds from being injured by frost, it will be requisite to hoop and cover them with mats during the night; and they will likewise preserve their freshness and beauty longer if they are shaded from the sun.

I am, Sir, &c.

Paddington, August 22.

THOMAS HOGG.

ART. XII. *Result of certain Experiments in regard to the Use of Salt in Agriculture.* By AGRICOLA of Lincolnshire.

Sir,

OBSERVING in your valuable Magazine that you wished for an account of any experiments with salt as a manure, having made several, I will send you the result of them, for publication or not, as you please, or as it may be convenient to you. In the first place, I always salt my hay, or artificial grasses, whether got well or ill, with about a stone to a waggon-load, as I believe it from experience to be advantageous to the health of the animals fed upon it; and, whenever apparently spoiled by rain, I have found that by salting it the cattle would eat it as readily as good hay, and appear to do as well upon it. I have also given it simply, mixed with the food of both horses and cattle, and it has always appeared to be of great service to them, and so thinks my farming man, who is of the old school, and, though not obstinate, is no great admirer of new theories. 2dly, I tried it on half an acre of heath land for turnips, and found no advantage whatever from it. The barley the following year was as good as that on the land by the side of it, which was also sown with turnips and manured with ten loads of the best manure an acre, but not better. On the heath land the turnips were a fair crop; on the salted land they were good for nothing. I also tried it upon half an acre of sand (in both instances at the rate of fourteen bushels an acre), and found it excellent, as the turnips and the barley after them were quite as good as on the adjoining land manured with ten loads an acre of good manure. In an acre of sand land for barley (fourteen bushels), after turnips fed off, the barley was taller, finer, and considerably more forward than on the adjoining land. On half an acre of wheat (seven bushels on the half acre) on heath

land, the wheat was rather forwarder, but not better than the adjoining. The salt in both cases was spread immediately over the land by hand, after the grain was sown and harrowed in.

On grass land by itself, at the rate of seven and of fourteen bushels an acre, without any advantage whatever, but mixed with earth, at the rate of from six to eight bushels to about six or eight loads of earth to the acre, and also with earth and manure at about the same rate an acre, it has been of *very great advantage*; so much so, that I think most probably I shall never manure grass land without mixing some salt in the compost: I mean one bushel of salt to each load of compost, and about seven loads of compost to the acre. The salt to be turned over with the compost, and lie three or four months before it is spread. I have also tried it in the garden, but cannot speak decidedly as to any advantage derived from it.

Lincolnshire, June, 1827.

ART. XIII. *On the Conduct of Gardeners and their Employers.* By Mr. JOHN CAMERON, Gardener, Grove Lane, Camberwell.

Sir,

IN the first and second volumes of your Magazine, I observe various remarks upon the low wages and bad treatment which gardeners often experience; and, although I in some measure agree in opinion with the writers, yet I must attribute the cause principally to the young men themselves, especially to young gardeners from the country, who, whenever trifling difficulties come in their way, throw up their situations with the view of bettering themselves through the medium of advertisements in the public prints, or by soliciting favours from nurserymen.

Gardeners from the country should engage for twelve months; by the end of that time many of the difficulties, so formidable when they first come to London, would be surmounted, which would be a great inducement for giving their place a farther trial, and, at the expiry of four or five years, they would be able to look around them with pleasure at the fruits of their industry, perseverance, and talent; and, having shown specimens of all these to their employers, whose confidence long ere this time they would have obtained, they might justly expect an advance of wages for their exertions: but, instead of this, the difficulties appear to them so great, that they

are continually changing their situations, both to the disadvantage of themselves and their employers.

On the other hand, the advantages of not changing to the owners of gardens are so great, that a few remarks will convince them how ruinous a change is to their garden, sometimes to the total destruction of it. That changes are sometimes necessary I allow, but they might in many cases be dispensed with. A gardener possessed of general knowledge, honesty, sobriety, and perseverance ought not to be changed, as it is a well known fact, that the proprietor cannot find out the merits of his gardener in less than four or five years; and experience has proved that it is better to keep a bad gardener than be often changing. By changing, as some do every three or four months, they totally destroy their gardens; for how can so many gardeners, having different methods and intentions, and entering at every stage of the cultivation, avoid entirely to do so? Every new gardener must make a change, seeing that his predecessor was discharged for not making something or another grow or thrive to which the soil was unfavourable; and hence these repeated innovations, carried on by a succession of gardeners, shortly present to the owner the total destruction of his garden, and which destruction, on taking a retrospect, he can only attribute to his own imprudence in so often changing his gardener.

JOHN CAMERON.

Grove Lane, Camberwell, April, 1827.

ART. XIV. *On the Culture of Hyperanthera Moringa, or Horseradish Tree, in the West Indies.* By W. HAMILTON, Esq. M.D., Fareham, near Plymouth.

Sir,

THE object of your valuable and widely circulating Magazine being general utility, without restriction to any particular part of the British dominions, and as I think much good might be effected by directing, through the medium of its pages, the attention of such of your readers as may be connected directly or indirectly with our colonies in the West Indies, as well as of our merchants trading to Colombia, to such productions of the tropics as, though hitherto neglected or overlooked, promise to afford a rich harvest for speculative enterprise, I propose, with your consent, commencing a series of letters for occasional insertion, on the subject of the commercial, economical, and medical properties of some of the more valuable;

thus supplying for the West Indians that information which my friend, Mr. Collyns, of Kenton, has, I rejoice to see, commenced furnishing to the inhabitants of this country.

The first I shall commence with is the *Hyperanthera* (*hyper*, above, *anthera*, anther: five barren stamens are surmounted by five fertile ones) *Moringa*, a diandrous shrub, not indeed indigenous, but now common in almost every part of the West Indies, and known by the several names of Horseradish Tree, Moringa, and Oil of Ben Tree. It is a shrub of rapid growth and elegant appearance, and has the valuable recommendation of coming into bearing within a few months from the time its seed is sown. Its timber, when it has attained a considerable size and age, is ponderous, of a dark colour, close grain, and subacid bitterish taste, yielding a blue infusion with boiling water, and was formerly known in the shops under the name of *Lignum nephriticum*, from its supposed efficacy in curing disorders of the kidneys; it would probably, however, prove much more valuable to our cabinet-makers for ornamental furniture. The gum, which exudes from the wounded bark, appeared to me to possess all the properties of gum tragacanth; at all events, it invites trial. The bark of the root possesses all the sensible properties of horseradish, and is substituted for it at table, where the difference cannot be detected; its medical properties are also precisely the same. The long pods, in their young and filiform state, are frequently served up to table as a substitute for asparagus, and are very good. But its most valuable product is the oil of its seeds, which it yields more copiously than either the cocoa nut of the tropics, or the olive tree of Europe, while its property of keeping without becoming rancid, for an extreme length of time, renders it invaluable for a multitude of purposes; indeed the seeds abound so in oil as to yield it by simple pressure of the nail. From the experiments of the celebrated Geoffroy, 100 lbs. of the decorticated seeds yield about 24 lbs. or 8.4 flascos of a limpid, scentless, and tasteless oil, being 0.4 of a flasco above Humboldt's estimate of the annual produce of a cocoa nut tree in full bearing, and 1.4 flasco above the produce of an olive tree of thirty years old in Provence. I am not prepared to say how many moringa trees in full bearing would be necessary to yield 100 lbs. of decorticated seeds, and hence the parallel with the cocoa nut tree is partially defective; and I could wish some of your correspondents connected with the West Indies to supply this hiatus, which might be done without difficulty. However, I should conceive, from what I recollect of the tree, which is in continual

bearing, that the *annual* produce of two moringa trees would fully equal this amount, especially were attention but paid to its culture; for, in every case in which I had an opportunity of seeing it, this was wholly neglected. Neither can I speak as to its longevity, though, from the facility with which it grows, and its coming into bearing so soon, this point is not so material. The cocoa nut tree does not come into bearing till its seventh or tenth year, and rarely continues in full bearing after its fortieth year, while, within a very few months after sowing the seed, the moringa begins to yield its harvest, and from that time till the period of its decay, which is not for many years, it is never to be found without flowers and fruit in all stages. Upon the whole, I have little hesitation in saying that, upon a fair trial, the moringa tree will be found among the most productive articles of West Indian agriculture next to the sugar cane, and far less uncertain in its returns. The oil, which is known in commerce by the name of Ben, or Behen, is, I believe, imported into this country at a considerable expense from the Levant for the exclusive use of the perfumers, while our own islands could furnish it in sufficient abundance to supply even the present deficiency of spermaceti oil for burning, to which use it is applied in France, where the usual charge by retail is fourteen sols per lb.

The spermaceti whale having of late years, I understand, become scarce in the Northern Seas, it becomes an object of commercial importance to find a substitute which will prevent an unreasonable advance in the price of so necessary an article, and at the same time serve to give employment to our shipping, both of which ends I look upon the moringa tree as fully capable of answering.

Should this commencement of my plan prove acceptable, I shall continue from time to time to trouble you with further suggestions on the uses to which other familiar, but neglected, productions of the tropics are applicable, and remain in the meantime,

Sir, &c.

Plymouth, March 10. 1827.

WILLIAM HAMILTON.

ART. XV. *On Paragrêles, or Hail-Protectors, and their Employment in Britain.* By JOHN MURRAY, Esq. F.A.S. L.S. H.S. G.S. &c.

Sir,

As you have been good enough to advert to my remarks on the paragrêle, introduced *en passant*, in my *Observations on*

the *Cultivation of the Silk-worm, &c.*, allow me to add that I think their utility indisputable, and their principles founded on the rock of inductive truth.

It is freely conceded, by all conversant with the science of electricity, that meteorological phenomena are entirely dependent on atmospheric electricity, and that the fluctuating changes of the clouds from *cirrus* to *nimbus* (See *Encyc. of Gard.*, § 1236.), through the intermediate gradations of *cumulus* and *stratus*, and their vicissitudes, are determined by electric power.

The conducting rod disarms the thunder cloud of its destructive artillery, and the lightning's flash, guided by a slender wire, obeys the summons that consigns it to the dust; and, if such be the security afforded by a solitary insulated rod, generally imperfect, and badly constructed, much more may surely be expected from conducting wires, multiplied *ad infinitum*, and covering a vast tract of country. M. Chavannes, of the University of Lausanne, deserves his country's thanks for the introduction of paragrêles. In the last conversation we had together, he exceedingly lamented the inveterate opposition they had met with; I rejoined, that this was a sure test of their value, because it appeared clearly to me that they were founded on scientific principles, and must ultimately triumph over every species of prejudice and error. This, I am happy to say, is amply verified, and that triumph attested in the *Rapport sur l'Utilité des Paragrêles*, drawn up by the Linnean Society of Paris, in which their universal adoption is earnestly recommended, and the special protection of the French government solicited in their favour. The *Nouvelliste Vaudois* of August 16th, 1825, very wittily observes, "Les Paragrêles n'ont qu'à bien tenir. On les attaque par tout à Paris, à Berne, à Zurich. La Grêle seule les épargné." And, in confirmation, I may merely state here that, when at Neufchâtel, I was informed that, in a village only five miles distant, paragrêles, from some superstitious motives, had not been erected, and the vineyards were *totally destroyed by hail*, whereas, in those vineyards that were protected, in their immediate vicinity, the hail storm had been softened down into snow, or melted into rain. There is *not one example* of a vineyard supplied with paragrêles being injured in any way by hail. Hailstones, or rather fragments of ice, do not fall near a good conductor. Paragrêles are generally used in the Canton de Vaud, particularly about Lausanne, and on the Italian side, as far as Vevey; but I think the eminences about Vevey are improperly neglected. These ought certainly to be espe-

cially attended to, because, being nearer the source of the storm cloud, they might gradually disarm it on its approach.

It may be well now to give a specimen of the *logic* employed by the antagonists to the paragrêles:—“*Quel effet peut-on attendre de pointes de laiton d’une ligne épaisseur à l’extrémité de perches de 35 à 40 pieds, tandis que la barre de fer la plus forte et la mieux armée n’agit que dans un rayon de 50 pieds environ? Les forêts arrêtent les nuages et soutient le fluide électrique avec plus force, et en plus grande quantité, que ne pourraient le faire des milliers de pointes de laiton. Paragrêles, au contraire, doivent empêcher le fluide de s’accumuler dans les nuages!*” In reply to the preceding mystical sophisms, it may be sufficient to say: 1. That an imperfect conductor, such as a bar of rusty iron, may be *thick enough*, and infinitely inferior to a slender wire, formed of a perfect conducting material, such as *brass* or *copper*. I have repeatedly passed an electric discharge through my own person, by means of a fine cambric needle, that would *have killed a sheep*, and without the slightest electric effect. Besides all this, common iron conductors, as *generally* constructed, are worse than useless; yet it is granted by the writer that such a conductor is sufficient in a radius of fifty feet: but the paragrêles are planted much nearer together, and are each armed with superior conductors. 2. In the woods of America, the thunders are arrested by the spiny apices of the pines, and there discharge their explosive fires, while in the clear and cultivated lands it thunders but rarely, and lightnings are seldom destructive. In this case the thunders are arrested by a series of infinitely multiplied conductors of the most *imperfect* kind, and the “gnarled and unwedgeable oak” is often riven. Perfect conductors, numerous and extended, *change* the electric character of the cloud even on its approach, and while yet distant, and thus modify the coming storm; and these, too, are as opposed in their relations as the ball and point in the discharge of accumulated artificial electricity. I might say much more, but it is enough. Ignorance will always prate as long as she can, and, having too frequently the majority on her side, the power of numbers leads captive for a while; at length the blaze of truth becomes too brilliant for Ignorance to withstand and combat, while Science stamps her statements with the seal of powerful and resistless authority.

The practical tendency of this communication is to recommend the employment of paragrêles in Great Britain. I mean to make the experiment myself. Hail storms often do tremendous mischief even in these happier climes. In 1824, during my

stay in Lincolnshire, the damage on a few farms by hail was most extensive, and one farmer lost to the amount of 300*l.* Withering and blighting blasts, the torrents of rain that fall so partially in spring and autumn, and oftentimes with such "fell swoop," all these, and other meteorological phenomena, may be modified by conducting rods in the form of paragrêles, and the result be of incalculable benefit. Whatever changes the electric character and state of the atmosphere, that grand depository of the storm cloud, and all its icy and tempestuous contents, must operate in the amelioration and modification of climate, and paragrêles may reasonably be expected to do this, and more than we may well even guess at now. In a future communication I mean to extend and fortify my remarks, and give you a sketch of the paragrêle.

I am, Sir, &c.

J. MURRAY.

February 15. 1827.

ART. XVI. *Note on Mr. Campbell's Mode of growing the Hyacinth.* By RUSTICUS IN URBE.

Sir,

THE great merit of Mr. Campbell's mode of treating hyacinths (*Gard. Mag.*, vol. ii. p. 411.) depends entirely on the depth, four inches, at which he plants them. An acquaintance raises them in the highest possible perfection, and has done so for many years, by observing no other rule than deep planting. His soil is a sandy loam. The depth at which they are planted is four or five, and even six or seven, inches. All the tribe naturally root deep, witness the harebell in our hedges; so do the polyanthus, narcissus, &c. This is the point that should be attended to, and probably the orchis family may require no other care. When a root is dug up in the field, the depth should be observed, and it should be replanted exactly the same. A little observation on this point may be of much use.

July, 1827.

RUSTICUS IN URBE.

ART. XVII. *Further Particulars of an Experiment made with a View of bettering the Condition of the Labouring Classes.* By JOHN MOGGRIDGE, Esq.

Sir,

TWELVE months having nearly elapsed since I sent you some particulars of an experiment made with the view of

bettering the condition of the labouring classes (*Gard. Mag.*, vol. ii. p. 19.), it will not, I am confident, be unacceptable to you, or to those of your readers who may think the object contemplated of no ordinary importance, to know the result of the past year's experience, in addition to that of six preceding. But I must first be allowed to express my regret that, notwithstanding the commendation bestowed by you, with (I conceive) so much judgment and justice, on pursuits of this nature, and your invitation of similar communications, so few have been made in the course of a whole year. Grateful as I should personally feel for any hint that would enable me to improve in any one particular of my plan, and much as numerous individuals, and, I will venture to add, society at large, might be benefited thereby, I cannot but hope for and earnestly request, through the medium of your most interesting work, the kind assistance of such of your readers as have it in their power to contribute useful information. That this has not been already more plentifully bestowed, I am gratified, and, as an Englishman, proud, to say, is not owing to want of materials, out of which highly interesting facts might be supplied, though I will only now mention the kindred experiments of the Bishop of Bath and Wells, Mr. Estcourt of Wiltshire, and Mr. J. Cropper of Liverpool, correct accounts of which (and from no persons so appropriately as from those benevolent individuals themselves) I trust will, ere long, grace the pages of your work.

But, to return from what I wish to know, duly and fully authenticated, to that which has already become the object of actual and personal knowledge, and, whilst I cannot but lament that, owing to an unfortunate misunderstanding between the masters of collieries and their workmen in this immediate neighbourhood, the fair prospect of increase both of houses and inhabitants has been grievously blasted, I rejoice in being able to state that no one circumstance has occurred to *undo* what has been *done*; to excite a doubt as to the value of the experiment, or as to its present or future and progressive usefulness. On the whole, there has been an increase in each of the forementioned particulars; but, that it has not in either respect equalled my expectations, your readers will not be surprised when I state that there is reason to believe that, had all the labourers employed in and about the works in this immediate neighbourhood consented to the reasonable reduction in wages imperiously required by the circumstances of the trade (as many of them would cheerfully have done), in the course of seven weeks' stoppage

some 15,000*l.* more would have been disbursed in wages than was actually issued. The privations and even positive sufferings endured in consequence have not, however, been productive of unmixed evil: for the value and importance of well cultivated gardens to the comforts and necessities of the poor, have been rendered more manifest in the course of these calamitous seven weeks, than perhaps in the whole preceding six years; and the unquestionable fact, that it is *chiefly* poverty that in this country engenders misery and crime (a fact worthy of all the attention political economists and statesmen will deign to bestow upon it), was never rendered more practically apparent. It was also highly consolatory to see many of the villagers who were not permitted by the dictation of others of their fellow-workmen, or the terror excited by their threats, to continue at their regular work, readily and steadily availing themselves of the resource of their gardens; so that much greater progress has been made in rendering *them* generally productive, and in most materially increasing their extent, than could have taken place under, in other respects, more favourable circumstances. Independently of casual but frequently repeated observation, upon occasion of making a regular survey of the gardens in the village previously to the awarding the prizes for the present year, it was both surprising and delightful to see the extent, variety, and general cleanliness of the culture, as well as the excellence of the crops, many of them justifying the observation, in which the proprietors expressed concurrence, that the produce of such gardens, so managed and judiciously applied, might be made to contribute a third part to the maintenance of the family in wholesome food. Thus, on a perception of the desirableness of a garden to the cottager, which, as I observed in my former communication, I had so much difficulty to awaken in the minds even of the industrious, not only has a taste for its conveniences and comforts been successfully ingrafted, but habits been formed which cannot fail to be strengthened and confirmed by enjoyment. Were it not for occupying too much of your valuable room, and for the fear of tiring your readers, I could furnish details on this part of my subject that could not fail to afford satisfaction to every friend to the improvement of the situation and morals of the labouring classes. I shall therefore confine myself to a single instance, for the gratification of those who will not read,

“ with a disdainful smile,
The short and simple annals of the poor;”

remarking only that this is by no means a solitary instance, though, as must be expected, few can be so complete, that there must be shades of difference between each, and that it shall be merely a concise narrative of facts. Some time in the course of the second year of my experiment, riding on horse-back by a barn situated on a farm, the whole of the land belonging to which I had laid down to pasture, and which was on that account unused, my attention was excited by the sound of voices proceeding from within it. Upon alighting, and entering the barn, I saw a young man and woman, the latter sitting upon a coverlid or rug covering some straw; whilst the former was standing by, earnestly conversing upon the not very promising aspect of their worldly affairs. I quickly learned that they were a newly married couple, that they were strangers and destitute; and that my bailiff had granted them permission to shelter for a few nights in the deserted barn. There appeared to me an evident disposition in both to wrestle with the world for the chance of better times; and the continued occupancy of the barn, with ready consent to the husband's running up a rude chimney in one corner, which he said he could himself perform with materials at hand, were granted. The man became a labourer on my farm; and, pleased with his conduct, after three or four months' tenancy of the barn, winter advancing, and a small house becoming vacant, he and his wife were transferred to it, and he became my carter. After a while I spoke to them of "a house of their own," and promised them assistance. The carter shortly asked leave to convert himself into a collier, and he succeeded in becoming a good one. In the beginning of the year 1824 he reminded me of my promise to let him have land on a building lease, obtained permission to erect a very humble cottage in the first instance, rather than to "be beholden to any one for money," and became possessor of thirty-six perches of ground, which was cleared for him. Perfectly satisfied with his proceedings, I told him to lay out the ground-rent when due, in improving his garden; and on the 22d of September, 1826, he paid me one year's rent, saying he could spare it. On the 2d of February last he begged to be allowed to extend his garden, and had twenty-eight perches added to it. On the 6th of this month, he brought his rent for the first taking in full, up to the 2d of August last, and petitioned for another addition of half an acre. Apprehensive that the man was over-rating his own powers, I hesitated, and told him my fears, which he assured me were groundless. I minutely inspected his former undertakings, and was convinced, in consequence, that (in his own words

the addition would do him good; and he has entered upon his third taking. The produce of this additional land is meant to supply the neighbouring markets with. The woman (who has two children) sells what of it there is to spare, and does a great deal of the easy work in the garden, the rest having been hitherto performed by the husband, without neglecting his regular employ. I did not in my former communication describe the nature of the leases which have proved such eminent encouragement to industry, because, having no good precedent, mine were rather speculative; the object being to effect what I had in view in the best practicable way, they have varied, and, at the period of my last letter, I had not been able to ascertain the effects of each. The first leases were for three lives; some time after, I added the right of nominating an additional life on the decease of the first; and, subsequently, believing that it would enable those who were unable to find at once the whole of the money they wanted, to borrow on the security of the lease without difficulty, I agreed to a clause for insuring ninety-nine years' possession in the whole, that is, in all cases where the four lives should not extend together to that term, and, completely to establish an equality of title and property, allowed those who had taken original leases to have them put upon the same footing. These terms are universal in the village of Blackwood, containing now about one thousand inhabitants. In the formation of a second village at Ynisdd (Black Island), four miles distant from the first, the improved has been the term of lease granted without exception; but the ground-rent is lower, on account of the situation at present not being equally advantageous. At Trelyn (Town by the Pool; a pool in the river Romney, formerly supposed to be unfathomable) the grant is of freehold leases, on lives renewable for ever, on payment of 5s. heriot. These I think preferable to any other; and, that this opinion is general amongst those who are likely to partake of their benefit, from various circumstances, but more particularly from the unexampled avidity with which these leases are taken (exceeding, by far, any thing experienced at any time in either the Blackwood or Ynisdd villages), is manifest. I cannot conclude without mentioning that great and satisfactory improvements are making in the plan and management of our village schools, and that a most promising disposition to insure to their children the advantages of education has been awakened generally in the minds of the parents, so that I hope ere long we shall be able to adopt and maintain the system of mutual instruction complete in all its branches. In

the Blackwood schools there are now daily instructed one hundred and forty-five scholars, with a prospect of great and speedy increase of numbers, as (much to the credit of both parties) the coal-masters of the neighbourhood and their workmen have agreed upon a plan for appropriating a small poundage out of the earnings of the latter, by which ample remuneration will be insured to the teachers. Reading, writing, and the first rules of arithmetic are taught in these schools, to which is to be added a class for learning mensuration and surveying, as applicable particularly to colliery-work; and the girls are to be taught to work with the needle, by the wives of the school-masters.

I am, Sir, yours, truly,

JOHN H. MOGGRIDGE.

Woodfield, Monmouthshire, Sept. 7. 1827.

ART. XVIII. *On the Construction and Use of Straw Mats for covering Hot-houses, and as a Substitute for Russian Mats in covering Frames and Pits.* By Mr. WILLIAM JOHNSTON SHENNAN, Gardener at Gunnersbury House, Middlesex.

MATS of straw and of reeds, it is understood, have long been in use in Holland and France for covering the glass roofs of hot-houses, pits, and frames. I have also seen them used for the same purpose, though but to a limited extent, in Scotland, and by a few gardeners in different parts of England. I believe they have been for a long time more or less applied in this way, and as sheltering screens. My attention some years ago was particularly directed to them, from observing the important purposes which they served in the garden of General Dumourier in this neighbourhood, under the direction of a French gardener; and my object, in this communication to the Gardener's Magazine, is to direct the attention of my brethren to a covering which I consider superior to all others for pits and frames, and by which I have proved to my own and my employer's satisfaction that a great saving of fuel may be made, and a superior degree of safety from accidents attained.

The construction of straw mats is perhaps more easily performed than described. The materials of which they are composed are drawn rye straw or reeds fit for thatching, stout packing cord, and laths or slips of wood about an inch and a half broad and three fourths of an inch thick, and, in

the case of mats for hot-houses, iron or wire rings. The only instrument necessary for manufacturing them is a common garden knife.

In width each mat is made equal to that of the breadth of the sash to be covered; in length, equal to the length of the sash in the case of pits or frames, and to the joint lengths of the upright and sloping sashes of a hot-house roof. Having cut two laths to the required width of the mat, lay them down on the ground at the required length; stretch cords from one to the other at twelve or fourteen inches' distance, or say three to a mat of ordinary width; then take three cords, or one for each line, and having begun by fastening the ends of these cords to the laths at one end of each line, take a handful of the straw or reeds, lay it in a small parcel, of uniform thickness, across the lines, and make it fast to them by passing each of these cords round it, so as to tie it on to the long lines, and to tie each parcel to that adjoining. This will give a rope, or small bundle of reeds or straw, of one and a half or two inches in diameter, as may be thought a sufficient thickness, across the long lines, and close to the lath, not unlike the straw layers of a bee-hive, but much more loose; and, by repeating the operation, the whole length between the laths will soon be covered with similar layers, and the mat completed. Or the mats may be formed with tarred rope yarn, such as thatchers use, without the use of cords, by simply fastening the ends of the requisite number of long lines to the cross laths; and then each line being rolled up so as to form a little ball, the parcels of straw are fastened to it by enclosing each handful, in successive nooses or ties, with the line. If the straw is weak and the mat thin, cross laths every five or six feet will greatly strengthen it. In this way the mats used in Henderson's nursery, Edgeware Road, are formed.

When the mats are to be used for pits or frames, nothing more is necessary than to cut off the ends of each roll to a line, so as the edges of the mat may be perfectly straight, and the mat every where of exactly the same width as the laths; but, when the mats are to be drawn up to cover a hot-house roof, it is necessary to have a ring, which may be of twisted wire, placed exactly in the centre of each lath. To one of these rings a cord is attached, for the purpose of being passed over a pulley to be fixed on the coping board, or on the centre of the end of each sash at the top of the roof. This cord must be at least twice the length of the mat, in order that, when the mat is drawn down and rolled up, the end of the cord may be within reach of the operator on the ground at the front of the

house. The other ring is merely for the purpose of securing the lower end of the mat to the front sill, or otherwise fastening it when drawn over the roof. When the mats are removed from the roof, and rolled up during the day, the cord is loosened from the ring, and lies on the roof, ready to be refastened to it, to draw the mats up next evening.

In using these mats on hot-houses, each mat is drawn up from the front of the glass to the top of the roof by the cord mentioned, and the end of that cord is made fast to a ring in the front sill; to which ring also the other or lower extremity of the mat is fixed. The edges of the mats meet one another over the rafters, but do not overlap; and they are so very light, that they may be drawn up and drawn down in an incredibly short time. These mats may also be drawn up in a direction across the glass sashes, by attaching a cord to one corner of each end, passing these cords over two pulleys; and, in that case, the mats might be laid like tiles on a roof, and the direction of the straw would better throw off the rain: but the mode first described, and which is generally used, is the simplest, and has the advantage of being worked by one man, whereas the other cannot be worked without two, or at least not very easily.

I fear this description will be considered tedious, and perhaps not so clear as might be wished; but no agricultural labourer will find any difficulty in making such mats, when given to understand for what purpose they are to be used.

I have more than once had recourse to these mats as a protection from hail in the daytime, and occasionally for shading newly shifted pines. I am happy to see that they are beginning to be adopted in some of the nurseries and market-gardens, and have little doubt that, as the merits of this very simple and economical mode of preserving heat come to be known, straw coverings will be universal in kitchen-gardens. The new system of heating by water, and the revival of this old system of covering with straw or reeds, I consider to be the greatest improvements that have been introduced into the forcing department in my time.

I am, Sir, &c.

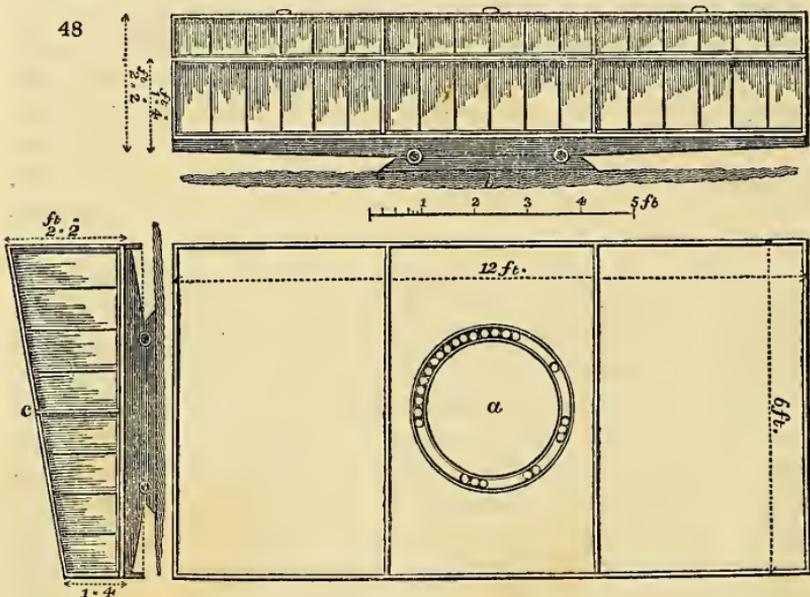
Gunnersbury House, May, 1827. WM. JOHNSTON SHENNAN.

We can most strongly recommend the straw coverings as in many cases far preferable to mats or canvass. They are used at Henderson's nursery, Edgeware Road, the Clapton nursery, Ronalds's nursery, Brentford, and in the botanic garden at Kew. Mr. Shennan has left Gunnersbury, in con-

sequence of the death of his employer, Major Morrison, and is now gardener to Edward Baker, Esq. M. P., Salisbury. — *Cond.*

ART. XIX. Notice of a Revolving Frame for Forcing, and the Culture of Exotics, the Invention of Mr. R. Gauen of Millbrook; and of another Revolving Forcing-Frame by Mr. Alexander Bisset, Gardener to Robert Smith, Esq., of Methven, Perthshire.

MR. GAUEN has sent us little more than drawings of his invention (*fig. 48.*), by which it appears to be an oblong box



of wood or metal, the cover of glass like a cucumber frame, and the whole balanced on, and revolving by means of, iron balls placed in a circular groove (*a*). The elevation (*b*) and section (*c*) of such a frame may be easily conceived. (*Mr. Gauen's letter of September 19.*)

Mr. Bisset, referring to the notice of Mr. Gauen's invention in p. 102., says: "I have been engaged for some time past in constructing a revolving forcing-frame, purely of my own invention, the model of which I had prepared so early as the beginning of July last, and a description of which I shall likely send as soon as I can have the experience of its operation." (*Mr. Bisset's letter of October 2.*)

PART II.

REVIEWS.

ART. I. *Transactions of the Horticultural Society of London.*
Vol. VII. Part I.

(Continued from p. 55.)

8. *On the Esculent Egg Plants.* By Mr. Andrew Mathews, A.L.S. (Author of the Paper on a Dairy Cottage, &c., p. 135.)

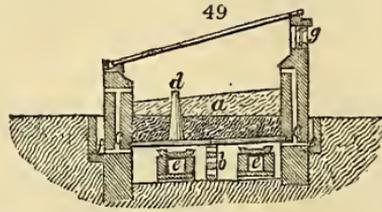
DUNAL, in his *Histoire des Solanum* (p. 102.), states that at Montpellier the *Solanum esculentum*, or Egg Plant, is sown early in spring, and comes into fruit about the middle of summer, continuing to bear abundantly till the end of October. The eggs are used, by both rich and poor, in soups and stews. The following mode of cookery has been tried, and found to answer perfectly: — “ Split each fruit lengthwise into three pieces; let each piece be scored, well rubbed with salt, and set to drain for two or three hours; after which, soak the pieces in water until the salt is extracted. Then pepper, and fry the pieces in butter with crumbs. When served the pieces will appear thin and flat.”

In the garden of the Horticultural Society, the seeds are sown in pots early in spring, and placed in a hot-bed frame; at two or three inches' height, the plants are put into separate pots, and replaced in the frame till they are nine or ten inches in height; they are then turned out of the pots in the open garden at a few inches' distance from the bottom of a south wall. They are watered in dry weather to prevent the attacks of the red spider, to which they are particularly subject, especially under glass. The sorts cultivated and described by Mr. Mathews are the Round Purple, and the Long Purple.

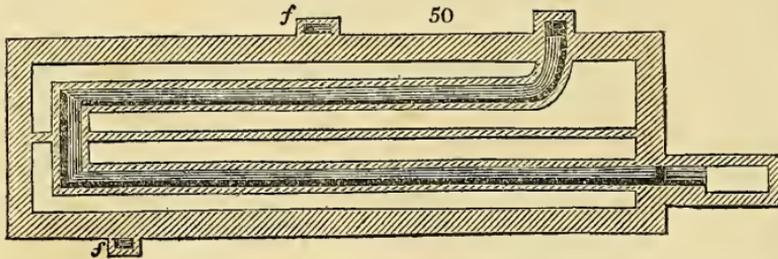
9. *Notices of Communications to the Horticultural Society between January 1. 1824. and January 1. 1825, of which separate Accounts have not been published in the Transactions.* Extracted from the Minute Books and Papers of the Society.

A Pine Pit erected in the garden of W. Forman, Esq. (fig. 49.) is heated by a flue in a chamber below the tan.

The tan (*fig. 49. a*) is supported by oak joists resting on the side walls, and on a middle wall of open brickwork (*b*). The joists are three inches deep, an inch and a half thick, and three inches apart; in-



stead of being covered with boards or tiles, a course of turf is laid over them, which is found to answer perfectly. The heated air is conveyed from the chamber below into the atmosphere of the plants, by means of small apertures (*c*) formed in the back and front walls at four inches and a half apart, and also through tubes of iron, or chimney-pots (*d*), resting on the joists directly over the flue. Through the same pipes or pots water may be poured on the covers of the flues, which are formed hollow (*e*), so as to generate steam at pleasure. Ventilation is effected by airholes communicating with the pit (*figs. 49. and 50. f*), and by sliding shutters in the



back wall (*g*). This pit is found to answer all the purposes for which it was designed.

Buck's Scarlet Rhubarb. — Specimens were sent on the 7th of January from Elford, which had been forced in the following manner: — “The roots taken up as perfect as possible, having the earth which adheres to them still attached, are placed in a bed of decayed tan, or in boxes or pots filled with the same, in the mushroom house, which, by the aid of a flue, is kept at a temperature of from 45° to 55° . Tan is preferred to mould, because it receives water more freely when given to the plants. After the forcing is finished, the roots are kept under cover of long litter, or manure, till warm weather in April, when they are divided by a sharp knife, and planted in a north border, or in the open ground; in the following autumn, the strongest are fit to be forced again in the ensuing winter, and the weakest are replanted for another season. It is found that peeling the stalks of this kind of

rhubarb, before it is put into a tart, both destroys the colour and deteriorates the flavour."

Apples have been preserved in hods in the earth, in the manner of potatoes, as described by our correspondent Mr. Donald, at Betley Hall in Staffordshire. The gardener's name is not mentioned, probably because the communication was sent by his master.

"Some apples, which had been thus treated, were sent to the Society on the 14th of February, in as fresh a state as if newly gathered from the tree. This plan of preserving apples must be very useful to cottagers and others who have not the advantage of a fruit-room for the protection of the produce of their gardens and orchards during winter. The apples should be of hardy and keeping sorts, and not more than four or five bushels should be put into one hod. It is requisite to place straw at the bottom and sides, and also to cover the top of the heap of apples with straw, so as entirely to separate them from the earth; this is not always done with potatoes."

Strawberries are grown at East Looe in Cornwall in beds in the following manner:—The runners are allowed to cover the beds with plants as thick as they can stand. In autumn the beds are covered with earth from the alleys or elsewhere to the depth of two or three inches. "In the spring, the whole shoot through the covering with vigour, producing very strong foliage, and in due season abundance of large and finely flavoured fruit. Before this practice was adopted, very little fruit was obtained. The soil is light, and the beds are occasionally watered when the plants are in blossom. The leaves, being abundant, hide the beds and fruit from the sun, and prevent evaporation and the growth of weeds. The fruit stalks grow eight or ten inches in height, and as the berries at their extremities increase in size and weight, the stalks fall under the leaves, and are consequently protected from showers beating the earth on them, which is often the case when plants stand in single rows. The first year of this plan is less productive than succeeding ones; the Wood and Alpine Strawberries do not however succeed under such treatment."

Wicker Protectors for tender trees and shrubs in winter, and newly removed plants in summer, were exhibited by W. Walcot, Esq. "They are made of ozier-work of the coarsest description, and, in figure, are accommodated to the plant for which they are destined; or if small, and not prepared with any specific object, of a hemispherical or conical form. They are either made entire, or in two halves which are

readily tied together. The points of the ribs of the work are made to project a few inches at the bottom, and thus serve as feet by which the protectors are fixed in the earth."

Celery has been grown successfully, late in the autumn, from the seedling plants which had remained in the spring seed-bed till they grew to a considerable size. The progress of the plants was proportionately more rapid than if they had been transplanted at an earlier period. The general idea is that plants under such circumstances are liable to run to seed; but, if the repetition of this experiment should be attended with similar success, it would be attended with some saving of labour and of ground, in the economy of the kitchen-garden.

An old Garden Wall, painted with seal oil and Rogers's (of Robert Street, Hoxton,) anticorrosion powder, was supposed by W. Cotton, Esq. of Wellwood House near Leytonstone, to lessen the tendency to blight in the trees planted against it. The smell of seal oil is particularly offensive; cod oil is less so, and a wall painted with it and anticorrosion powder "did not appear to be so great a preservative against blight." The anticorrosion powder has nothing to do with the blight-repelling quality of the mixture, which obviously depends on the smell. It is formed of powdered green glass bottles, scoria of lead, or other vitrified materials, which are found to adhere more firmly than the usual metallic oxides or [earths] which are employed in common painting.

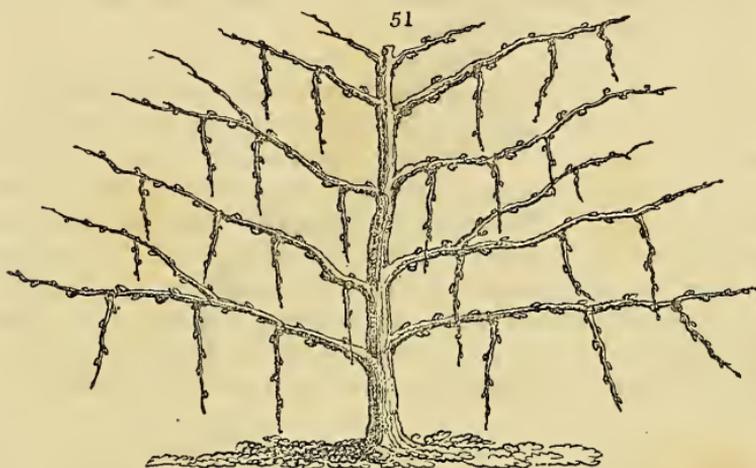
A strong Autumnal Crop of Red and White Antwerp Raspberries has been obtained by Mr. John Mearns, gardener to W. Hanbury, Esq. at Shobden Court in Herefordshire, by the following management: — "In May he removes the young fruit-bearing shoots from the canes, leaving in some cases one or two eyes, in others cutting them clean off. Under either plan, they soon show an abundance of vigorous shoots, frequently three or four from each eye, which produce plenty of blossoms in the beginning of July, and on these a good crop of fine raspberries is borne in August, when all the regular produce on the plants not thus treated is consumed."

The Crop of Onions at Thirkleby Hall in Yorkshire was continually lost, in consequence of their being attacked by the grub when half grown. Mr. Elias Hildyard, knowing that spontaneous production can only take place on the surface of the earth, and consequently that the seeds and eggs of insects will remain dormant when buried to a certain depth, trenched his ground so as to effect that object. It is almost unnecessary to observe that he found the same plan equally effective in reducing to a dormant state the larvæ that used to

feed upon his garlic and shallots. Like our correspondent Mr. Rose (*Gard. Mag.*, vol. ii. p. 274.), Mr. Hildyard sows in drills eight inches apart, and thins the plants and stirs the ground three or four inches deep twice or thrice during their growth.

The Rotting of the Jargonelle, Longueville, Windsor, Green Yair, and such like Pears, Sir George Mackenzie finds is retarded by gathering them before they are ripe.

A very full Crop of Pears was obtained by the Rev. John Fisher, of Wavendon in Buckinghamshire, from trees which before had not borne at all, by twisting and breaking down the young shoots (*fig. 51.*) late in the autumn, when the wood



had become tough, and after the sap had retreated. Mr. Fisher found this practice succeed with branches on which ringing had been tried without success, and states that the pendent branches continue perfectly healthy, which gives the plan some apparent advantage over ringing. Of course, breaking and twisting shoots or branches with a view to the production of blossom buds, when performed after the sap has retreated, will not be attended with the desired result till the second succeeding spring. A plan which from theory we should prefer is, tying down the young shoots in a completely pendent direction about or soon after midsummer; and this plan has the additional advantage of being applicable to standard trees, which the breaking and twisting mode can hardly be, unless in very sheltered situations. No artificial plan of inducing fruitfulness, however, not even ringing, is worth much, with a view to general adoption; but it is well to know what may be resorted to in cases of difficulty.

Passifloras are found, by Mr. W. Mowbray, gardener to the Earl of Mountmorris, at Arley Hall, not to fruit so well when set with their own pollen, as when set with the pollen of other species promiscuously. *P. racemosa* and *P. alata* fruited freely by using each other's pollen, but would not fruit at all when each was limited to that of its own stamens. The fruit of *P. alata* is of a yellow colour and pleasant flavour, and nearly as good as that of *P. quadrangularis*, though not quite so large. The great advantage of *P. alata* is, that it will thrive and fruit where the other will not live: it will grow planted in the floor against the back wall of a hot-house, and trained up the wall, keeping its roots quite moist. *P. quadrangularis* seldom does much good, unless when planted in a corner compartment in the bark bed.

Red and White Currants are preserved on the tree, in the garden of James Webster, Esq. at Westham in Essex, in a very perfect and fresh state till the middle of November, or later, by being covered with bunting from the time they have ripened. "This covering is found to keep the fruit in a better state than mats. The free admission of light and air to the tree seems to be beneficial. It is necessary, after the bunting has been fixed, to open it at the bottom occasionally, in order to remove the leaves which drop from the bunches. The berries should be well ripened before the bunting is fixed, otherwise they will shrink, instead of remaining plump and full."

10. *Report on the Instruments employed, and on the Plan of a Journal of Meteorological Observations kept, in the Garden of the Horticultural Society at Chiswick.*

11. *Journal of Meteorological Observations, made in the Garden of the Horticultural Society at Chiswick, during the Year 1826.* By Mr. William Beattie Booth, A.L.S.

JANUARY.

1826.	Days	Morning.			Noon.			Night.		
		Barom.	Hygrom.	Weather.	Barom.	Hygrom.	Weather.	Barom.	Hygrom.	Weather.
(Su.	1	29.816	36 | 36	— Wet	29.810	45 | 44	1 Cloudy	29.808	44 | 44	— Cloudy
M.	2	—857	40 | 39	1 Fine	—864	42 | 36	6 Fine	—895	32 | 31	1 Frosty
Tu.	3	—899	32 | 31	1 Frosty	—891	37 | 36	1 Cold	—927	33 | 32	1 Ditto
W.	4	—957	35 | 34	1 Ditto	—941	37 | 36	1 Cold & Cloudy	—953	35 | 34	1 Cold
Th.	5	—937	34 | 32	2 Cold	—911	35 | 35	— Wet	—866	36 | 36	— Wet
F.	6	—703	35 | 35	— Wet	—753	39 | 39	— Ditto	—802	39 | 39	— Ditto
Sa.	7	—856	37 | 37	— Cloudy	—868	34 | 34	2 Cloudy	—931	33 | 31	2 Cloudy

The benefits to be derived from such reports and journals as the present, must be at some future time, after a great many of them have been made, after a great many facts have been collected, and after they have been generalised by a mind devoted to the subject. These papers occupy thirty-five pages, but the only useful part of them that we can extract is the names of the makers of the instruments employed and the form of the tables, which may be useful to readers in the country who contemplate meteorological journals. We think them highly useful in gardens, by inducing habits of observation and accuracy in young gardeners.

Newman's Barometer, Daniel's Hygrometer, Rutherford's Thermometer, made by Mr. Newman, Howard's Rain-gauge, made also, we suppose, by Mr. Newman.

The objects to be recorded are,

"Firstly. The state of the barometer, hygrometer, and weather, at three periods of observation; viz. morning, noon, and night.

"Secondly. The maximum and minimum of temperature in each day, distinguishing the temperature of radiation from the common temperature of the air.

"Thirdly. The direction and force of the wind.

"Fourthly. The amount of rain.

"Fifthly. General remarks on the state of the weather during each month, with the means of all the daily observations, showing the mean pressure, mean temperature, mean dew point, mean force of vapour, mean degree of dryness, mean degree of moisture, the least observed degree of moisture, the maximum and minimum of temperature, both of the atmosphere and of radiation; the direction of the wind, showing the number of days it blows from particular quarters."

The manner in which the book, or journal, is ruled and kept, is shown at the bottom of this and the preceding page.

JANUARY.

Days.	Temperature.				Wind.		Rain.		Remarks.
	Max.	Min.	Sun.	Rad.	Direction.	Force.	In.	Pts.	
1	45	36	44	35	S.E.	Brisk		·10	The beginning of this month was cold with brisk Easterly winds.
2	43	30	54	24	S.W.	Little			
3	38	32	47	23	E.	Brisk			On the 8th a very sharp frost commenced, and the air, as shown by the hygrometer, was extremely dry during the 9th and 10th.
4	37	32	37	32	—	Ditto			
5	35	35	35	35	—	Ditto		·06	The barometer was also unusually high for the season.
6	39	36	39	35	—	Ditto		·03	
7	38	32	38	25	—	Ditto			

12. *On Orache, its Varieties and Cultivation.* By Mr. Williams Townsend, Under-Gardener in the Kitchen-Garden Department of the Garden of the Horticultural Society at Chiswick.

The Garden Orache, or Mountain Spinach, *Atriplex* (*A. privative*, *trepho*, to nourish; insipid food) *hortensis*, *Arroche des Jardins*, is more attended to in France than in Britain. In the former country it is used alone, and also mixed with sorrel, for the purpose of correcting the acidity of the latter. The quality of the spinach yielded by the orache is far inferior to that of the common spinach, and even of the New Zealand spinach, *Tetragonia*; but, the orache being a tall-growing plant, its leaves are produced so abundantly during the whole summer, that a few plants yield sufficient produce for a small family.

The sorts described by Mr. Townsend are, the White, Red-stalked White, Green, Red-stalked Green, Lurid Purple, and Red. Nothing can be more simple than the culture of these plants. Sow early in spring in drills two feet apart, and afterwards thin out the plants till they are two feet distant in the rows; or, what is better, sow in a bed or pot, and transplant at the above distances. A second sowing about the end of June will insure a succession of leaves, and the size and succulency of these will of course depend a good deal on the richness and moisture of the soil.

13. *On planting the Moist alluvial Banks of Rivers with Fruit Trees.* In a Letter to the Secretary. By Mr. John Robertson, F.H.S.

The low alluvial soils through which rivers frequently pass are known to be favourable to the growth of fruit trees, unless in cases where they are subject to protracted inundations, which chill the soil, rot the roots, and canker the branches. Mr. Robertson had a thriving orchard on the margin of a river not liable to overflow its banks, but, in consequence of some mill-weirs being built across it, the water was raised to such a height as to keep the soil of the orchard in a constant state of saturation. The trees soon became cankered, and began to decay; but, being determined to maintain an orchard there, Mr. Robertson formed the ground into high ridges or banks, with water ditches between, planting the trees along the tops of the banks. They grew rapidly, and produced abundantly, owing, in a great measure, to the roots "always necessarily protruding to the surface, where they receive more immediately the direct influence of the air, rain, and sun, and other agents conducive to vegetation." Almost every drinking pond in the

country affords a proof that the neighbourhood of water exposed to the air is not injurious to trees, provided the soil in which they grow be two or three feet higher than the water. It would appear, from Mr. Robertson's experience, and the vigorous growth of fruit trees on the canal banks in Holland, as noticed in Neill's very interesting *Horticultural Tour* (p.260.), that fruit trees so situated will thrive and bear abundantly, with less bulk of soil for their roots, than under the ordinary circumstances of soil without exposed water. Water, in contact with air, becomes more or less impregnated by it, and may, in that state, afford to plants a more abundant supply of oxygen, the vital principle both of plants and animals.

14. *On Dahlias.* By Mr. William Smith, Under-Gardener in the Arboretum Department of the Garden of the Horticultural Society at Chiswick.

The greatest improvement in the culture of dahlias has been the production of dwarfs. "For these desirable kinds of dahlias, we are principally indebted to William Wells, Esq. His gardener, Mr. Joseph Wells, possessing due knowledge of the qualities he wished his productions to possess, has succeeded in raising sorts which combine dwarfishness with early and abundant flowering, and produce blossoms of the most beautiful description. They begin flowering in June, when not above a foot high, and continue to blossom in constant succession, till the autumn frosts divest them of their beauty; they seldom exceed three feet in height, and some are even more dwarf."

The varieties of the dahlia are as endless as those of the garden ranunculus; both produce abundance of seeds, and of both it may be said that no two seedlings were ever found alike. Mr. Smith remarks that "a few of the double dahlias which were raised at an early period still hold a place in the estimation of gardeners, but, in general, those of a few years' standing have yielded their places to a younger progeny, which in their turn may be deprived of their station by fresh productions. In the progress of improvement, it may be hereafter a matter of curiosity to ascertain what was considered a good dahlia at the present period; this, without a record such as this paper will furnish, would be impossible. Thus we may indulge the hope that, in drawing up descriptions of the best flowers of the present day, we are not only amusing contemporary readers, but securing information to futurity."

Description of a good Double Dahlia.— "The flower should be fully double, always filling the centre; the florets

should be entire or nearly so, pointed or rounded, reflexed, and so forming a globular head, regular in their disposition, each series overlapping the other backwards; they may be either plain or quilled, but never distorted; if, instead of being reflexed, the florets are recurved, the flower will be equally symmetrical. The peduncles ought to be sufficiently strong to keep the blossoms erect, and consequently well exposed to view, and long enough to show the flowers free of the leaves; if they are a little pendulous in the taller-growing sorts, they will have a more elegant appearance. The plant ought to flower early and abundantly, and retain its characters until the end of the season. Bright and deep velvety colours are most admired."

Fifty tall and ten dwarf dahlias are described and arranged according to their colours; and, as these may be considered as forming a very complete collection, we shall enumerate their names as a guide to purchasers.

TALL DAHLIAS.

- | | | |
|--|------------------------------------|--|
| <i>White.</i> | | |
| 1. Dutch White. | 26. Miller's Royal Sovereign. | |
| 2. Agathe Royal, or Agate White. | 27. Douglas's Ruby. | |
| <i>Lilac.</i> | | |
| 3. Grand Alexander. | 28. Lee's Mutabilis. | |
| 4. Agate Imperial. | 29. Miller's Sans Rival. | |
| 5. Lilac Striped. | <i>Light Crimson.</i> | |
| 6. Spring Grove Lilac. | 30. L'Honneur d'Anvers. | |
| <i>Light Purple.</i> | | |
| 7. Ma Favorite. | 31. Dodonæus. | |
| 8. Speciösa. | 32. Princess Elizabeth. | |
| <i>Dark Purple.</i> | | |
| 9. Changeable Purple. | <i>Deep Scarlet, or Blood Red.</i> | |
| 10. Pülchra. | 33. Wells's Insignis. | |
| 11. Well's Atropurpurea. | 34. Miller's Beauté Suprême. | |
| 12. Douglas's Royal Purple. | 35. Middleton's Sovereign. | |
| 13. Purpurea nigra. | 36. Wells's Eclipse. | |
| <i>Morone, or Dark Purplish Crimson.</i> | | |
| 14. Morison. | 37. Wells's Sunflower. | |
| 15. Young's Crimson. | <i>Pure Scarlet.</i> | |
| 16. Sabini. | 38. Wells's Comet. | |
| 17. Hetherington's Waratah. | 39. Wells's Fúlgida. | |
| 18. Douglas's Chancellor. | <i>Orange.</i> | |
| 19. Douglas's Superb Crimson. | 40. Belvidere. | |
| 20. Douglas's Duchess of Gloucester. | 41. Orange Hog. | |
| 21. Douglas's Marquis. | 42. Koning Aza. | |
| 22. Young's Fimbriata. | <i>Buff.</i> | |
| 23. Wells's Crimson. | 43. Wells's Fawn-coloured. | |
| <i>Bright Purplish Crimson.</i> | | |
| 24. Douglas's Beauty of England. | 44. Royal Olive. | |
| 25. Douglas's E'legans. | 45. Camelliaeflora. | |
| | 46. Henriette. | |
| | <i>Yellow.</i> | |
| | 47. Sulphurea grandiflora. | |
| | 48. Lutcola. | |
| | 49. Sulphurea speciösa. | |
| | 50. Miller's Straw-coloured. | |

DWARF DAHLIAS.

- | | |
|--|---|
| <p style="text-align: center;"><i>Light Purple.</i></p> <p>51. Wells's Floribúnda.</p> <p style="text-align: center;"><i>Morone, or Dark Purplish
Crimson.</i></p> <p>52. Wells's Victory.</p> <p>53. Wells's Sanguínea.</p> <p>54. Wells's Princess Alexandrina
Victoria.</p> | <p style="text-align: center;"><i>Bright Purplish Crimson.</i></p> <p>55. Wells's Bright Purple.</p> <p>56. Wells's Floribúnda nána.</p> <p>57. Wells's Excellent.</p> <p style="text-align: center;"><i>Buff.</i></p> <p>58. Wells's Gris-de-lin.</p> <p>59. Tendre Agathe.</p> <p style="text-align: center;"><i>Yellow.</i></p> <p>60. Wells's Dwarf Yellow.</p> |
|--|---|

A very good way for an amateur in the country to give an order to his nurseryman, is, to write for one sort of each class, and that sort the cheapest; sixteen plants, which may be purchased for less than 4*l.*, will thus give a very good representation of the entire collection in the Chiswick garden.

Mr. Smith offers nothing new on the cultivation of dahlias, unless it be that they do not succeed well when placed more than once in the same soil, "and that, if it is desirable to have them always in one situation, it is necessary to renew the soil, by trenching it deeply the second, and taking it out and replacing it the third and succeeding years. It will seldom be found advisable to add manure; fresh soil is all that is necessary."

In a postscript it is observed that M. Poiteau, in the *Bon Jardinier* for 1827, has described 115 sorts of dahlia, the greater number of which, Mr. Smith thinks, "are perhaps strangers in our gardens." Another proof of the endless variation of this flower.

15. *On the Cultivation of Camellias in an open Border.* In a Letter to the Secretary. By Mr. Joseph Harrison.

A double red, double white, and double striped camellia have stood two or three winters in a sheltered part of the shrubbery at Wortley Hall. The soil is a brown loam, upon a rocky substratum. We saw the plants in October, 1826, and found them healthy bushes, between three and four feet high; and Mr. Harrison informed us that they flower freely every year, from April to July. The white variety is the least vigorous in its growth. When camellias are to be grown in the open air, Mr. Harrison recommends the choice of strong bushy plants, well supplied with roots; to loosen the fibres outside of the balls, and spread them out in direct lines from the ball, so as they may push forward immediately into the soil of the border; and to place the balls so low that, when the soil is levelled, the top of the ball may be four inches below the surface. These directions we know from experience

to be of some importance, whether camellias are turned out in the open garden, or in a conservatory. In dry, warm shrubberies there seems to be no doubt of the camellia enduring our winters.

16. *A Method of growing Crops of Melons on open Borders.* By Mr. William Greenshiells, F.H.S. Gardener to Richard Benyon de Beauvoir, Esq. F.H.S. at Englefield House, in Berkshire.

The mode of growing cucumbers on ridges or shallow beds of half-spent dung, in the open air, is well known to gardeners; and, in warm situations, melons may be grown in the same manner. The sorts grown by Mr. Greenshiells were, the Black Rocks, Scarlet Rocks, Green-fleshed, Nettle, and Early Cantaloup. The seeds of the first crop were sown about the middle of March, in pots, in a cucumber frame, and the bed or ridge was prepared in the first or second week in May, four feet wide, and one foot higher at the back or north side than in front. Hand-glasses, with two or three plants in each, are placed four feet apart, along the centre of the bed. Very little air is given till the plants have filled the glasses, but, when these appear to get crowded with vines, the glasses are raised up, and the plants allowed to grow out in the manner of ridged cucumbers. "If the vines are very thick, a few of the weakest may be pinched off, and the top of each leading shoot or vine removed. No more pruning will be necessary for the season. Setting the fruit at this season of the year is quite unnecessary."

To have handsome fruit, not more than one or two should be left on a plant. They will begin to ripen about the first week in August, and continue to be produced through that month, and part of September. To prolong the season, seeds may be sown three weeks later, planted out like the first crop, and, when there is an appearance of frosty nights, a cucumber frame and sashes may be placed over them. "By this means tolerably good melons may be had till the end of October."

17. *Notice of Five Varieties of Pears, received from Jersey in the Year 1826.* By Mr. John Lindley, F.L.S. &c. Assistant Secretary for the Garden.

The sorts are, the Marie Louise, Duchesse d'Angoulême, Doyenné gris, Doyenné panaché, Beurré d'Aremberg, known to be of first rate excellence.

18. *Upon the Culture of the Prunus Pseudo-Cerasus, or Chinese Cherry.* By Thomas Andrew Knight, Esq. F.R.S. &c. Pres.

"This cherry was introduced from China, by Mr. Samuel Brooks, of Ball's Pond, in 1819, and he presented a plant of

it in 1822 to the Horticultural Society. In the year 1824, it produced a crop of fruit in one of the houses in the Chiswick garden, which ripened within fifty days from the time the blossoms opened."

Mr. Knight thinks it may ultimately become an acquisition of considerable value. Some attempts by him to propagate it by budding, and from seeds, failed, as did also an "intention to have obtained a very early crop of cherries," by his going from home a few days at the time he "proposed to introduce the plant into the pine stove." Mr. Knight observed that this cherry put out very numerous roots from the bases of its young branches, similar to those often emitted in moist hot-houses by the vine; he thence inferred that it might be propagated by cuttings, and, having planted some, he states: "I have proved that plants may be thus raised with perfect facility."

19. *On the Culture of the Pine-apple.* By Mr. James Dall, Gardener to the Earl of Hardwicke, F.H.S. at Wimpole.

The soil used by Mr. Dall is brown loam, two and a half parts, leaf mould one part, and sheep's dung reduced to earth one part. Bottom heat 88° to 100° ; atmospherical heat during nights 60° to 70° , during sunshine from 12° to 15° higher. Suckers potted in June, in pots five and a half inches in diameter, were shifted into pots a size larger in October; again shifted in March, and the earth shaken from the roots; shifted in the July following; and, in the October of the second year, shifted into the pots destined for them to fruit in. "The size of the pots at this shifting was about twelve inches in diameter, and two and a half feet deep." After renewing their bark-bed, the pots are plunged little more than half their depth, and some time afterwards, when there is no danger of burning the roots, fresh dry tan is filled in between the pots as high as their tops. "For the more safe and expeditious manner of filling tan round the pots that are partly plunged in the bark-bed, as here stated, a pipe or funnel made of sheet-iron is used; the mouth that receives the tan is fifteen inches, and the lower end four and a half inches diameter, with two handles fixed to it, so that the operator easily holds it while a lad is filling in the bark from a flower-pot." The water used for watering the plants is never less than 80° or 85° ; in warm weather they are watered overhead. Always after shifting the plants are shaded during the heat of the day for at least a fortnight. The deep pots

and the funnel for filling in tan are new features, and the whole system has the great merit of simplicity.

20. *On forcing Asparagus.* By Mr. James Dail, Gardener to the Earl of Hardwicke, F.H.S. at Wimpole.

Hot-beds are formed of leaves instead of dung, and the plants are taken up with balls of earth attached to them; the rest is routine.

21. *Observations on forcing Garden Rhubarb.* By Mr. William Stothard, Under-Gardener in the Experimental Fruit and Kitchen Garden Department of the Garden of the Horticultural Society at Chiswick.

The essence of this paper was given by us at the time it was read. (*Gard. Mag.*, vol. ii. p. 356.)

22. *Account of some remarkable Holly Hedges and Trees in Scotland.* By Joseph Sabine, Esq. F.R.S. &c. Secretary.

In a journey which Mr. Sabine made in Scotland, in the autumn of 1825, so far from finding the country without trees, like Dr. Johnson, he was "much struck with the beauty and size of the holly hedges and trees," especially the following:—

At Tynningham, East Lothian, are 2952 yards of holly hedge, in different lengths, of different heights of from 10 to 25 feet, and of widths from 9 to 13 feet. These hedges, with the exception of one, "are regularly clipped in each year, in April; the work occupying the time of five labourers about three weeks. The hedges are kept with an even exterior, and contracted towards the top. They are carefully protected from the bite of cattle, and especially from sheep, which are very fond of the bark, shoots, and young leaves of the holly. They are planted on raised banks, which in most cases are kept dry by ditches on one or both sides. The soil in which the most vigorous growth is apparent is a deep light loam. The plants do not grow so luxuriantly when it is either sand or clay, and less well when it is moist with a retentive subsoil. The object of the banks and ditches here noticed, was to keep the roots dry and well drained." The largest single holly at Tynningham measures 5 feet 3 inches in circumference, at three feet from the ground; the stem is clear of branches to 14 feet high, and the total height of the tree is 54 feet. The hedges were for the most part planted in 1712.

At Collinton House, near Edinburgh, are holly hedges which exceed those of Tynningham in size as well as age, though not of such extended length. They are supposed

to have been planted in 1670 and 1680, are in vigorous health, and clipped and pruned once in every three years. "The extent of the hedges altogether is 1120 feet, those on the sides of the grass walk being 200 feet each; the eastern and western hedges of the garden nearest the house are each 170 feet; the eastern and western hedges of the farthest garden are each 190 feet. Their breadth at the bottom is 15 feet, which diminishes to 2 feet at the top. The height varies from 25 to 28 feet, but appears from below to be very even, notwithstanding the difference. They form a beautiful and secure protection to the gardens, of which that next the pleasure-grounds is planted with American and evergreen shrubs, and the other with deciduous shrubs."

At Moredun, near Edinburgh, is a holly hedge planted in the beginning of the last century, by Sir James Stewart, Bart. It is 378 feet long, 20 feet high, 9 feet wide at bottom, and 4 feet wide at top. It is annually pruned and brought into shape with hedge shears.

At Hopetoun House, near Queensberry, are some very fine single holly trees; the largest is 50 feet high, and has a clean trunk of 20 feet, measuring, at three feet from the ground, 5 feet 8 inches in circumference. Several are of equal height, with trunks of from 10 to 20 feet long; some are variegated, but these are rather of smaller dimensions.

At Gordon Castle, near Fochabers, in Banffshire, on an extensive bank facing the west, are a great number of hollies, and also birches, geans, ashes, and alders, apparently of spontaneous growth. "Few of the hollies stand single; several appear to spring from the same root, as if they had shot up from the stump after the original tree had been cut down, and many grow very close together, forming jointly a grand mass. The stumps of the former trees are in some instances perceptible, and in others, the earth on the sloping parts of the bank having fallen away from the roots, shows the origin of the present growth to have been the original stock.

"One group, where the bank is rather flat, consists of fifty-five trees, growing in a spot not quite 134 feet in circumference; and the girth of these, at six feet from the ground, is from 3 feet 6 inches to 18 inches. There are altogether 73 groups of holly trees, the trees forming which are in number 508; and of these 87 have trunks, free from branches, from 8 to 14 feet high, and are from 3 to 4½ feet in girth, at six feet from the ground: four are larger, two girthing 5 feet 10 inches, one 4 feet 10 inches, and one 4 feet 3 inches, at the above height. At the southern extremity of the bank, where the

slope is small, it is covered by smaller hollies, growing so thickly together that a man cannot pass through them; they appear to have arisen from seed, and are of younger growth than the others; they exceed 100 in number, but none are more than 2 feet in girth. On the flat ground adjoining the bottom of the southern part of the bank, some hollies of large dimensions grow, the measurement of the two best of which is as follows:— First, 52 ft. high; girth at the root, 7 ft. 5 in., at six feet, 5 ft. 7 in.; height to branches, 10 ft. 6 in.: second, 43 ft. 9 in. high; girth at the root, 4 ft. 9 in.; at six feet, 4 ft. 9 in.; height to branches, 8 ft. 6 in. The first of these trees divides, after the above height, into three large branches; the second into two branches. A few of the hollies on the bank are nearly as tall as the above.

“The alders have, when viewed at a distance, very much the appearance of oaks. The dimensions of three of them are as follows:— One, 71 ft. high, and 9 ft. 4 in. in girth; one, 61½ ft. high, and 7 ft. 4 in. in girth; one, 58 ft. high, and 8 ft. in girth; the girths being taken at from five to six feet from the ground.

“There is no record existing relative to these singular trees, nor any account of their age: none have been felled, excepting those which have exhibited symptoms of decay, within the knowledge of any person now alive.”

23. *An Account of a Plan of heating Stoves by means of Hot Water, employed in the Garden of Anthony Bacon, Esq. F.H.S.* By Mr. William Whale, Gardener to Mr. Bacon.

After twenty years' experience in forcing, both with brick flues and steam, Mr. Whale gives “the preference to the method Mr. Bacon has adopted of heating his houses with hot water.”

“Brick flues are subject, from their numerous joints, and the mortar cracking, to give out at times a sulphureous gas which is injurious to plants; and even with two fire-places, in a house forty or fifty feet long, it is impossible to keep up an equal temperature in the whole length. The houses get overheated in the neighbourhood of the fire-place, and it is difficult to maintain a proper warmth at the extremities of the flues.

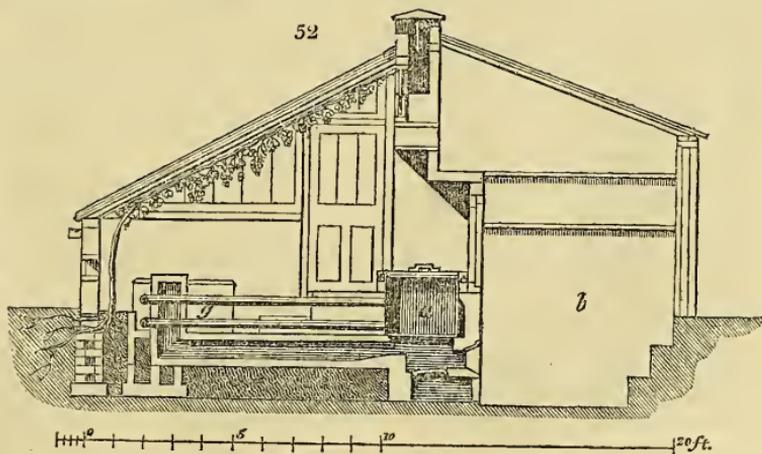
“Steam may do very well on a large scale, and where there is constant attention to the fire both day and night; but the objections are, the great expense of a steam-boiler, and the apparatus belonging to it; the frequent repairs that are required, and the necessary attention to the fire, which is

as great upon a small scale as upon a large one. Besides this, there is a greater risk of explosion in a hot-house steam-boiler than in that of a steam-engine; for steam-engines generally have persons properly instructed to manage them, but gardeners or their assistants cannot be so competent.

“The heating with hot water has none of the objections I have mentioned as belonging to flues and steam. The apparatus is simple, and not liable to get out of order. The boiler has only a loose wooden cover, and no safety valves are required. The fuel consumed is very moderate; and, when once the water is heated, very little attention is wanted, for it retains its heat for many hours after the fire has gone out.”

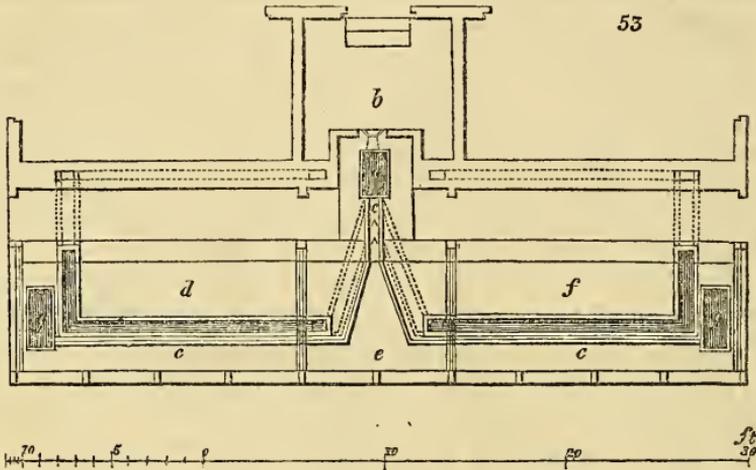
Mr. Bacon had, in 1822, put this mode of heating in practice on a small scale, at his seat at Abearnen, in Glamorganshire; and Mr. Atkinson, the distinguished architect, had, at his residence of Grove End, constructed a model of a similar apparatus, without at the time having any communication with Mr. Bacon, with which he tried the experiment successfully. The garden at Elcot contains four houses for vines and peaches, and also a pine pit heated with hot water, and Mr. Whale gives the vinery as a specimen of the mode in which this is effected.

“The house (*figs. 52. and 53.*) is forty feet long and ten feet wide inside, heated by a boiler (*a*), placed in a recess in the



centre of the back wall: the fire-place under the wall is got at from a back shed (*b*). The boiler is two feet six inches long, one foot six inches wide, and one foot eight inches deep. From the end of the boiler proceed, horizontally, four cast-iron pipes of three and a half inches' diameter (*c*): two of them are joined to the boiler just above the bottom, and the other

two directly above these, and just below the surface of the water. The house is divided by glazed partitions into three compartments (*d e f*), for the convenience of forcing one part



without the other. The middle compartment is two lights in width, and the other two have four lights each. The pipes from the boiler go horizontally to the front of the house, where one upper and one lower pipe branch to the east compartment, and other two pipes to the west, and are carried to the ends of the house along the sides of the flues, where they unite to cast-iron reservoirs at each end of the house (*g g*); which reservoirs are each three feet six inches long, one foot six inches wide, and one foot eight inches deep, having iron covers. These reservoirs are filled with water, that communicates, by means of the pipes, with the water in the boiler.

“ When the boiler, pipes, and reservoirs are filled, and a fire lighted under the boiler, the heated water, ascending to the top of the boiler, forces its way along the upper pipes to the reservoirs, the cold water finding its way back to the bottom of the boiler through the under pipes; and the circulation continues regular as long as there is any heat under the boiler, the hot water flowing through the upper pipes to the reservoir, and, as it cools, returning back to the boiler through the under pipes. I have repeatedly, after the water has been heated, immersed a thermometer in the reservoirs at the ends of the house, and have only found a difference of three or four degrees between that and the water in the boiler. It is not necessary to make the water boil; and, if the fire is judiciously managed, no steam will be raised, and no water wasted. It is, however, necessary to examine the boiler occasionally, and to add water when any has evaporated.

“ Valves might be fixed in the boiler, pipes, and reservoirs, for letting steam into the house, if required; but that would induce the necessity of boiling the water, and it has not been done here, as I find I can produce all the steam I require with little trouble, by watering the pipes with a watering pot.”

“ I am persuaded that the advantages of this mode of heating, with its great simplicity, will give satisfaction to every practical gardener who has an opportunity of trying it. When once the water is heated, and the fires well made, he may retire to rest, certain that the pipes will not get cold during the night, but retain a considerable heat in the morning.”

In order that we might be able to form an opinion on this subject from personal observation, we have lately examined some hot-houses at Deepdene and Rooksnest in Surrey, and Bickley Place and Sundridge Park in Kent, heated by water on the above plan, in some cases with a little variation, and the conviction on our mind is entirely in unison with the opinion expressed by Mr. Whale.

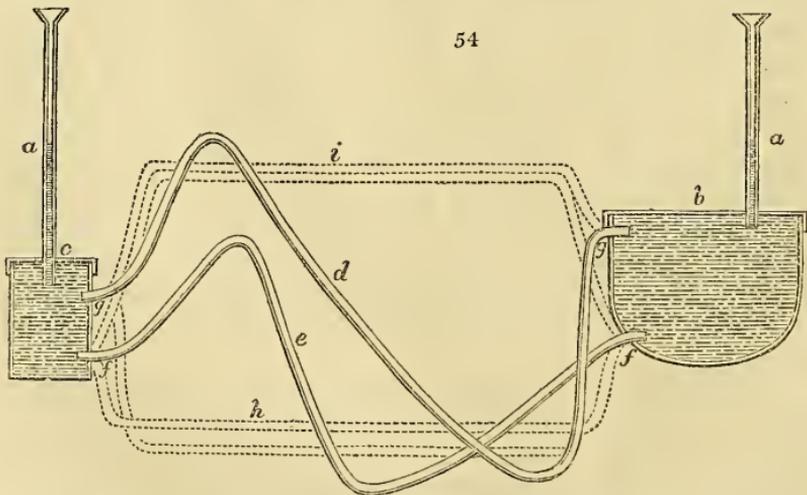
At Deepdene an orangery is heated by the circulation of the water through iron pipes without the addition of a cistern, the reservoirs of heat which that addition would supply being considered unnecessary. At Rooksnest all the houses and pits were heated by steam, in 1819, with perfect success; but no sooner was the water system discovered and tried, than Mr. Turner, convinced of its superiority over steam, discontinued the use of the steam-boiler, and adapted the steam-pipes to the water system described by Mr. Whale. On the evening of September 27th, we examined two pits heated in this way, and marked the progress of the circulation of the heated water, which with a moderate fire proceeded at the rate of two feet in a minute. On returning to these pits in the following morning, though nothing had been done to the fire after nine o'clock the preceding evening, we found the pipes still warm. The gardener, Mr. Squib, a very superior cultivator, who has filled his situation at Rooksnest for several years, and had extensive experience both with steam and smoke, entirely agrees with Mr. Whale in his preference of the water system to every other.

At Bickley, near Bromley, two houses are heated by water from one boiler, each house having a reservoir at the end opposite to the boiler; in one house, the pipes used are of earthenware, the joints cemented with Roman cement, and perfectly watertight. The gardener, Mr. Wells, of superior abilities in his profession, and of some of whose practices we hope to render an account at some future time, is as much in

favour of water as Mr. Squib, and considers earthenware pipes as perfectly sufficient, and, perhaps, in some cases, superior to metal, from the genial though almost invisible moisture which exudes through the pores of the material.

At Sundridge Park, an extensive conservatory and two vineries are heated by hot water, which is impelled through the pipes, to a certain extent, by the expansive power of the steam in the boiler. This work is believed to be the invention of Count Chabbanes; it is very ingenious, and deserves to be recorded as one of the first steps in the progress of heating by hot water; but the mode described by Mr. Whale is so superior, so much more simple and economical, that it is not likely Chabbanes's method will ever be repeated. The kitchen-gardener here, Mr. Thomson, understands both methods perfectly, prefers that of Mr. Whale, and has constructed a model for heating a vinery by Mr. Whale's method, where the pipes must pass under a footpath considerably below the level of the boiler.

As the water, by all these plans, circulates on a level, it may, at first sight, appear that this is a necessary condition to success; but a little reflection will render it evident that, if the height which the water stands in the boiler and the reservoirs be equal, and as high as the highest part of the pipes, the circulation between them will take place, however low the pipes may descend. If the covers of the boiler and reservoirs be fixed and watertight, a perpendicular pipe from each (*fig. 54. a a*), kept filled to the proper height, will have the



same effect as if the full dimensions of the boiler (*b*) and reservoir (*c*) had been so extended. The pipes between a boiler

and reservoir so adjusted may be conducted in any direction, and ascend and descend at pleasure, or in the most irregular manner (*d e*), so as they never rise higher than the level of the water in the boiler and reservoir (*a a*). The cold water pipe (*f*) and warm water pipe (*g*), provided they proceed from the boiler and enter the reservoir, the former lower than the latter, may be placed side by side in the space to be heated, either under the path of a hot-house (*h*), or so high (*i*) as to be out of the way of plants, or of persons walking in the paths. Hence hot-walls and the different floors of a dwellinghouse may be heated on this plan with the same facility as hot-houses, pits, or frames. For example, if Messrs. Loddiges, at Hackney, or Mr. Gunter, at Earl's Court, were to alter their mode of heating from that of steam to that of water, as their boilers are considerably above the level of the steam-pipes, all that would be necessary to procure a circulation of water in these pipes would be to have elevated reservoir tubes at the extremities of the different portions of their range, which they are in the habit of heating separately. These pipes need not be above an inch in diameter, and may be so bent and concealed as not to obtrude on the view, or in the slightest degree interfere with effect. All that is necessary is to recollect the fundamental principle of equal pressure. A very slight perusal of the article Hydrostatics, in No. 1. of the *Library of Useful Knowledge* (8vo, many cuts, 6d.), will explain this principle to any gardener of ordinary capacity. It is proper to state, however, that this mode of heating will always be carried into effect at least cost on level surfaces.

It is a gratifying proof of an enlarged and liberal mind in Mr. Turner to find that he who first suggested to Messrs. Loddiges the advantage of heating their houses by steam, and by the means of their example and his own, has mainly contributed to spread that mode of heating throughout the country, should have been one of the earliest to adopt a superior method. To give the system that popularity which it deserves, it only remains for Messrs. Loddiges and Mr. Gunter to turn their steam-pipes into water-pipes; and though it is not very reasonable to suppose that tradesmen will be so free in adopting alterations as men of fortune, yet, though we have never spoken to either of the parties mentioned on the subject, we should not be at all surprised at seeing the change effected. At all events, we are certain of this, that steam will never again be employed in gardening, as a medium of conveying heat. If all those who now employ it in that way do not adopt the water system, so much the worse for them.

It was mentioned to us by Mr. Wood of Deepdene, a gardener of more than common talent, taste, and industry, that a considerable saving of fuel was obtained by this mode of heating. We could not at the time conceive how there could be much difference in this respect; but, on since looking over some papers in the *Mechanic's Magazine*, Nos. 211, 212, and 213., by Mr. Gilman, civil engineer, we are inclined to think this may be accounted for, at least as compared with heating by steam, from the circumstance of more heat being frequently generated to boil water, than the water in that state can take up. In heating by hot water, the water seldom exceeds 150° , and at that temperature it would appear to have a greater capacity for taking up heat, than either in a cold or boiling state.

Since the above was written, we have seen two houses in Mr. Henderson's nursery, Edgware Road, heated in the Elcot manner, and have learned that several of the hot-houses at Woodlands, Blackheath, the Clapton nursery, and other places, are fitting up for the same method of heating. — *Concl.*

ART. II. *Memoirs of the Caledonian Horticultural Society.*
Vol. IV. Part I.

(Continued from p. 62.)

4. *On the economical Arrangement of Fruit Trees in a small Garden.*
By Mr. John Dick, Gardener, Ballendean.

PLANT and train in the espalier manner; the rows of espaliers north and south, at the distance of eight feet, and the height of the espalier rails five feet. Plant trees upon crab stocks, at twenty feet distance, on one side of the rails, for permanent trees, and others on paradise stocks, at fifteen feet distance, on the other side of the rails, for temporary trees. The ground between the rows will produce vegetables of much better flavour than those grown under the shade of standard trees. Mr. Dick has given a diagram, showing that the shadow produced by an espalier rail, five feet high, in latitude 56° , on the 3d of September at noonday, will not exceed eight feet, the distance between his rows of trees. He gives this diagram because "some persons might be afraid of the sun's shadowing the espalier rows too much;" but, as these rows are south and north, no shadow will be produced by the sun at midday, throughout the year. The diagram is therefore useless, if not deceptive, and Mr. Dick should rather have

shown what shadow would be thrown by the one row of trees on the other, in the ripening season of cherries and apples, at ten and two o'clock. In latitude 56°, on the 23d of September, at two o'clock, he will find one foot of the lower part of the west side of each row in shade, and of course this breadth of darkness will increase from that time till sunset: from sunrise till midday, the proportion of the east side of each row in shade will gradually diminish; at ten o'clock the proportion in shade will of course be the same as on the west side at two o'clock. We mention these particulars, not as to the disadvantage of Mr. Dick's plan, which we think unobjectionable in its kind, but merely to show the proper mode of considering the subject of shade as applied to it. The Society's silver medal was voted to Mr. Dick, "for devising this advantageous mode of arranging dwarf fruit trees in a garden."

5. *Description of an economical Pit for preserving Vegetables and Salads during Winter, and raising early Vegetables and Salads in the Spring.* By Mr. Alexander Stewart, Gardener to Sir Robert Preston, Bart., Valleyfield.

The same pit which is described in the *Horticultural Transactions*, and in the *Gardener's Magazine*, vol. ii. p. 414., and for which Mr. Stewart received the Caledonian Society's silver medal.

6. *On the Utility of employing Grass Turf, or Sward, in forwarding early Crops of certain Vegetables.* By Mr. Alexander Bisset, Gardener at Methven Castle.

This practice, as far as respects early peas, has been described by our correspondent, Mr. Bishop. (*Gard. Mag.*, vol. i. p. 126.) Mr. Bisset raises early potatoes, beans, and cauliflower plants, and even forces strawberries, in the same manner.

"The turf for a potato crop is cut into pieces of about three or four inches square: these are placed in a close, irregular manner, over the surface of the beds, and only one tuber or cutting planted in each piece of turf. This should be done about the middle of February; and by the time the potato plants have reached to the height of three or four inches, it will be found necessary to remove them to a sheltered and south-aspected border, where they are to produce their crop. But it may be here observed, that, as the application of bottom heat is in this instance essentially necessary, another desirable point may, without any additional labour, be gained; for, while the greater part of the potato plants may be removed

with safety, and transplanted into the open border, a part of the plants may be left in the pits, in such a manner as if they had been planted therein, for the express purpose of producing their crop. This being attended to, new potatoes may be had occasionally for the table after the middle of April; whilst a succession from the same plants may be afforded by the middle, or towards the end, of May."

Beans, both common and kidney, may be raised in a similar manner to the potatoes, only placing three or four seeds on each piece of turf.

Cauliflower plants, planted on pieces of turf in autumn, will remove with much greater facility in the following spring, and therefore the plants may be allowed to remain under glass till they attain a large size, and then they may be removed to the open border without checking their growth.

"*Strawberries*. — Upon the same principle, turf may be employed with advantage in the forcing of strawberries, by means of which the use of pots might be altogether dispensed with. This will be evident, from the following description. At the proper season of planting the strawberries, let a small piece of ground be formed into beds about four feet wide, and a quantity of turf be taken and cut into pieces of about five or six inches square, which should be placed in a regular manner over the surface of the beds. A quantity of fresh loam, richly manured, should uniformly be applied to the surface of the turf, previous to planting; and in order to furnish large stools, four or five plants should be separately planted in each piece of turf. This may be done to best advantage in the early part of the spring season, with plants taken from the runners of the preceding year; or, it may otherwise be accomplished with good effect in the end of summer, with plants selected from the runners produced the same year. If due attention be paid to watering in dry weather, the plants will be found to grow vigorously, so that, by the end of the autumn season, their roots will be fully established in the turf, and they may therefore be removed to the forcing-pit, with nearly as little injury done to them as if they had been planted in pots. It will be readily perceived, that, in this case, the strawberry plants, with their roots in possession of the turf, must of necessity be planted in a ball of earth or decayed compost, prepared in the forcing-pit appropriated for that purpose. In regard to the kind of strawberry fittest for our purpose, I may mention, that among the various kinds that I have yet become acquainted with, I consider the *roseberry* the most valuable for the turf mode: though it can by no means be allowed to be the earliest,

nor the best in point of flavour, yet it is a strawberry which invariably yields a plentiful crop even the first season after planting, which, independent of its other properties, renders it a most appropriate strawberry for being forced. But it may nevertheless be stated, that all such kinds of strawberries as are capable of being forced with advantage in pots, may be done so likewise with turf; for, if it be taken from a stiff soil, it will last for two years; and at the end of that period, it will still be found to possess its adhesive or binding properties."

Annual flowers may be forwarded on turf at the commencement of summer, and transplanted in patches in the flower-borders at any stage of growth, and without receiving the least check.

"The same practice may be followed with the more tender kinds of stocks, wallflowers, &c., by sowing or transplanting them at the proper season, and keeping them under shelter during winter, which, in the following spring, may be removed and planted in the flower-borders with perfect safety."

Near London, where turf is expensive, and even difficult to be got for money, pots will be found more suitable and economical; but in the country Mr. Bisset's plan promises many advantages. He was very properly rewarded with the Society's silver medal.

(To be continued.)

ART. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since August last, with some Account of those considered the most interesting.*

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers. 5s. 6d. coloured; 5s. plain.

No. IX. for September, contains

2762 to 2769. — *Tulipa stellata*, Stellated *East Indian* Tulip. From Kumaona, East Indies, by Dr. Wallich, to the Liverpool botanic garden. Greenhouse; but will probably prove hardy enough to bear the open air. "Certainly a most valuable acquisition to our gardens." — *Calypso borealis*, Orchidæa. Northern parts of Europe and America. Deserving a place in every collection. — *Octomèria graminifolia*; Orchidæa. An epiphyte, with a creeping rooting stem, and much of the habit and growth of a fern. From the West Indies in 1795. Stove; April; "and the blossoms yield a delightful fragrance, most powerful in the evening." — *Trixis auriculata*; 19 and 1, Compositæ. From Mr. Otto, of Berlin, under the name of *Perdicium brasiliense*. — *Justicia ventricosa*; 10 and 1, and *Acanthacæa*. A shrub from China, of the easiest culture in the stove. — *Euonymus echinata*;

Prickly-fruited Spindle-wood. A shrub from Nepal, climbing to a great distance. — *Witheringia montana*, *St. Lorenzo Potato*; 5 and 1, and *Solanaceæ*; the *Solanum montanum* of Ruiz and Pavon, and *S. Laurentii* of Dr. Mitchell, who, in his address to the Horticultural Society of New York (reviewed, p. 97.), recommends its culture, as keeping longer than the common potato. The roots are about the size of a chestnut, yellow, and of a good flavour; employed by the Indians in their soups and ragouts, and, according to Ruiz and Pavon, excellent for fattening swine. It may be cultivated like the common potato, or treated like a common green-house plant. — *Asarum canadense*; 11 and 1, and *Aristolochiææ*. A hardy perennial from North America, cultivated in England before 1715, and deserving a place in every collection, from the singular construction of its flowers. From the aromatic flavour of the root, it is much employed in Canada and Carolina as ginger. It flowers from April to July.

No. X. for October, contains

2770 to 2776. — *Banksia integrifolia*. — *Mirbèlia grandiflora*; *Leguminosææ*. — *Hutchinsia stylbosa*; *Cruciferaæ*. A pretty little plant like *Draba*. From elevated places in the Neapolitan mountains. Flowers in March and April of a fine purplish rose colour, with the fragrance of the Heliotrope. It will probably prove a valuable addition to our hardy alpine. — *Onocidium pulchellum*; *Orchidææ*. Epiphytic. Stove. — *Scilla esculenta flore albo*. — *Calceolaria purpurea*. From the Cordilleras, by Mr. Cruickshanks, to the Edinburgh and Glasgow botanic gardens in 1826. Resembles *C. corymbosa* (*Gard. Mag.*, vol. ii. p. 187), but with purple flowers. — *Gesneria verticillata*; *Gesneriææ*. “Beautiful and graceful,” and “in every way deserving of more extended cultivation.” Stove.

Edwards's Botanical Register. Continued by John Lindley, F.L.S. In 8vo Numbers. 4s. coloured.

No. CLI. for September, contains

1088 to 1095. — *Gèum* (from *geyo*, to communicate a good taste; roots aromatic) *coccineum*; 12 and 1, and *Rosæææ*. An “extremely beautiful, hardy perennial,” supposed to be a native of Chile, and communicated by M. Balbis of Lyons to most of the principal gardens of Europe. [One of the finest hardy herbaceous *Rosæææ* that have been introduced since *Potentilla atrosanguinea*.] Easy culture. — *Grevillea juniperina*; 4 and 1, and *Proteæææ*. A New Holland shrub, with the aspect of a juniper bush; of the easiest culture. — *Sisyrinchium cyanèum*. From Kangaroo Island, by Mr. William Baxter, collector to F. Henchman, Esq. F.L.S. H.S. — *Camèllia Sasánqua flore plèno*. Mr. William Beattie Booth, of the Horticultural Society's garden, is occupied on a complete history of Camellias. — *Pitcairnia flàmnea*; 6 and 1, and *Bromeliæææ*. A noble addition to the genus *Pitcairnia*. From Rio Janeiro, by Mr. William Harrison, “to whose exertions we owe the introduction of a larger number of rare Brazilian plants, than to those of any other individual.” Stove; culture of the pine-apple. — *Ophrys (ophrys, eyebrow; arched form of the calyx) tenthredinifera var. minor*; *Orchidæææ*. A beautiful little plant, from hilly places in Sicily and other places upon the European shores of the Mediterranean. — *Valerianèlla congesta*, Close-headed Corn-Salad. A beautiful annual. “The handsomest species of the genus; red flowers; perfectly hardy, and easily cultivated in the open border of the flower-garden.” From the north-west coast of North America, by Mr. Douglas, in 1826, to the Horticultural Society. — *Cyclàmen (kyklas, circular; root, or spiral coil of the flower-stalks when the seed is ripening) persicum var. laciniatum*. A cut-flowered variety of *Cyclàmen*, which made its appearance accidentally among some seedlings in the garden of the Countess of Sandwich at Hinchbrook.

No. CLII. for October, contains

1096 to 1102.—*Lupinus polyphyllus*. (fig. 55.) One of fourteen new species, mostly perennials, discovered by Mr. David Douglas in the north-west of North America, and which "will prove some of the most valuable additions that have been made to our garden collections for many years." A noble plant, with purple flowers.—*Ehrètia serràta*, raised by Mr. Colville, from seeds received of Prof. Anthony Todd Thomson, M.D. Stove; peat and loam; cuttings.—*Plectrànthus austràlis*; Labiàtæ. Herbaceous; green-house.—*Calothámnus villòsa*; Myrtàcæ.—*Clàrkia pulchélla*. (fig. 56.) By



Mr. David Douglas, to the Horticultural Society. "A hardy annual, requiring no care in its cultivation; growing to the height of one and a half to two feet, and producing its singular bright rose-coloured blossoms from May to September. Whether we consider the facility with which it can be managed, the curious and very unusual conformation of the petals, stamens, and stigma, or the brilliancy of its colours, this must be pronounced to be by far the most remarkable hardy annual that has lately been introduced, except the *Coreópsis tinctòria*."—*Amphodus (amphi)*, on both sides, *odous*, a tooth; a tooth on each side of the processes of the base of the vexillum)ovàtus; Leguminòsæ. From Trinidad, by Lady Hulse, to Mr. John Anderson, F.L.S. H.S. the indefatigable superintendent of the apothecaries' garden, at Chelsea; an excellent and benevolent man, with

a mind of great independence, and considerable originality, and one of the best friends of young gardeners.—*Verbèna paniculàta*. A hardy perennial from Virginia.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts. 5s. and 2s. 6d.

Part CXXV. for September, contains

1241 to 1250.—*Platylòbium parviflorum*. A shrub of low growth from New South Wales in 1792. Sandy peat and seeds.—*Æ'sculus rubicúnda*. One of the most beautiful of hardy trees, rather smaller than the common horse-chestnut. Grafting on the common species and easiest culture.—*Èrica imbricàta*.—*Diclíptera spinòsa*. A neat little stove plant of easy culture.—*Velthémia viridifòlia*. A stove bulb nearly allied to *Allètris*.—*Acàcia virgàta*. A free-flowering New Holland shrub, well adapted for a conservatory.—*Eriostèmon cuspidàtum*. An elegant glaucous-leaved shrub from New South Wales, in 1825, to Messrs. Loddiges. Usual culture of plants of that country.—*Bétula rùbra*. A hardy tree from Canada, probably attaining a large size. Well worthy of cultivation, and thrives in any soil.—*Viola pubéscens*. North American, and quite hardy.—*Prùnus dasycàrpa*. One of the earliest flowering trees, usually in bloom in March quite hardy. Introduced from Siberia many years since, but never much known.

Part CXXVI. for October, contains

1251 to 1260. — *Phlòx pilòsa*. A beautiful perennial plant from the warmer parts of the United States; requires placing in a frame during winter, and flowers in May and June. Loam and peat. — *Spiræa crenàta*. A very hardy handsome shrub from Spain and Russia, flowering in April and May. Light soil; layers and suckers. — *Azàlea índica álba*. — *Linum campanulàtum*. — *Azàlea speciòsa*. "A charming subject," with deep orange flowers in May and June. — *Gentiàna bavàrica*. Pretty; not exceeding two inches in height. — *Æsculus pàvia*. — *Asclèpias quadrifòlia*. — *Erica pìnea purpùrea*. — *Uvulària pubérula*; *Melanthàceæ*. A perennial from the mountains of Carolina.

Flòra Australàsica. By Robert Sweet, F.L.S. &c. Monthly. 5s. coloured; 2s. plain.

No. IV. for September, contains

15 to 16. — *Hòvea purpùrea*; 17 and 10, and *Leguminòsæ Papilionàceæ Lòteæ Genístæ*. A dwarf-branching erect shrub, the finest species of the genus, excepting *H. Cèlsi*. — *Bànkisia marcéscens*, Inactive *Banksia*. A stout, bushy, evergreen shrub, from Lewin's Land, on the south coast of New Holland. — *Pàtersònia lanàta*; *Iridèæ*. A tufted, herbaceous, perennial plant, of the usual culture. — *Anthocér cis (anthos, a flower, kerkis, a radius; segments of the corolla like rays) álbianus*. A dwarf-branching evergreen shrub; presented to Mr. Mackay of Clapton by Mr. Aiton of Kew. This and the two first species are cultivated in the usual manner of Australasian shrubs; viz. loam, peat, and sand; and cuttings of young wood, in sand under a bell.

No. V. for October, contains

17 to 20. — *Anthocér cis littorèa*. A handsome shrub from King George's Sound, with yellow flowers in June. — *Charlwoódia congèsta*; *Àsphodelèæ Fruticòsæ*. About twelve feet high, with bluish lilac flowers in June. Named by Mr. Sweet in compliment to his "respected friend, Mr. George Charlwood, of London, an assiduous botanist," and, we may add, a man of a cultivated, liberal, and independent mind. — *Borònia serrulàta*; *Rutàceæ*. A dwarf, bushy, evergreen shrub, with pink flowers in July. — *Bossia`a cordifòlia*; *Leguminòsæ*. A dwarf, bushy, evergreen shrub, with yellow flowers in June.

Geraniàceæ. By Robert Sweet, F.L.S. &c. In Numbers. 5s. each.

Nos. XCIII. and XCIV. for September and October, contain

369 to 376. — *Pelargòonium Burnnettianum*, *Richiànium*, *Rollisòni*, *Knipeæ*, *Lacònix*, *eriosépalon (erion, wool, sepal, leaves of the calyx)*, and *Nairnii*.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers. Monthly. 3s. each.

No. LV. for September, contains

217 to 220. — *Hypècòum (Hypecheo, to resound; rattling of the seeds in the pods) procùmbens*; *Papaveràceæ*. A very pretty annual of the easiest culture. — *Aquilègia alpina*; *Ranunculàceæ Helleborèæ*. A rare and magnificent-flowered plant, which ought to be in every collection. "It has generally been lost by being confined in pots; it prefers a rich loamy soil, and the seeds should be sown as soon as ripened; the plants will then become strong before winter, and will bloom the following summer." — *O`rchis coriòphora*. A free-growing species, from Switzerland, with singular flowers, which possess a disagreeable scent. — *Collinsia vérna*; *Scrophularinèæ*. A beautiful annual plant from the borders of Lake Erie, of the easiest culture.

No. LVI. for October, contains

221 to 224. — *Phlox canadensis*. — *Herbertia pulchella*; Iridææ. A beautiful bulb from the Bay of Maldonado, by Mr. J. Anderson, the collector of Mr. J. B. Mackay, F.L.S. H.S. of the Clapton nursery. — *Viola pubescens*. From Montreal, by Robert Barclay, Esq. F.L.S. H.S., of Bury Hill, near Dorking. — *Phlox odorata*. Pink flowers, and very handsome.

Cistinææ By Robert Sweet, F.L.S. In 8vo, every alternate Month. 5s.

No. XIV. for September, contains

53 to 56. — *Heliánthemum cròceum*, Saffron-flowered Sun-Rose. Very showy, half hardy, and of the easiest culture. — *Cistus salvifolius*. Shrubby, white flowers, hardy, and of the easiest culture. — *Heliánthemum ròseum*, Rose-flowered Sun-Rose. Decumbent, very showy, and of the easiest culture. — *Heliánthemum canum*, Hoary Sun-Rose. A pretty, little, trailing, suffruticose plant, with yellow flowers. Quite hardy, and easily propagated by cuttings or seeds.

The Botanic Garden. By B. Maund. In small 4to. Large, 1s. 6d.; small, 1s.

Nos. XXXIII. and XXXIV. for September and October, contain

Rhéxia virginica, *Campánula carpática*, *Pulmonària paniculata*, *Dràba hirta*, *Pulmonària virginica*, *Lýthrum* (*lythron*, clotted blood; flowers) *virgatum*, *Xeránthemum* (*xeros*, dry, *antheon*, a flower) *lucidum*, *Córnus canadensis*.

The Florist's Guide and Cultivator's Directory; &c. By Robert Sweet, F.L.S. &c. In Monthly Numbers. 5s. coloured; 2s. plain.

No. III. for September, contains

9 to 12. — Cartwright's Rainbow Carnation, Stretch's Alexander Auricula, Strong's High Admiral, and Princess Alexandrina Victoria Ranunculus.

No. IV. for October, contains

15 to 16. — Cheese's Miss Cheese Pink, Hufton's Duchess of Newcastle Carnation, Page's Champion Auricula, and Goldham's Earl of Liverpool Tulip.

Medical Botany, &c. By John Stevenson, M.D., and James Morss Churchill, Esq., Surgeon. In Monthly Numbers. 3s. 6d.

No. IX. for September, contains

55 to 56. — *Gratiola* (dimin. of *gratia*, grace (of God); in allusion to its salutary qualities) *officinàlis*, Official or common Hedge Hyssop. A purgative which, given in over-doses, produces violent and continued vomiting. "Dr. Kostrzewki of Warsaw has offered some remarkable instances of its powerful influence in soothing and suspending irritation; and asserts that three maniacs, in the hospital at Vienna, were recovered by its use; that the most confirmed cases of lues venerea were completely cured by it; and that it usually acted by increasing the urinary, cutaneous, and salivary excretions. Dr. Perkins of Coventry states that it forms the basis of the Eau Medicinale, and that the recipe was given him by the Count Leiningen, who paid 500 ducats for it. This nobleman was a person of extensive reading, and a munificent patron of the arts, and had been in early life a martyr to the gout; an exemption from which, for several years, he attributed to the use of this medicine."

Momórdica Elatèrium; *Cucurbitàcææ*. A hardy annual, on waste grounds in the South of Europe. A few acres are raised annually at Mitcham in Surrey, and some other places, for the sake of the well-known elaterium (drastic purgative) of the shops. Dr. Clutterbuck instituted a series of experiments on this plant, from which it appears that "the most active principle belonging to it is neither lodged in the roots, leaves, flowers,

flowers, nor stalks, in any considerable quantity; nor is it to be found in the body of the fruit itself, or in the seeds contained within it. It was only in the juice around the seeds, therefore, that it could be looked for; and here it will be found."

Enánthe (*Oine*, the vine, *anthos*, a flower; blossoms with the vine) crocàta (containing a yellow juice). (*Gard. Mag.*, vol. i. p. 454. fig. 95.) One of the most active of our poisonous vegetables. "Mr. Erbert, a botanical artist, asserted that, while drawing the plant, the smell from it rendered him so giddy, that he was several times obliged to quit the room, and walk in the air to recover himself; but that, having opened the door and windows of the room, the free air enabled him to finish his work." The roots have a sweetish flavour, and may be mistaken, by those who know nothing of plants, for those of wild celery, or of the wild carrot or parsnep; many instances are quoted of death by their use. "Eight young lads, going a fishing to a brook near Clonmel, in Ireland, meeting with a parcel of hemlock dropwort, and mistaking their roots for those of water parsnep, ate a quantity of them. About four or five hours after, going home, the eldest, who was almost of man's stature, without the least previous disorder, on a sudden fell down backwards, and lay sprawling on the ground. His countenance soon turned very ghastly, and he foamed at the mouth. Soon after, four more were seized in the same manner; and they all died before morning."

Gèum urbànum. A native perennial, with roots of an austere taste, and fragrant odour. It is sometimes used in Germany as a substitute for Peruvian bark, but very seldom in this country in any way.

. No. X. for October, contains

57 to 40. — *Nicotiàna* (Jean Nicot, ambassador to Francis II. in Portugal) *tabàcum* (the name of the tube through which the smoke is exhaled in St. Domingo). — *Anthemis nobilis*, Noble or common Chamomile (*chamai*, on the ground, *melon*, an apple; smelling like apples). A tonic and stomachic. — *Mòrus nigra*, Common Black Mulberry Tree. Fruit used in gargles. — *Lavándula spica*, Spike Lavender. The spirit "forms a useful cordial for the nervous of the fair sex."

Barton, John, Esq., of Stoughton in Sussex: Author of "Observations on the Condition of the Labouring Classes of Society," and of "An Inquiry into the Causes of the Progressive Depreciation of Agricultural Labour." A Lecture on the Geography of Plants. London. 12mo, 4 folio maps, pp. 95. 7s.

The study of the geography of plants is of so recent a date, that for the progress made in it we are chiefly indebted to living botanists, and especially to the Baron Humboldt, and our distinguished countryman Mr. Brown. Decandolle, Wahlenberg, Von Buch, and Winch of Newcastle have also laboured in this department. From their works, and those of some other naturalists, Mr Barton collected together the leading facts which he lately delivered in a lecture before the Mechanics' Institution at Chichester, and has now published and illustrated by maps. To render it more generally interesting, Mr. Barton has, for the most part, directed his attention to the geography, or range of growth, of "those plants whose names, or the names of some of their productions, are likely to be known to every one; either the plants themselves being cultivated in our fields or gardens, or their productions employed by the apothecary, the dyer, or the cabinet-maker."

When we consider that in none of our popular introductions to botany, with the exception of the translations of Willdenow and Decandolle, is the subject of the geography of plants so much as noticed, and that none of these introductions or translations contain even so much information on

the subject; as we have compressed in our chapter on Vegetable Geography, in the *Encyclopædia of Gardening* (§ 908.), some idea may be formed of the service which Mr. Barton has rendered to the British naturalist. His little book may be considered an essential appendage to every introduction to botany that has hitherto appeared; and, as the subject of the geography and history of plants is far more interesting than the technical details of systematic botany, we think there are few, even general readers, that will not be gratified by its perusal. Not more than 1,400 plants were known to the Greeks and Romans; at present 5,000 species are known to be natives of Britain, and more than 50,000 have been described, exclusive of cryptogamous plants. Of this vast number only a few of the very lowest orders, as mosses, are universally distributed. The cause of the limitation of plants to certain latitudes, is doubtless to be found in certain peculiarities of their internal structure; but with these we are but very little acquainted. Each of the great divisions of the earth has also given birth to a set of plants distinct from those of other places; but the cause of this limitation may be traced to the geographical boundaries of these divisions. Plants originally belonging to one part of the world, when removed to another enjoying a similar climate, prosper as well as in their native country. These three facts form the foundation of all our knowledge of the geography of plants. It would occupy too much room, and in some measure be a repetition of the chapter on the subject in our *Encyclopædia*, if we were to abridge Mr. Barton's pages; the naturalist and general reader will have recourse to the work itself, and such gardeners as have not our *Encyclopædia* may purchase it, or borrow it from their employers. We shall finish our remarks with the beautiful conclusion of the author:—

“Here I terminate my sketch of botanical geography. If the question be now asked, ‘Whether any useful result is likely to follow from such a pursuit?’ I must acknowledge that if the word *useful* is employed in its vulgar acceptation, as referring to the supply of our physical wants, I cannot tell,—never having made the inquiry. But if the term *utility* is intended to comprise those higher advantages which are connected with the moral and intellectual influence of the employment itself, its tendency to elevate, refine, and humanise the character—to exercise, without harassing the faculties—to divert the attention from mercenary and sensual objects to purer and nobler contemplations—to bring the mind within the precincts of the temple, where it may readily, and often, and without violence, be called into the sanctuary:—if by this standard the value of our pursuits is to be measured, there are few of them, perhaps, that deserve to occupy a higher place than the study of nature.”

The maps are of Europe, Asia, Africa, and America, on which the names of plants are substituted for the names of places. A good exercise for children in the country would be to copy off the names of the plants beside the places on maps on a large scale, or on a blank globe; or miniatures of the plants might be painted on their geographical situations in either case.

Menteath, Robert, Designer and Valuator of Woods and Plantations, Author of “The Forester's Guide and Profitable Planter:” Miscellaneous Reports on Woods and Plantations, showing a Method to plant, rear, and recover all Woods, Plantations, and Timber Trees, on every Soil and Situation in Britain and Ireland. Edinburgh. 8vo, pp. 155, 2 pls. 7s. 6d.

Mr. Menteth has had much employment and experience relating to the subject on which he writes. His statements go far to prove that there is no portion or description of our wastes, but might be made highly productive and valuable, both in a private and public point of view.

So well convinced is he of this fact (appealing to what has already been done as proof), that he sees in it not only a sufficient field for the employment of our redundant population, but immense advantages which would accrue to the landholder, and ultimately to the state.

He last year addressed a letter to Mr. Peel on the subject, and therein states that one hundred acres, enclosed and planted as he would direct, at the expense of 4,200*l.* during twenty years, will, at the end of that term, yield a clear profit of 6,500*l.* That one acre of well planted and protected woodland will, after the first ten years, pay an annual rent of from 6*l.* to 10*l.*; and, if home-grown bark could be supplied instead of that which is imported, would save to the nation 400,000*l.* per annum.

His ideas on the propriety and practicability of covering the extensive wastes of Scotland and Ireland with wood are rational, and, in the present state of the country, highly interesting. He adduces certain parts of the woodlands of Earl Roden, in Ireland, which have not been planted more than sixty years, as at this moment being worth, if felled, 5,000*l.* per annum! and gives some equally encouraging instances of what has been done in Scotland. Of his plan, as a rational object, it has been said, that "it is not because it would set a-working thousands or tens of thousands of our idle population, that we would have our waste lands planted, but simply because the real value of the work would more than pay the cost of it, and would thus enable us to give our labourers bread for their mouths, as well as occupation for their hands."

Mr. Menteth appears to be a man of considerable originality and vigour of mind in his department, and quite *au fait* at the practical part of forest management. — *J. M. Chelsea.*

Withers, William, Junior, Esq., of Holt, Norfolk, Author of "A Memoir on planting and rearing Forest Trees" (Gard. Mag., vol. ii. p. 75.): A Profit and Loss View of planting One Acre of Land, on the System recommended by Mr. Withers, and on that generally adopted by Scotch Planters. London. One page, in the tabular form, 1 ft. 2 in. by 1 ft. 6 in. 1s.

The original expenditure, on Mr. Withers's system, is 28*l.* 15*s.*, and the clear profit, at the end of sixty-four years, 1,505*l.* 9*s.* 8*d.*; on the Scotch system, 17*l.* 10*s.*, and the loss, at the end of sixty-four years, after deducting the value of the trees, 272*l.* 10*s.* 5*d.* We entirely agree in the conclusion of Mr. Withers, "that, though a difference of opinion may exist as to the profit to be actually realised, enough is shown to prove that a liberal expenditure in planting and subsequent management, with compound interest thereon, will be amply repaid by the increased growth of the trees thereby occasioned."

FRANCE.

Annales de la Société d'Horticulture de Paris, et Journal Spécial de l'Etat et des Progrès du Jardinage. tom. i. 1re livraison, pour Septembre, 1826. Paris. 8vo, pp. 80. Price, in Paris, for twelve numbers, or one year, 15 *fr.* Gratis to members of the Society.

In an advertisement on the cover, it is stated that these *Annals* will be composed of twelve monthly numbers, of from two to four sheets each, *per annum*, with lithographic plates, occasionally coloured.

A prospectus, serving as an introduction, points out the necessity and advantages of a Horticultural Society to France, the advantages that will result from public exhibitions of gardening productions, and from the establishment of a garden, and the publication of the Society's *Annals* or *Transactions*. In order to be admitted a member of the Society, it is necessary

to be presented or recommended by one of the existing members. The price of the subscription is 50 fr. per annum.

A table of the members enumerates the Vicomte Héricort de Thury, as president; Comte de Lasteyrie and the Baron de Silvestre, as vice-presidents; Le Chevalier Soulange-Bodin, as general secretary; Baron de Mortemart-Boisse and M. Dupont, as ordinary secretaries; M. Huzard fils, as treasurer; a general committee; a committee of nurseries and fruit tree culture; a committee of culinary vegetables; a committee of economical and medicinal plants; a committee of ornamental plants, hardy and tender; a committee of landscape-gardening; a committee of directors of the intended garden; and a committee of editors for the *Annals*. These committees consist of ten members each, including the president and general secretary. The list of the members composing the foundation, or commencement, of this Society amounts to three hundred and thirty, among whom we observe the names of two or more (?) Englishmen; viz. Messrs. George and William Rollison of Fooling-Surrey (Tooting, Surrey), Sir Losh (?), and Dr. Spencer Smith of Caen. As may be expected, the members are chiefly amateurs, but they include also many of the respectable commercial cultivators.

A discourse, pronounced at the installation of the members by the president, (where and when is not mentioned,) takes a cursory glance at the history of gardening from the earliest ages to the establishment of the gardens of Fromont and of M. Boursault, on which gardens very long notes are given. A notice of the duties of the different committees concludes this first number.

As these *Annals* promise to embrace the subject of gardening in its fullest extent, and also to give "un bulletin bibliographique d'analyses et d'annonces," we hope succeeding numbers will enable us to lay before our readers every thing worth knowing in Britain, with respect to the state of horticulture, and the progress of cultivation in France.

Soulange-Bodin, M. le Chevalier, Pres. Lin. Soc. Paris, F.M.H.S. &c. &c. :

Quelques idées sur la régénération des Forêts. Discours lu à la Séance de la Fête Champêtre du 26 Mai, 1827, célébrée dans le Bois de Bellevue près de Meudon. Paris. Pamph. pp. 10.

The ideas are, to introduce numerous trees of North America along with the native trees; and, in other cases, to renew decaying forests by planting American trees or others not previously grown there, on the principle of the succession, or what is called rotation, of crops in agriculture, and which, it is ascertained, actually takes place in nature. In Aubrey's *Surrey* it is recorded that at Wootton, Mr. Evelyn's, a wood of beeches sprung up after a wood of oaks had been cut down; and several very remarkable instances are given in Dr. Dwight's *Travels in New England*.

Mérault, A. J. : L'Art du Jardinier, &c. Paris. 12mo, pp. 409.
4 fr. 50 cents.

This work forms part of the *Bibliothèque Industrielle*, but it is said in the *Bulletin des Sciences Agricoles*, that "l'auteur n'a pas consulté les Transactions de la Société Horticulturale, les Mémoires de celle de Berlin, et les nombreux ouvrages sur l'horticulture publiés en Allemagne, en Angleterre, et ailleurs."

GERMANY.

Reichenbach, D. L., Professor at Dresden : Taschenbuch für Gartenfreunde, &c. Pocketbook for gardening Amateurs. Leipsic. 8vo. 2 dols.

About two thousand garden plants, useful and ornamental, arranged according to the Linnæan system, are described, and their culture detailed.

Hartwig, Garden Inspector of the Botanic Garden of Carlsruhe : *Hortus Carlsruhanus, oder Verzeichniss sämmtlicher Gewächse, &c.* *Hortus Carlsruhanus, or Catalogue of the Plants cultivated in the Grand-ducal Botanic Garden of Carlsruhe* ; with a short History of the Botanic and Pleasure Gardens there, from 1550 to 1825, and the Ground Plan, Elevations, and Sections of the Hot-houses. Carlsruhe. 8vo, 1 fol. plate.

The palace and gardens of Carlsruhe are among the noblest in Germany : a general idea of them, accompanied by a plan, has been given in the *Encyc. of Gard.* (§ 7514.), and we shall here abridge Mr. Inspector Hartwig's short history, and inspect his catalogue and plans.

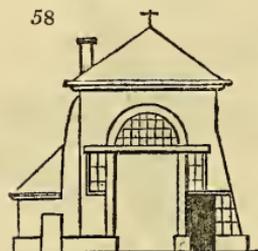
The princes of Baden have taken an interest in natural history from the earliest times ; and, from a conviction that all progress in the improvement of the soil is founded in a knowledge of nature, they laid out botanic and pleasure gardens, in which experiments might be conducted, interesting at once to the forester, the rural economist, and the man of science. The date of the first garden formed by this family cannot be found out ; the earliest records commence with 1520, when the Margrave Ernest built a castle and laid out a garden at Sultzburg. His successor, the Margrave Charles II., built and laid out Carlsburgh Dourlach in 1565 ; and, from 1595 to 1622, this garden was greatly increased and improved by the Margrave George Frederick, whose physician, the celebrated Gasper Bauhin of Basil, often visited and greatly admired the garden. The Margrave Frederick VI. also added to the garden of Dourlach, which Jerome Bauhin eulogised, as appears by the *Krauterbuch* of Tabernæmontanus of 1664, dedicated to this prince.

In 1689, the town of Dourlach, with many other towns and villages, was burned to the ground by the French ; but, notwithstanding this, the Margrave Frederick Magnus rebuilt it and renewed the garden. A red and white spruce fir, an avenue of chestnuts, and an ash tree, planted, it is supposed, when the garden was originally formed, in the sixteenth century, still remain, and are of a great size. The ash, which is 140 German feet high, and the trunk 19 feet in circumference, displays a label of tinned iron, with an inscription signifying that in 1802 it had stood three centuries. The avenue of horse-chestnuts is supposed to be the oldest either in Germany or France. Some of them exceed 120 Rhenish feet high, and 15 in circumference. Mr. Hartwig considers them larger than those of the Augarten at Vienna, which are said to be trees of the first generation, from the plants raised from the seeds brought by Clusius from the north of Asia to Constantinople in 1550, from thence to Vienna in 1588, to Paris in 1615, and to London in 1629. Since 1809 nothing has been done to the Dourlach garden.

In 1715, the Margrave Charles William founded the palace and gardens of Carlsruhe ; the latter being laid out in the French style by Berceon, with parterres for flowers strewed with different coloured sands, broken glass, porcelain, shells, &c., and the main walks lined with hedges of box, yew, hornbeam, &c. In 1751, Professor Hebenstreit of Leipsic, and the Carlsruhe gardener, Thran, were sent to Africa for plants. Thran returned successful in 1753, and soon afterwards the first Carlsruhe catalogue was printed. (*Haller. Bib. Bot.*, tom. ii. p. 266.) It contained about two thousand species, besides an immense collection of florist's bulbs of the finest varieties. From both about two hundred drawings were made by Trew, and described by Ehret. In 1763, Dr. Koelreuter was appointed botanist to this garden. In 1787, Schweyckert, who had studied gardening in England, was made inspector, and through him the garden so increased, that, in 1795, the *Hortus Carlsruhanus* contained five hundred species. In 1796, the French invaded this part of Germany, and caused the neglect of the garden ; and, in 1806, when Mr. Garden Inspector Schweyckert died, the number of species had declined to three hundred, chiefly ligneous plants and annuals. Mr. Hartwig, the present inspector, was then appointed to the situation, and began by intro-

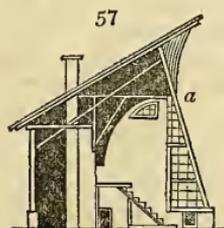
ducing from Paris a great many New Holland plants, then rare in Germany. The number of hot-houses was increased, and the hardy plants better arranged in the Linnean manner. In 1811, Gmelin published *Hort. Magni Ducis Badensis et Carlsruhenus*, &c. which contained upwards of six thousand species. In this year the archduke died, and Agave lûrida, which had flowered for the first time in Europe on his assuming the government sixty-five years before, again flowered. Various alterations were made, hot-houses built, an additional supply of water obtained, and fountains added; and, in 1823 and 1824, a great many urns and statues.

The garden is described with reference to the large sheet map of it which is prefixed to the catalogue. The hot-houses are mostly on the old Dutch plan, with steep glass fronts and bonnet roofs. (*fig. 57.*) The largest resemble our old slated conservatories. (*fig. 58.*) The stoves are calculated to have the glass covered



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by shutters let down from the bonnet part of the front (*fig. 57. a*), during the cold nights, and on the approach of hail storms. The bonnet roof is not only a great protection from the north, but powerfully reflects the sun's rays down on the glass in winter and spring, when they strike it at nearly a right angle.



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Some remarks are given on the culture and propagation of the plants in this garden, but they contain nothing which the English reader will not find at greater length in Cushing's *Exotic Gardener*, which has been translated into the German language; in Sweet's excellent work, *The Botanical Cultivator*, and in our *Encyclopædias of Gardening, and of Plants*. Considerable importance is very properly attached to the use of soft or rain water, the placing of plants in circumstances as near as possible to their native habitations in point of shade or moisture, and sheltering them from the east wind. Besides peat soil for *Ericas* and other plants, which the Germans call "hair-rooted," a great deal of use is made of rotten wood, or wood earth collected in baskets in the forests. American plants thrive better in this soil mixed with common garden earth, than in peat alone. *Rhododéndron*, *Azàlea*, *Kálmia*, &c., make shoots three feet long in a season. Judicious directions are given for watering in gardens with the syringe or engine, and keeping a moist atmosphere during the warm season. To destroy the worms, a composition of soap, sulphur, and bruised fungi of any sort, mixed, boiled, and allowed to stand till they ferment and smell powerfully, is recommended as a specific.

From a meteorological table, and some remarks on the geographical situation and weather of Carlsruhe, it appears to be one of the most favourable places in Germany for the culture of plants. Though two degrees farther north, and twice as high as London is above the sea, the average temperature of the year is about the same; but the average summer temperature is two degrees higher, and winter temperature two degrees lower. The greatest cold of the winter of 1822-3 was four degrees more than in London. The prevailing wind is from the west. In the course of twenty years, only one hail storm has occurred, which broke about forty panes of the hot-bed frames. The earliest season, from 1806 to 1824 inclusive, was 1822, in which year the first spring flowers were in bloom on the 8th of February, apricots on the 25th of February, trees green on the 24th of April, ripe cherries in the market on the 8th of May, corn ripe on the 20th of June, and grapes on the 30th.

The catalogue is arranged alphabetically; the scientific names and synonyms, with their authorities, are given; the German name, habit, and habitation in the garden. Of *Acacia* there are 59; of *Acer*, 26; *Achillea*, 38; *Acónitum*, 29; *Æsculus*, 9; *Alnus*, 7; *Aloe*, 85; *Aspidium*, 25; *Aster*, 76; *Bétula*, 15; *Cactus*, 61; *Campánula*, 42; *Centaúria*, 59; *Convallària*, 10; *Erica*, 92; *Euphòrbia*, 69; *Ficus*, 50; *Fráxinus*, 23; *Gentiàna*, 12; *Hieràcium*, 36; *Ibèris*, 11; *Ilex*, 13; *Iris*, 38; *Lonicèra*, 21; *Málva*, 27; *Melaleuca*, 26; and of *Mesembryáthemum*, 135 species. For the collection of succulents, which is extensive, due acknowledgments are made to the Prince Salm-Dyck, an enthusiastic cultivator of this tribe. Of

M. cerífera (fig. 59.), which our correspondent, Dr. Hamilton, proposes to cultivate (*Gard. Mag.*, vol. i. p. 403.), Mr. Hartwig has in some years collected five pounds of berries, of which he has made four large candles. *Passiflòra*, 35; *Pelargònium*, 155; *Phlòx*, 20; *Pínus*, 23; *Pópulus*, 14; *Potentilla*, 28; *Pròtea*, 24; *Prúnus*, 31; *Quércus*, 45; *Rósa* sp. and var. 106; *Sàlix*, 45; *Sálvia*, 55; *Saxifràga*, 52; *Scabiòsa*, 36; *Silène*, 56; *Stapèlia*, 50; *Verónica*, 48; *Vibúrnum*, 22; *Viòla*, 26; *Zízyphus*, 5.

The total number of species and varieties is above six thousand. Among these are a few species not yet introduced into Britain, and others considered rare here, which, as we are informed by Mr. Rausch, Jun., of the Imperial Gardens of Laxembourg, near Vienna, have been there many years. Among the latter may be mentioned *Wistèria Consequàna*, which covers a house, and has a stem as thick as a man's thigh.

On the whole, we are glad of an opportunity of noticing this catalogue, because it will show to the lovers of gardening in this country how much the art is held in estimation in Germany; and we hope this and other information will induce some of the London nurserymen to establish travellers in that country, which we are sure would answer. With a view to this, we would recommend all young men, intended as nurserymen, to pay some attention to the Dutch and German languages, as well as to the French. A few common phrases, the numerals, and about one hundred technical terms, would be enough to begin with. Any lad, capable of learning to bud or graft, might acquire them in twenty-four hours, and he would find them of immense use, not only in the event of going abroad, but for the purpose of transacting business with the foreign gardeners who visit England.

Anon.: System der Garten-Nelke, &c. A System of Arrangement for Carnations on the general Principle of Weismantel's Carnation System, &c., comprising a Guide to the Culture of these and other Florist's Flowers. Berlin. 8vo, 1 coloured Plate. In London of Treuttel and Co. for 3s. 6d.

This is a curious book, and we hope some florist of leisure will try what he can make of it. Carnations and picotees are arranged in classes, orders, and sorts, and a coloured petal given, exemplifying each sort, to the number of twenty-two. We are not inclined to set much value on the nicety of this arrangement, because we cannot conceive it to be at all permanent.



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PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

A *HORTICULTURAL SOCIETY* has been established at Paris on a plan of organisation similar to that of London. We refer to our review of the first number of their *Transactions* for details. (p. 202.) We are most happy to hear of it, and our correspondent, the Chevalier Soulange-Bodin, writes us of the 18th of September, that he was so much delighted that he gave an inauguration fête in his garden at Fromont, on the 30th of August last. An account of that fête, he states, will be found in the *Moniteur*, and in the second number of the Society's *Annals* when published. Such as desire to become members of this Society, may address themselves to M. Cassin, their Agent, Rue Taranne, No. 12.

Jardin de Fromont, June 15. 1827.—A visit was paid to this garden by the Royal and Central Agricultural Society of Paris. The proprietor is said to have received his learned guests "avec les luxes *confortable* d'un chateau des environs de Paris." A relation is given of what they saw in the garden, in the *Bulletin des Sciences Agricoles* for July last, in the usual laudatory style of the notices of the Fromont garden. We should like to see a better taste on the part of the writer of these notices; in England, at least, the reputation of the garden is more injured than benefited by them.

The Sophora japonica, Hoai-hoa, *Chin.*, Leguminosæ, has been cultivated in France since 1717, and flowered for the first time in the garden of the Maréchal de Noailles, at St. Germain, in 1779, under the name of *Robinia sinensis*. It was afterwards published by Bernard de Jussieu under the name of *Sophora sinica*, and also by Linnæus as *Sophora japonica*. It is stated in the *Hortus Kewensis* to have been introduced to England by Gordon, in 1753; but I took the first plants to England along with *Ailanthus glandulosus*, and gave them to Sir Joseph Banks, in 1780. Neither of these trees were then known in England. See the *Jour. de Paris*, Oct. 14th, 1779.—*Thomas Blaikie. Paris, Rue des Vignes, No. 5. August 18. 1827.*

The Duchesse d'Angoulême Pear is so named because it was found in July, 1815, when the reigning family of France returned for the second time to the head of the government. It was discovered by chance in the hedges of a forest of Armaillé, near Angers, in the department of Maine and Loire. The proprietor of that forest, struck with the size of the fruit and its excellent qualities, removed to his garden all the plants of that variety which his woods contained, and, at the end of five years, this pear was common in his neighbourhood. (*Bul. Agr.*, Jul. 1827, p. 115.)—If "all the plants" which he found with this excellent fruit were seedlings, no two of them would be exactly alike in quality, and of course there must be several varieties of this pear in cultivation.

Rhododéndron póniticum is found to contain some grains of common sugar, of a pure and white colour, on the inner surface of the upper division of the corolla. (*Bul. Un.*)

The Roots of a Black Mulberry Tree, which had lain dormant in the ground for twenty-four years, are said at the end of that period to have sent up shoots. (*Ann. des Scienc. Nat.*, tom. ix. p. 338., as in *Brandé's Jour.*, Oct. 1827.)

The Alternation or Succession of Crops, found to be of so much importance both in gardening and agriculture, has been proved to be a general law of nature, by M. Dureau de la Malle, in the *Ann. des Scienc. Nat.*, tom. v. p. 553., Août, 1825. The facts which he brings forward are perfectly consistent with the experience and observation of various naturalists and cultivators. The botanist Ray observed, after the great fire of London in 1666, that *Sisymbrium Trio* sprung up among the ruins, where it had never been seen before; and Professor Pallas, in the end of last century, observed in Russia that, when pine forests were destroyed by fire, they were not succeeded by the pine or fir tribe, but by wild service, birch, lime, poplar, and analogous trees; Dr. Dwight also, in the beginning of the present century, found that his grandfather's field near Northampton in Pennsylvania, which a century before was covered with oaks and chestnuts, after being under the plough for two generations, and then left to itself, brought forth a thick grove of white pines, without a single oak or chestnut tree. From the various instances, both of herbaceous and ligneous vegetables, adduced by M. Dureau, he concludes that the succession of plants is a fundamental law of vegetation in a state of nature, and that its imitation by art, in our fields, gardens, and woods, is of the first importance.

Spilánthes oleráceus, *Corymbifera*, the Cress of Para in India, and a stove biennial in this country, is found to be perfectly hardy in the *Jardin des Plantes*, and to ripen its seeds in the open air. (*M. E. Rousseau in Nouv. Bull. des Soc. Philomat.*, Oct. 1826, p. 156.)

Flavouring Wines. — Among the roots used by the ancients for this purpose were the following, which, it is said, are still employed in the same way: *Andropogon Schœnánthus* and *Nárdus*, *Acorus Calamus*, and *Iris florentina*. The root of the latter has the odour of the violet. The root of *Cypérus longus* is also very odoriferous. (*Olivier de Serres.*)

GERMANY.

Ripe Grapes of the black kind were gathered in a vineyard near Wirtemberg, on the Lower Rhine, on the 50th of July. The fact was considered so extraordinary that it was formally attested by the mayor of the district. (*Times*, August 28.)

An Onion planted by the side of a Rose, so as to touch its roots, is said to render the odour of the latter more intense. (*Æcon. Neuigk. und Verhandl.*, 1827, No. 12.) — We do not think it likely, but it may be worth a trial.

Preservation of Grain. — In the citadel of Mayence, a great quantity of corn was discovered in a vault, where it had remained since 1528. It was in such excellent preservation that bread made from it was found to be very good, though the corn had been kept nearly two centuries. In the department of the Pas de Calais, at Andres, may still be seen one of these vaults, made by the Romans, and used as granaries. (*Olivier de Serres.*)

The Seeds of Dodder, *Cúscuta europæa*, a parasitic annual of the *Convolvulææ*, *Pentan. Monoc. L.*, are not unfrequent among Dutch clover seed, the plant being a great nuisance to the farmers in that country and Flanders; but the seeds of *Cúscuta*, not being above a sixth part of the size of those of clover, are easily separated from them by sifting. (*Æconom. Neuigk.*, 1827, No. 12.)

ITALY.

Phormium bulbiferum, the *Lachenalia pëndula* of Hort. Kew., nat. ord. *Asphodelæ*, is cultivated in Sicily as the common hyacinth is in this country. It is planted in November, and the flowers, which are of a fine coral red, appear in the middle of December, and last till the end of January. (*Bul. Agr.*, Jul. p. 119.)

SPAIN.

Amalia ærisincola (æër, air, *incola*, an inhabitant) has hung out of the window of a house in the botanic garden at Barcelona, for fifteen or twenty years; and, when seen by G. A. W. Arnott, Esq., in 1825, still bore its blue flowers every summer. Mr. Arnott thinks the plant a *Tillandsia* from South America, and probably a described species. He advised the director, Dr. Baki, to put it in earth for a season, as by that means it would become much stronger, and suffer dividing at the root; but the Doctor was determined it should support the specific name he had conferred on it. (*Arnott in Jam. Jour.*, September, 1827.)

The Agave americana, which is planted in Catalonia along the road-sides as hedges, flowers at the ninth or tenth year, whereas, at Perpignan, in France, it flowers very seldom. When the scapes are young, or about twelve or fifteen feet high, and the pedicles not yet developed, they present the appearance of gigantic shoots of asparagus. When full grown, they attain the height of twenty-five or thirty feet, and all this in the course of eight or ten days. (*Arnott in Jam. Jour.*, September, 1827.)

NORTH AMERICA.

New York Horticultural Society, February 8. — The Inspecting Committee have printed their report (8 pages 8vo) for the by-past year. They state that “they have met weekly during the year, to receive and examine all such productions as were presented for examination;” and they give a list of the persons to whom, and the articles for which, premiums were awarded. Among the latter we observe early Lima beans, which we believe may now be purchased in the London seed-shops. Mr. William Fairbairn, gardener to Joseph Foulke, Esq., presented a large club calabash (figured *Gard. Mag.*, vol. ii. p. 93.), “said to be very fine for the table or for preserves.”

“Some potatoes were presented to the Society by Commodore Channcey, found in a native state, on the Island of St. Lorenzo, Bay of Callao, in the Pacific Ocean, by Commodore Hull. They were distributed to the practical gardeners, and have blossomed, but have not yet increased. They prove, however, to be a new species, and seem to possess the valuable property of keeping good a long time, perhaps for two years; and, as Commodore Hull, in his letter to the Society, says they are very fine eating, may perhaps, at a future period, turn out to be a valuable acquisition to our tables, and reflect great honour upon the worthy Commodore for his attention. A basket of Malabar spinach, *Basélla álba* was presented by A. Parmentier, of Long Island; it was served up at the anniversary dinner, and proved excellent; and is a valuable vegetable, as it is fit for use when spinach cannot be obtained.

“The exhibitions of vegetables and fruit throughout the season were in general very fine. The Visiting Committee, with a view of enabling themselves to lay before the Society some account of the general state of our horticultural improvements, have inspected a considerable number of gardens in the vicinity, and they feel much pleasure in being enabled to state, that the progress of this delightful science is now extending in a very promising

degree. The Committee urge upon the members of the Society the great importance of using every possible means to increase and enrich the library of the institution, yet in its infancy, which is so important to the promotion of the objects of the Society.

“ Upon a general review of the past season, the Committee congratulate the Society that a spirit of improvement, generally, has appeared in the exhibitions; and the Society seems to be advancing harmoniously, to the benefit of the public in general, by a diffusion of horticultural knowledge, and the increasing of the comforts of civilised life.

“ The Society offers premiums, for the year 1827, for all the essential articles of the flower and kitchen gardens, and discretionary premiums for all rare and superior fruit or vegetables, presented to them.”

Linnean Botanic Garden near New York, July 15. 1827. — N. Carrington, Esq., of St. Thomas's parish, Island of Barbadoes, informs me that, by impregnating the blossom of a lime with the pollen of a lemon, he had lemons on his lime tree within a few inches of the limes. In my garden, the dwarf chestnut, or chinquapin, has been impregnated with the large French chestnut, and a tree produced which does not exceed twelve or fourteen feet in height, and begins to bear fruit when not above two or three feet high. It is twenty years since this variety of chestnut was originated, and it has become very popular in this country. The *Júglans cinèrea* has been impregnated with the *Júglans règia*, or common walnut, but the result has not been attended with any horticultural advantage. A fine new variety of *Diospýros virginica* has recently been presented to me by General Forman of Maryland, which is in fine eating before frost, and which he describes as being more like a rich preserve than any thing else. The common sort, you know, is very much like a sloe. General Forman is one of those venerable and highly cultivated military patriarchs, who are only to be found in this country; he is surrounded by every enjoyment which property can afford, and spends his time in cultivating his farm, and in reading and other intellectual amusements. I have solicited him to become a contributor to your Magazine.

The cultivation of American forest trees seems now to occupy a good deal of attention in Europe, and I will therefore next introduce some observations on that subject. The yellow locust, *Robinia pseudacàcia*, is the finest timber tree of the northern and middle states; it is to the north what the live oak, *Quèrcus virens*, is to the south, and what the teak is to India; but another timber tree seems to be less known to you, which, although its merits are of a different character, still is scarcely less important, I allude to the *Magnòlia acuminàta*. Who that has been familiar with the six diminutive species of *Magnòlia* which have been brought from China, could imagine that one of its congeners towered among the mighty lords of the forests of the Alleghany? Who that has viewed the pigmies of this genus, seldom large enough to form a walking-cane, but would dwell with amazement on the sight of this tree, forming a regular cone often to the height of a hundred feet, rising amid the wilds of nature, and clad in the greatest luxuriance of foliage and of flowers? The effect of this tree in woodland scenery, I am convinced, has been overlooked in Europe; here it claims the lofty *Tília*, the *Liriodéndron*, and the mightiest oaks as its competitors. As timber it is applied to all the uses of the *Liriodéndron* and the *Tília*, being sawed into thin boards for all the lighter parts of cabinet-work: these boards are frequently two and a half feet in width. Another use is for the purpose of making wooden bowls, which are of all sizes, from a few inches to three feet in diameter. Its growth is very rapid, and it will even keep pace with the *Tília europæa*, or lime tree of Europe. I have often wondered that those persons who make use of the Chinese dwarf species of the *Magnòlia* to decorate their gardens and lawns, should not use this species

for stocks on which to graft those more diminutive kinds, instead of the practice generally pursued in Europe, of putting them on one of their own dwarf class, the *Magnolia purpurea*. I have pursued the course I mention, and have found the growth comparatively as three to one, with the ultimate advantage of the one forming a splendid tree, while the other would only be a diminutive shrub. I shall now proceed to comment on various articles published in your Magazine.

Mr. Drummond, the botanist, states (Vol. II. p. 228.) that the "barrens around New York are covered with *Pinus resinosa*." It is the *Pinus rigida* which covers the barrens in the vicinity of New York; not a single tree of *Pinus resinosa* is to be found here, except in botanic collections, that tree being peculiar to a much more northern climate, and found in plenty in the states of Maine. The vulgar name here for *Pinus rigida* is Pitch Pine, which must have misled Mr. Drummond; but, as this is three-leaved and the *Pinus resinosa* but two-leaved, a little examination would have solved all doubt.

The American Scarlet Strawberry, you say (Vol. II. p. 252.), is the latest of those deserving cultivation, with the exception of Alpines. This remark appears singular to me, for here the native *Fragaria virginica* is the earliest strawberry we have. How is this to be reconciled, except by the circumstance that these titles do not refer to the same plant? I notice also (Vol. II. p. 245.) that you call the celebrated Newtown Pippin "Newton Pippin," the former name only being correct, as it originated in the village of Newtown, distant but three miles from my residence. I will, in a future letter, give you a complete history of this most estimable fruit, from its origin to the present time.

In speaking of American grapes, (*Catalogue of Horticultural Society*, p. 215.) it is observed that "the reports which have been received of them are far from being favourable to their merits, either for the purposes of the table or of the press;" and as this assertion is very inaccurate, I cannot avoid replying to it. In this country we have scarcely a native grape that will not yield a pleasant palatable wine, and at least six varieties are found which afford excellent wine, and these varieties are now getting into extensive cultivation for that purpose. The Scuppernon is cultivated, in the state of North Carolina alone, to such an extent, that it is computed that a hundred hogsheads of wine are made from it annually. The Isabella yields a most excellent wine, of which you may rely on receiving a convincing specimen the ensuing autumn. The Catawba, Bland's, Alexander's, Orwigsburg, and Elsinburg are considered fine wine grapes; and vineyards, many acres in extent, are planted, and planting, with several of these kinds, in various sections of the country. A number of other varieties are also cultivated for vineyards, but these I have stated are the most noted. It is a fact well known to connoisseurs, that many of the celebrated wines which are most consumed are the produce of grapes which have no claims to superiority over the native grapes of this country; and although we, who have scarcely doubled in the number of varieties that of original species, cannot yet compete with that nation which boasts of possessing 1500 varieties of a single species, in fruit calculated for the table, still we have several varieties which are much esteemed, even for that purpose. Upon this subject I should not have made any remarks, except to the Secretary himself, were it not that I felt unwilling that it should remain unexplained for a long period.

What is the "American Blight," which infests apple trees so much in England? We have no disease here of that name, nor, in fact, have our apples any prevalent disease whatever. (See *Gard. Mag.*, vol. i. p. 388., and ii. p. 49.)

Does your fruit pound contain twelve or sixteen ounces? [*Answer*, Sixteen ounces.]

Can you give an accurate description of the cherry called "Four to the Pound, or Quatre à la Livre?" Are the statements we have seen of its great size, &c. merely imaginary? [By antiphrasis.]

Crimum longifolium, formerly *Amarýllis longifolia* is here perfectly hardy, and withstands our severe winters without protection. We set the bulbs about six inches below the surface of the earth, measuring from the upper end. This bulb appears to be naturally an aquatic, and flourishes most when planted in a pond or reservoir.

The *Láurus Cámphora*, or Camphor tree, also withstood, in Georgia, the last severe winter, as I have been informed by Thomas Young, Esq., of that state, who mentions that he considers it "as hardy as the *Láurus sássáfras*." Mr. Young is a gentleman of most liberal and enlightened sentiments, and amuses himself with naturalising in his splendid garden the rarest plants of warm climates. I am, dear Sir, yours, &c. — *William Prince*.

Nutmeg Tree. (p. 67.) — In the plantations of this tree in Trinidad it is found that, when raised from seed, not more than one female tree is found among thirty or fifty. The practice is, therefore, to inarch females on the males, or to raise young female trees from layers. It is found that female trees sometimes produce male flowers; and a male tree, which produced only male flowers in 1824, in 1826 produced wholly female flowers. In 1825, the first flowers that one of the female trees produced were all male. (*Lockhart in Jameson's Jour.*, Sept. 1827.) — We suspect it will be found that metamorphoses of this kind take place much more frequently than is generally imagined. Every gardener must have observed that young mulberry trees from layers sometimes produce only male blossoms for the first few years; and we think we have observed the same thing in the holly, dogwood, and even the peach.

Sugar. — I am convinced, says a writer in the *American Mechanic's Magazine*, that the time will come when sugar will be obtained from plants not at present cultivated for that purpose, and capable of being raised in places where they cannot now be raised. I noticed swarms of flies on the *Hólcus Sórghum*, that had been recently cut down; on twisting a handful of the culms, a table-spoonful of remarkably sweet juice was obtained.

Coloured Cotton. — At the Annual Cattle Show of South Carolina, a letter was read from Mr. J. W. Watson, dated at Guayaquil, accompanying a quantity of cotton seed of a new kind, the production of Peru. The cotton is naturally of a light brown colour. The plant is a perennial, grows to the height of a peach tree, and is expected to thrive in the United States. This is probably the nankeen cotton of China.

SOUTH AMERICA.

Palo de Vaca, or Cow Tree of the Caraccas. (p. 98.) — A phial of the milk of this tree, together with a few leaves and a portion of the root, has been sent to A. B. Lambert, Esq. by Mr. David Lockhart, curator of the botanic garden in Trinidad. The milk is obtained by making a spiral incision into the bark of a tree which attains very large dimensions. The one from which Mr. Lockhart obtained the milk was one hundred feet from the root to the first branches, and stood about fifty miles east of La Guayra, in the Caraccas. Mr. Lockhart drank a pint of the milk, and found it taste like cream, with an agreeable smell. He procured some young trees, and is now endeavouring to increase them in Trinidad. Mr. Don found the milk sent to Mr. Lambert to have the appearance of sour cream, and to be by no means disagreeable. The tree he considers as evidently related either to *Fícus* or *Brósimum*.

The Pods of the Cæsalpínia coriària, known by the common names of Dividivi, or Libidibi, are used by the inhabitants of Curaçoa and Carthageña, and other places within the tropics, for tanning hides; and might be advan-

tageously imported into this country, and afforded to the tanner upon even cheaper terms than the oak bark.

The seed-pods of the Dividivi are pounded in a mortar, and then steeped in water in large vats: when the water is well impregnated, the hide is thrown into soak for four hours, then taken out to be rough-dressed, and replaced in the vat for another four hours; and this process is repeated till the hide is well tanned, which is here the operation of a couple of days.

Such is the rude process adopted in South America, which, though defective in many particulars, is found to answer the purpose proposed. By grinding the pods of the Dividivi in the same manner as bark, and macerating them in warm water, by which the solution of the tanning principle contained in them would be rendered more complete and expeditious, an increased economy both of time and materials would be effected; and the process might, by other improvements in the manipulation, which the experience of the tanner cannot fail to suggest, be abridged still farther, and rendered more effectual, so as to reduce the present high price of leather very considerably. (*W. H. in Plym. Her.*, May 5.)

ASIA.

Dr. Wallich has been very successful in exploring the Botany of the Birman Empire. The number of species collected by him amounted, when the mission left him at Amherst, to about sixteen thousand, of which five hundred and upwards are new and undescribed. Among these last may be mentioned seven species of oak, two species of walnut, a rose, three willows, a raspberry, and a pear. Several plants discovered by him are so remarkable, as to constitute themselves new genera. Among the latter may be mentioned one which has been called *Amhéristia*, in compliment to Lady Amherst. This constitutes, probably, the most beautiful and noble plant of the Indian Flora. Two trees of it only are known to exist, and these are found in the gardens of a monastery on the banks of the Salwen. The number of specimens brought to Calcutta amount to little less than eighteen thousand, among which are many beautiful live plants for the botanic garden, chiefly of the orchideous, scitamineous, and liliaceous families. The Himalaya chain of mountains are from 5000 to 4000 feet high, and their Flora combines that of continental India and the Malayan countries. In economical botany, the tree producing the celebrated varnish has been discovered and described; the different mimosas producing catechu determined; the fine durable timber of the Burmans, called Thingan, ascertained to be the *Hòpea odoràta* of Roxburgh, and the Soonsdree, another valuable timber, the *Heritièra robústa*. A forest of teak trees was found, many of the trees measuring from 18 ft. to 19 ft. in circumference. The botanical world await the result of Dr. Wallich's mission with the greatest interest. (*Embassy to Ava in 1826-7.*)

The Borássus flabellifórmis is of as much importance to the inhabitants of the north of Ceylon, as the *Còcos nucífera* is to the inhabitants of the south of that island. The inhabitants of the north depend upon the produce of the *Borássus flabellifórmis*, for a considerable portion of their food, and of the articles which they export; the inhabitants of the south depend as much for food, and for articles of export, upon the produce of the *Còcos nucífera*: and it is to be remarked that, although there are forests of the *Borássus flabellifórmis* in the north of the island, you seldom meet with a single tree of the *Còcos nucífera*; and that, although there are forests of the *Còcos nucífera* in the south of the island, you seldom meet with a single tree of the *Borássus flabellifórmis* there.

The Kitul Tree, or Caryòta ùrens, has given rise in Ceylon to a distinct cast amongst the natives of the country. This cast is called the cast of Jaggeraros, from the sugar which is made of the produce of the *Caryòta*

ùrens being called Jaggery; and from the whole of the above cast, both male and female, who are very numerous, being employed in the culture of the tree itself, or in the manufacture of the sugar which is procured from it. No sugar is made in Ceylon from the sugar-cane; all the sugar used by the natives of that island is made either from the *Cocos nucifera*, or *Borassus flabelliformis*, or *Caryota ùrens*. Great quantities of sugar are made from these trees, both for their own consumption and for exportation. It is sold for one fourth or one sixth of the price of the cheapest sugar made from the sugar-cane. (See *Sir Alexander Johnston's Letter to the Royal Asiatic Society of Great Britain*, Vol. I. p. 545.)

Culture of Indigo on the Coast of Coromandel.—A memoir on this subject, detailing the choice of soil and seed, sowing, routine culture, reaping, and the manufacture of the dye, by M. B. Plague, will be found in the *Annal. Marit.* for July, 1825, and an abstract in the *Bull. des Sciences Agricoles* for July, 1827. It is not worth abridging, but it may be well to know where to refer for such information.

East India Spinach.—The *Beta bengalensis* and *Salsola indica* are said, by Dr. Francis Hamilton, to be cultivated for this purpose. (*Brews. Jour.*, Oct. 1827, p. 244.)

Fish are fed to a great extent in the neighbourhood of Canton, chiefly on boiled rice, to which is sometimes added blood or other offal animal matter. (*J. M. in Brande's Jour.*, Oct. 1827.)

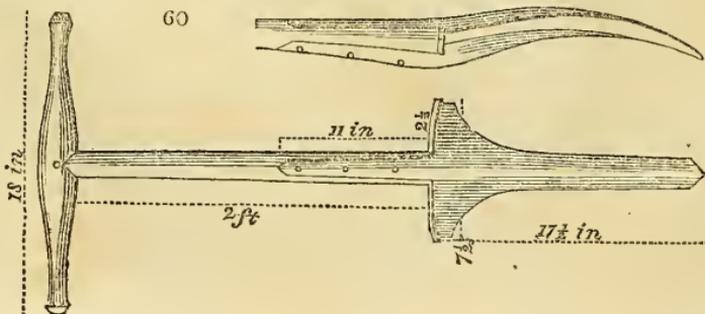
AUSTRALASIA.

Trees here appear to follow the same Laws as other vegetable Productions, regarding the effects they produce upon the soil wherein they grow. It has long been remarked in America, that, on the forests being cut down, young trees of a different species sprout up in the places of the old ones; and here the same remark, in a great measure, holds good, acacias very commonly making their appearance on land that has been once under cultivation, and afterwards permitted to relapse into a state of nature. From this circumstance it should seem that trees, like other vegetables, extract a particular substance from the ground, which substance it is necessary should be restored, before the same species of tree can be readily grown a second time; a restoration to be effected, perhaps, by such chemical changes in the constituent particles of the soil, as may arise from the cultivation of other species. (*Cunningham's Two Years in New South Wales.*)

ART. II. Domestic Notices.

ENGLAND.

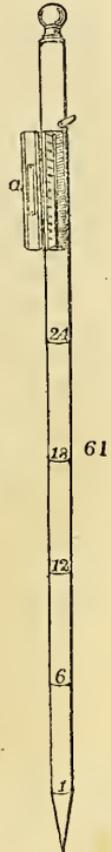
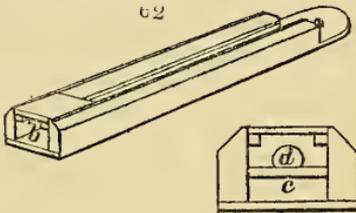
THE Perforator (*fig. 60.*) is used by Sir Richard Colt Hoare as a substitute for the spade, in planting leaf-wood trees, or all those which make



tap-roots, and are not included in the pine and fir tribe. It was invented by Mr. Munro, formerly of the Bristol nursery, and is made by Mr. Fussell, of Nunney, in Somersetshire, at 8s. each. The mode of using it is as follows:—One man employs the instrument while another man or boy holds a bundle of plants. The man first inserts the instrument in the soil, holding it up for the reception of the plant, round which, when introduced, he inserts the iron three times, in order to loosen the soil about the roots, then treads down the turf, and the plant becomes as firmly set in the ground as if it had been long planted. Two men will plant in one day from five to six hundred, at 1s. per hundred; whereas, by digging holes, the expense would be 5s. per hundred, and the planting not done so well. (*Sir R. C. Hoare, in Com. to the Bath Agricultural Society, of Dec. 1826.*)

Bregazzi's Bark-bed Thermometer (fig. 61.) is one of the best instruments of the kind which has been invented. By inserting it so that the bulb may be of an equal depth with the bottom of the plunged pots, the greatest heat to which the fibres in the pots are subjected is ascertained by inspection (a), without the trouble of moving the instrument.

Bregazzi's Hot-house Thermometer (fig. 62.) has a double back; the advantage of which is that, when hung from the roof of the hot-house, the heat of the sun against the back (b c) is prevented from operating on the bulb (d), by the current of air which passes between the backs.



In Jessop's Nursery, Cheltenham, is a standard Bourdine peach tree, growing in the most luxuriant manner, and covered with several hundreds of fine fruit; also a remarkably large netted oblong melon, which weighs 14 lbs., is 15 in. in length, and 2 ft. 3 in. in circumference. In the pinery, rice may be seen growing under water. (*Cheltenham Chron.*, Sept. 15.)—The melon and some of the peaches were sent us by Mr. Jessop, but they were too far gone to judge of their flavour.

The Diamond Plum is perhaps the largest fruit of the plum kind that is known. In form and flavour it resembles the *Magnum bonum*, but its colour is a dark purple, and flavour perhaps rather superior. It was found by chance in the nursery of Mr. Hooker, at Brenchley, near Lanberhurst, in Kent. The tree is a standard, supposed to have sprung up accidentally from seed; it grows vigorously, and, in orchards, its fruit will form a fine contrast to the *Yellow Magnums*. The *Purple Magnum bonum*, we think, would have been a suitable name for it, as conveying a good idea both of the fruit and of the tree. Plants of this and the *Washington Plum*, another fruit of superior excellence, introduced by Robert Barclay, Esq., of Bury Hill, will be eagerly sought after by orchardists.

The Beurré d'Arenberg Pear is one of the greatest bearers that we have, and comes very early into bearing; it is also considered a good keeper, and stands in the first class in point of flavour. Some trees in the garden of Lord Farnborough, at Bromley Hill, Kent, may be referred to as proofs.

Preservation of Apples.—Any good baking sort, which is liable to rot, if peeled and cut into slices about the thickness of one sixth of an inch, and dried in the sun, or in a slow oven, till sufficiently desiccated, may afterwards be kept in boxes in a dry place, for a considerable time; and only requires

to be soaked in water for an hour or two before using. (*Jour. of Science*, July, 1827, p. 272.)

A Pine-apple will keep for a long time when its crown is removed, and will also be greatly improved in flavour, for the more aqueous parts of the fruit gradually evaporate, and leave it much more saccharine and vinous in its flavour; which natural process is totally destroyed by the vegetation of the crown, just upon the same principle that an onion or carrot loses its flavour when it begins to sprout in the spring. (*Quar. Jour.*, Oct. 1827.)

Large Currants. — In the garden of the Rev. H. Bolton, I lately gathered several black currants, which measured in girth lengthwise two inches and one sixth, and in girth round two inches, and weighed forty-five grains each. The same tree produced many of equal size. — *Thos. Williams, gardener to the Rev. H. Bolton, Ratcliffe Lodge, near Nottingham.* Sept. 18.

Large Cauliflowers. — I have lately also cut, in the same garden, several cauliflowers, measuring, when stript of their green leaves, three feet three inches round, of fine flavour for the table, and remarkably handsome. — *Id.*

Rhèum tatàricum has been in cultivation in my father's garden, and some few others here, for about twelve years. The chief advantages attending it are, that it does not require peeling, is, when cooked, of as fine a colour as red currant jelly, and continues to send up new leaves till the middle of October. By forcing with dung laid over an arch of wickerwork, I have seen it on the table by the first of January. I do not know whether it can be obtained at the London nurseries; but it may be had of Mr. James Salter of this city, to whom I gave plants more than a year ago. It thrives best on a deep and stiff soil. — *Charles C. Babington.* Bath, Aug. 21.

Tart Rhubarb, Turnip tops, Beet Spinach, Asparagus, and various other stalks and leaves produced from bulbous, tuberous, or fleshy roots, may be grown in barrels or hampers, in ships, on the plan which is shown in your *Encyclopædia of Gardening* (§ 5992.) for growing chicory; and nothing can be easier than to have new potatoes and mushrooms in a ship's hold all the year. Spinach barrels should be kept on deck, and covered with a glass case to protect them from the sea spray. Small salads may be grown twenty ways. — *A Horticultural Sailor.* Greenwich, Sept. 23.

Gardens of Ships. — To sow in the temperate zone and reap between the tropics, is a somewhat singular thing. Yet it is constantly done. For our great East India ships, in imitation of the Dutch, who first introduced the practice, have little salad gardens in flat wooden boxes on their poops, where the seed acted upon by a heat increasing daily, shoots up in a surprisingly rapid manner. In these gardens the number of crops in the year are more numerous than in any spot on earth, for the gardeners, if so minded, can command almost any temperature. (*Weekly Review.*)

Change of Colour in Flowers. — It is not generally known, although long ago noticed by M. Decandolle, that, among flowers, yellows will not produce blues, nor blues yellows, although both these primitive colours will sport into almost every other hue. Thus the hyacinth, the natural colour of which is blue, will not produce a yellow; for the dull half green flowers called yellow hyacinths are, in our judgments, white approaching green; the blue crocus will not vary into yellow, nor the yellow into blue; and the ranunculus and the dahlia, the natural colour of both which, notwithstanding popular belief to the contrary with respect to the dahlia, is, we believe, yellow, although they are the most sportive of all the flowers of the garden, varying from pink to scarlet and deepest shades of purple, have never been seen to exhibit any disposition to become blue. (*Quar. Jour.*, Oct. 1827.)

Night-flowering Stock. — The flowers of this plant, which are of a brownish hue, will become green in one night, from the steam of horse-dung, in its first stage of fermentation. The effect is probably produced by the ammoniacal gas, which is deleterious both to plants and insects, and was em-

ployed by Miller, Baldwin, and other gardeners, for destroying the red spider and bug on pine-apple plants.—*D. B. July, 1826.*

Horticultural Impostor.—I consider it would be well to caution the readers of your Magazine against a man now travelling the country, offering tulips for sale, which he says are tree tulips, and will produce many flowers on one stalk of various colours, and, I am sorry to say, many have been imposed on by him here. I should have thought the striped dahlias sold all over the country, by such another fellow, last year, had not been quite forgotten. He asks 1s. 6d. each for the tulips, and says I have purchased twenty dozen of him, and that he obtained them when abroad.—*C. Hale Jessop. Cheltenham, Sept. 1827.*—The colour of the flowers of dark roses, dahlias, asters, as well as of many other, and probably of all plants, may be changed or discharged by the application of the fumes of sulphur. Burning a common brimstone match under them will do. The secret has been long known to gardeners in France and Germany, and we have frequently seen it tried with roses in this country. At a meeting of the Horticultural Society of London on the 16th of October last, some variegated flowers of dahlias were exhibited, from which the purple colour had been partially discharged by the partial application of the fumes of sulphur. The dahlias were of course striped or variegated; and something of this sort may have led to the imposition referred to by Mr. Jessop.

The Silk Tree, Acacia Julibrissin, in the Bristol nursery, was planted twenty-two years ago. It began to flower four years ago, and the two last years abundantly. On the 1st of September last, it displayed about three thousand blossoms. The tree covers a wall to the height of twenty feet, and the breadth of fifteen feet.—*E. D. Sept. 27.*

Two Rows of Dahlias in the Bristol nursery extend each one hundred and fifty yards and exhibit about a hundred different sorts, chiefly double, and almost all raised from seed by Mr. Miller.—*Id.*

Roots of the Arracacha have been received by Dr. Hamilton, from Carthagena, packed in powdered charcoal; they have been planted in the nursery of Mr. Pontey at Plymouth, and are doing well. The native situation, soil, and climate of the Arracacha are very similar to those of the potato. (*Phym. Jour., Aug.*) A second notice of September 22d informs us that two plants of Arracacha are now nearly in flower at Mr. Pontey's, and that two which Dr. Hamilton retained for private experiment, as to their capability of bearing the cold of our summer in the open air, are flourishing vigorously, without any artificial aid; of course their progress has not been so rapid as that of a plant plunged in Mr. Pontey's tan-pit. Their state of growth, however, is such as to promise favourably for the important experiment of acclimating this valuable esculent next year. (*Ibid.*)

The Seeds of Tetragonia expansa were sown in the open garden at Yarmouth last autumn, and have produced fine plants this spring; by which it appears that this plant will endure our winters in mild situations.—*J. Youell Yarmouth, July 27.*

The quickest and most certain Mode of raising the Mulberry Tree is from cuttings of the old branches. Take a branch in the month of March, eight or nine feet in length, plant it half its length in any good soil, and it will succeed to admiration, producing fruit the following spring. This I have witnessed in several instances.—*Id.*

Planting by mudding in.—I am sorry so useful a mode of planting should be disapproved of by some of your correspondents, in consequence of the earth afterwards becoming cemented. This will certainly be the case if stiff loam be used; but let them use two thirds of any light rich soil, with one third loam, and the plants will succeed to admiration. Last April I removed plants with fruit blossoms fully expanded, and in a growing state; one plant completely perfected and ripened its fruit, and made abundance

of wood, the others increased to my satisfaction, and have made good plants. — *Id.*

The Genista tinctoria, a low trailing native shrub, having something of the appearance of the common broom, is said to be much used in Russia as a cure for hydrophobia, and the Medico-Botanical Society of London are resolved on encouraging trials to be made in this country. (*Newsp.*)

The Red Spider and the Damp, the one as bad as the other, in melon frames, may be kept under by covering the surface with clean gravel, about three fourths of an inch deep. The roots find their way to the surface of the mould, and form a matted texture under the gravel, where, being more accessible to air, and yet kept moist, the plants grow so vigorously as to overcome every enemy. The practice is common in this neighbourhood. — *James Stephens, gardener to George Cooke, Esq., Carr House, near Doncaster.*

Chemical Relationship of Plants. — A writer in the *Isis* has undertaken to prove that there exists a chemical relation between, 1st, the different parts of a plant; 2d, the different species of a genus; and 3d, the different genera of a tribe. In proof, he refers to certain experiments from which tannin was found in every part of the oak, the narcotic principle in every part of the Belladonna; the prussic acid in the kernels of all the species of the genus *Prunus*, and a yellow colouring more or less in the bark of the roots of all the species of the genus *Galium*. This writer, Mr. Rudge, found one common principle in semi-florescous plants, and another in the Umbelliferae. Enquiries of this sort will tend materially to assist the study of natural classification.

Vital Principle of Seeds. — A small portion of the Royal Park of Bushy was broken up some time ago, for the purpose of ornamental culture, when immediately several flowers sprang up, of the kinds which are ordinarily cultivated in gardens; this led to an investigation, and it was ascertained that this identical plot had been used as a garden not later than the time of Oliver Cromwell, more than one hundred and fifty years before. (*Mon. Mag.*)

Apples and Nuts. — Six apples were last week plucked in an orchard, at Caton Green, near this town, which weighed four pounds and a half, and averaged twelve inches each, in circumference. We stated in a former paper, that apples and potatoes were both of a price in Ulverston market, 6d. the imperial peck; but on Thursday the 13th inst. apples were as low as 5d. the peck, and nuts in the husk equally low. This is really without parallel. (*Lan. Gaz., Sept.*)

Nuts. — We have heard a great deal about the quantities of nuts, and the number in a cluster, and sixteen, twenty, thirty, &c. &c., have been stated as gathered; but all these are outdone, and may be considered as common as a cluster of two. A gentleman in Kendal has in his possession a cluster of the common hazel nut, and which we saw, containing fifty-three perfectly formed nuts. (*Westmoreland Gaz., Sept.*)

Gardening, in the neighbourhood of Exmouth, is at its lowest ebb, and the natives generally are half a century behind their fellow-men. The nearest place worth mentioning is that of Lord Rolles at Bicton, and that is not kept up with any degree of spirit. — *M. Exmouth, March 10. 1827.*

A Turnip is now growing at Enville of the undermentioned size: breadth across the leaves, four feet one inch; circumference, two feet seven inches and a half; from the crown of the turnip to the ground, nine inches. (*Shrewsb. Chron., Sept.*)

A Mushroom two feet eight inches in circumference, measuring ten inches round the stem, and weighing 1 lb. 8 oz., was gathered, in the last week of August, in a field at Mottram, in Longdendale. (*Manchester Herald, Sept.*)

Fruit eaten by Rats. — A gentleman of Doncaster, who had frequently missed wall fruit from his garden, endeavoured to find out the robbers, but for some time he was unsuccessful. A day or two ago, however, he observed a number of rats issue from an adjacent building, and commence their work of destruction on the fruit, which they voraciously eat. Several of the rats were destroyed. (*Yorkshire Gaz.*, Sept. 8.)

SCOTLAND.

Caledonian Horticultural Society. — The Annual General Meeting of this Society was held September 6th, in the Physicians' Hall, Dr. Duncan, sen. in the chair, when several new members were admitted by ballot, and reports from the Finance and Prize Committees were read, from the latter of which it appeared that, in the competition of the preceding day, prizes had been awarded for twenty-five different articles.

Report of the Wine Committee. A smaller number of samples of wine have been produced to-day than on former occasions, only five competitors having appeared. The Committee beg leave to report that the best of those produced is one with the motto, *In vino veritas*, No. 1., by Daniel Vere, Esq., of Stonebyres, to whom they award the prize for the best and most vigorous home-made wine. No cider has been produced, which the Committee regret, as, from the increased attention bestowed on orchards, and on the cultivation of the apple tree, since the publication of the report on the orchards of Scotland, a considerable field has been opened for the manufacture of cider, which might tend much to the advantage of the tenantry. The prize offered by the Society for the best liqueur has brought out a variety of these. Of these the Committee considered Nectar No. 2. prepared by Mrs. W. H. Lizars, 5. St. James's Square, as being decidedly the best, to whom they accordingly awarded the medal. But the Committee cannot resist their desire to recommend another medal to Mr. Lewis Pederança, butler to the Hon. Douglas Gordon Halyburton of Halyburton, who has forwarded ten samples of different liqueurs, some of which are exceedingly palatable; and also of an oil prepared from walnuts, the growth of Scotland, which, in their opinion, is excellently adapted for table use and culinary purposes. The Committee propose this medal, with the double view of showing the Society's approbation of his skill and attention, and of inducing others to follow his example.

Communications. An interesting communication by Mr. Dewar, gardener at Rockville, on the use of steam in raising melons, which had been used at Rockville for two seasons with great success, was then read. The reading of two other communications; the one on raising ananas without fire heat, by Mr. Bisset, Methven Castle, the other on raising auriculas from seed, by Mr. Forrester, gardener at Carlourie, were delayed for want of time, on account of the immediate assembling for

The Dinner. In the afternoon, the Society celebrated their eighteenth annual festival of Pomona, in the Waterloo Tavern (Gibb's), the Right Hon. the Earl of Roseberry, president, in the chair, supported on his right and left by the Right Hon. the Lord Provost, and the Right Hon. Sir John Sinclair. Andrew Dickson and John Linning, Esqrs., officiated as croupiers. Dr. Scott of Corstorphine having craved a blessing, about two hundred gentlemen proceeded, with appetites nothing loath, to attack an excellent dinner, and a dessert, which comprised the competition fruits, consisting of no fewer than two hundred and eighty-eight different dishes. A great many toasts were drank, among others, "The staple exports of Scotland, Gardeners, Doctors, and Black Cattle." (*Caledonian Mer.*, Sept. 8.)

The Glasgow Horticultural Society and Library. — Arrangements with regard to the Society and Library till the general Meeting in August 1828, and as to the intention of the managers till 1854, have been published, and

signed by the president, Thomas Hopkirk Esq., from which the following are extracts :—

The first meeting of the Society for competition, will be held on the first Wednesday of June, 1828 ; the articles of competition are as follows, and must be presented betwixt eleven and twelve o'clock, noon :—

The twelve best distinct varieties of tulips ; four of them roses, four of them purple or brown, and four of them yellow grounds ; the six heaviest early white turnips ; the twenty-five best filled pods of peas, excluding those raised in front of hot-house borders ; the fifty heaviest gooseberries, taken from one bush, of a sort considered suitable for tarts ; the two best cucumbers ; the three pots of best forced strawberries, of at least two varieties.

The General Meeting will be held on the second Wednesday of August.

Articles of Competition. The six best seedling double carnations, not fewer than three varieties, from seed saved by the competitor ; the twelve best species of annual flowers, raised and grown without artificial heat, cover, or protection of any kind ; the six best species of annual flowers, raised and grown under hand-glasses, frames, or any other cover, but without bottom heat of any kind ; the six best species of annual flowers, raised and grown on bottom heat, but without cover or protection ; the four best species of annual flowers in pots, which usually in all stages receive artificial heat and protection ; the highest-flavoured melon above 2 lbs. weight ; the best imperial pint, or $\frac{3}{4}$ lb., of raspberries, of one or more varieties ; the twelve best plums ; the three best heads of cauliflower ; the six largest and most solid stalks of celery.

Three prizes will be awarded for each of the foregoing articles, except for the annual flowers, for which there will be only the value of a second prize allowed for each proposed mode of cultivation. Competitors may contend for all the modes, but, though successful in more than one, shall have right to the difference only betwixt the value of a second and third prize for all more than the one, and the value of a third prize will be granted to the persons who rank second in such cases.

The large silver medal of the Horticultural Society of London shall be awarded, for 1828, to the member of this Society who, upon the average of from three to six monthly visits to the garden under his charge during that year, and on comparing it with the gardens of other competitors, and taking into consideration the assistance afforded, the natural and other advantages, the extent and variety of articles cultivated, and all other matters which may influence his successful management, shall appear to the Visitors to display most knowledge of his business, greatest industry, and altogether most merit. There shall be other two prizes awarded by this Society to the competitors who, in the estimation of the visitors, rank second and third in point of merit, which prizes shall be raised by voluntary contribution for this special purpose. Members proposing to complete, must give intimation in writing to the Secretary before February, 1828.

The Library shall be opened, and on the first and third Wednesdays of every succeeding month books will be given out and taken in, from six to eight o'clock in the evening ; except on the days when meetings of the Society are held, on which days the Library will be opened instead of on those mentioned above.

All friendly to the objects of the Society are admitted to the competition meetings. The regulations of the Society and Library now printed, will be strictly adhered to. — *Thomas Hopkirk, President. Glasgow, Aug. 1827.*

The Dundee Horticultural Society held their Annual Festival Meeting on the 12th of September, when a rich display of flowers, fruits, and vegetables were brought forward in competition, and prizes awarded to upwards of twenty individuals for nearly forty different articles, to Mrs.

Thain for the best white currant wine, Mrs. Gutlrie, for the best black currant ditto, and Mrs. Turnbull, for the best wine from a combination of fruits.

A very large American gourd, weighing 66 lbs., was exhibited from Arthurstone, some fine white plums from Castle Huntly, and a number of fine seedling pinks from Airly Castle; some very fine white and green endive, white beet, mangold wurtzel (in Fife vulgarly called *Mungo Wilsons*), vegetable marrow, chiccory, salsafy, and scorzonera were produced by Mr. John Dick, Ballindean, and some very large early cabbages by Mr. Radley of the Asylum.

The Hall was opened to the public at half-past one, when an admiring throng, comprising the rank and beauty of the town and neighbourhood, honoured the Society by their presence. Seventy-six gentlemen sat down to dinner, and afterwards spent the evening in the most convivial and agreeable manner; giving toasts, calling upon one another for songs, and those complying having their healths drank in return for their complaisance. (*Dundee Courier*, Sept. 14.)

Dumfries and Galloway Horticultural Society. — The fifteenth Anniversary Meeting of the Society took place on the 20th of September. The prize show was opened in the Court Hall, at one o'clock; and on no former occasion was there ever such a rich display of fruit of all kinds, in the highest state of perfection. The quality was generally so excellent, that the judges had great difficulty in deciding many of the prizes. Those who attended were much gratified with the exhibition; and it certainly proves the vast importance of the institution, as the means of introducing such a variety of new and fine kinds of fruit into the country. It is the only institution in this quarter which has for its object the improvement of the country, and it is well entitled to the fostering care and patronage of the noblemen and gentlemen of this district. It was amongst the first provincial institutions of the kind; and many others of a similar nature have now been established in various parts of the kingdom, which are most liberally supported. It is to be hoped that our Society, which has stood the test of years, will not be neglected.

It was proposed to publish the new prize list, as usual, about Christmas. It was much regretted that no effectual steps had been taken to forward the formation of the experimental garden, which has long been in contemplation, and the utility of which all are convinced of, from the experience of gardens of the same kind already established, particularly those of London and Edinburgh; and the advantages of an experimental garden in this place would be of more importance now, from the liberality of the London Society, in kindly offering to supply us with a portion of their rare and useful plants, &c. The meeting, therefore, again recommended the above object to the particular attention of the members, and reappointed the gentlemen named last year as a committee, to forward so desirable a purpose.

The meeting, taking into consideration the report of the Committee of Management, respecting the liberality of the London Society, in sending from their garden at Chiswick, a valuable box of plants, grafts, and seeds, which have been cultivated by Mr. Irving, at Nunholm, reported as follows: — Most of the grafts and plants, &c., have succeeded well, and the produce will be distributed among the members in due time. They have also to express their gratitude for the splendid silver medal presented to the Society, and awarded to W. Chalmers, gardener to E. Stott, Esq., of Castledykes, and now produced for the inspection of the meeting. The unanimous thanks of the general meeting were voted to the London Society, for these and other favours conferred on the Dumfries Society.

The office-bearers for the ensuing year were chosen, and several new members admitted.

After the meeting in the Court Hall, a considerable number of the members and friends of the institution dined together at the King's Arms Inn. Francis Short, Esq. in the chair. The company were highly gratified, and spent the evening in a most agreeable manner, and many appropriate toasts and songs were given. After dinner, the resolution of the 16th of December last was taken into consideration, when it was unanimously agreed to vote a medal to James Webster, gardener to John H. Maxwell, Esq., of Munshes, as a reward of merit, persevering industry, and ability as a gardener; and also for his length of service in the same place. From his master's certificate it appeared that "he had served as head-gardener for thirty-four years; his conduct at all times met with the approbation of his employers; he is a sober, steady, honest, and industrious man, and his qualifications as a gardener are of the first rate." He has been a member of the Society ever since its formation, has regularly competed, and has been generally successful. Upwards of twenty prizes were given away to different gardeners, for fruits, flowers, and culinary vegetables.

A few almonds were produced from the garden of J. H. Maxwell, Esq., of Munshes.

A beautiful stem of the *Yucca filamentosa* was produced, which had flowered in the open border, in the garden of Drumlanrig Castle.

An orange tree in fruit, inarched by a bottle and water (*Gard. Mag.*, vol. ii. p. 33.), was produced by J. Cunningham, gardener, Cargen; he also produced apples which had been taken from the same tree in 1825-6-7, in excellent preservation, the Tom Apple.

An apple, the French Crab, which had been off the tree twelve months, was produced by A. M'Gillivray, in very good preservation.

Retarded gooseberries, in fine condition, and which had not been covered, were produced by A. M'Gillivray and R. Carson.

A new apple was produced by Gilbert Munroe, gardener to Viscount Kenmure, of excellent flavour; the tree first showed fruit in 1824; it was named the Kenmure Pippin.

A variety of new apples had been seen by the Secretary a few days ago, produced by R. Mundell, Esq., at Wallace Hall, from seed sown by Mr. Mundell, one of which was particularly well flavoured, and the tree against the wall was very healthy; the graft was taken from a hedge-row, and grafted on a Siberian stock. Mr. Mundell wished it to be called the Wallace Hall Pippin.

The best home-made wine was produced by Miss M. Maxwell of Terraughtie, made from white currants.

Apple cheese was produced by Mrs. W. Gordon, Buccleuch Street, one and two years preserved; a rich and excellent preserve.

A fine gourd, from Cargen garden, 68lbs. weight, was much admired; and also fine Altringham turnips.

Six different meetings and prize shows were held by this Society during the preceding part of the year, and nearly forty prizes given away. (*Dumfries Jour.*)

The Perthshire Horticultural Society, however little it has obtruded on public notice, can confidently claim the precedence of the greater part of similar societies throughout the kingdom, seeing that it has now been in active operation for twenty-one years; and, although it has only had the pecuniary aid of a very limited number of those in affluence, the beneficial effects produced through its influence on the various branches of horticulture have not only been creditable to the operative gardeners, but also highly advantageous to their employers. Let it not be understood that, in making this statement, we wish to under-rate the state of horticulture in Perth-

shire at the period when this association was formed, which we reckon, in general, not to have been a whit behind any county in Scotland; but it cannot be denied that, through the want of a suitable medium for intercourse, and comparison of flowers, fruits, and vegetable produce, previous to its institution, many of the articles tabled in competition at the earliest meetings, would not have disgraced those exhibited at Escomb plum fair: and although it has made no effort to send out a deputation to inspect and report the horticulture of France and the Netherlands, nor essayed to collect the chrysanthemums of China, its energies have been directed to objects of no less subserviency to promote the improvement of horticulture, by exciting a spirit of emulation amongst the operatives within its range, not only to collate those productions already in the country, but to attempt the attainment of new and superior varieties by raising from seed, and better modes in the culture of articles of acknowledged worth, having, since its commencement, awarded no less than five hundred and thirty premiums to the most successful rearers and cultivators of the better kinds of flowers, fruits, and culinary vegetables. Whilst by this institution the amateurs of horticulture have been highly gratified, and the energies of professional gardeners stirred up by being brought into contact with each other, in examining and discussing the merits of articles brought forward in competition, the youths who have devoted themselves to the profession have enjoyed very important advantages in being regularly admitted to the show-table, where they early and easily obtain a knowledge of those properties that constitute good productions, which otherwise might have cost them years of hard research. Often have we seen the apprentice of a year's standing shoulder himself towards his senior, and, in the attitude of profound attention, hear him descant on the merits of the prize articles, though with a wobegone countenance he discovers, towards the bottom of the table, several of the productions which he assisted in carrying to the show, thinking them *then* the best in the world. Happy it is for the age we now live in, that the diffusion of knowledge has become the bent of the higher ranks in society, inducing the establishment of Mechanics' Institutions, Libraries, &c. May we not indulge the hope that the Perthshire Horticultural Society will continue to receive the countenance and support of those who have an interest in its pursuits, and who, from their circumstances in life, can render its efforts more extensively useful? (*An Original Member.*—*Perthshire Courier*, Oct. 4.)

Strathmore Horticultural Society.—Sir,—In perusing your interesting Magazine, I perceive you are a warm encourager of Provincial Horticultural Societies; and since you have expressed a wish to be informed of the rise and progress of such institutions throughout the country, I have taken the liberty of informing you of the existence of a horticultural society with which I am connected, being not a little surprised that an account of it has not reached you sooner from an abler hand. Be pleased to know, then, that in that rich and fertile part of His Majesty's Scottish dominions called Strathmore and Carse of Gowrie, in which, though there are but few gardens that will bear any comparison with some of those magnificent establishments described in your Journal, yet there are a number that for the warmth of their situation and productiveness of the soil are scarcely rivalled in Scotland, and even in many parts of England. In a district like this the want of such a society was much felt by some of the more emulous gardeners; and the importance of it having been readily acknowledged by several of their employers and amateur brethren, the Strathmore Horticultural Society came into being. Its object, like all similar institutions, is the rewarding and otherwise encouraging those gardeners who excel in their various productions, whether for ornament, luxury, or use. Two meetings are held annually in the principal inn of Cupar Angus, and the prizes are decided by a sub-committee of our number, appointed for the purpose. It

is, however, a matter of regret that our funds have not enabled us to extend our ambition beyond the distribution of a few money prizes. Although the advantages arising from scientific libraries are readily acknowledged by all, yet the tardiness with which such propositions are entered into, and the partial support we receive from the country gentlemen, make it very doubtful if ever we shall attain such perfection, however much it could be wished. The existence, too, of other societies at Perth, Dundee, and Arbroath, operates powerfully against any attempt of this sort. These societies necessarily consisting of the gardeners and amateurs in their respective circles, their funds *individually* can never be great; but if they could see it their interest to form themselves into one society, say in Dundee, or in any other equally central place to which the means of conveyance from all the districts are as frequent, then the formation of a scientific library would be accomplished, without a doubt of its success. Even if the Dundee Society, by anticipating such a junction, were to attempt something of this kind, they may be assured of the co-operation of the most intelligent of the profession: indeed, it will be a matter of surprise to many, if that society, having a Right Honourable Lord for its president, and embodying wealth and intelligence in its committee, does not extend its views to the exciting a thirst for more intellectual enjoyment, rather than the gratification of the love of money, by some not easy kept. A society, with such intention, could scarcely fail to prosper, and no longer (as has been the case on some of our show days) should we hear wealthy merchants asking the name and use of that thistle-looking thing (pointing to an artichoke), or well dressed and apparently respectable females enquiring the use of many of our *not* uncommon culinary productions; and while the luxuries of the higher classes are improved, and those of the middle circles increased, the comforts and condition of the mechanic and labourer will also be increased and improved, and a higher standard of enjoyment will pervade the whole. I am, Sir, &c. — *Strathmoriensis*. *Balbrogie Garden, Aug. 14. 1817.*

The hint of our correspondent, in respect to forming a garden library at Dundee, will, we trust, be taken into consideration by the society of that place: ultimately, we trust, the example of the Ayrshire Horticultural Library will be followed throughout Scotland. Nothing can better show the use of local societies, however few their members, or limited their sphere of usefulness, than the circumstance mentioned by our correspondent, of many decent people not knowing the names and uses of what in England are considered the commonest garden articles. Books on cookery and domestic economy should not be forgotten in provincial libraries.

The Autumn Meeting of the Strathmore Horticultural Society was held at Cupar Angus, August 23., when prizes were awarded for an extensive collection of flowers, fruits, and home-made wines. The meeting was as usual graced by the presence of a numerous and fashionable assemblage of the ladies of Strathmore, who have uniformly honoured it with their patronage and support, and on this occasion bestowed their decided approbation on the very superior collection exhibited. The members of the Society thereafter partook of an excellent dinner in Rose's Inn, George Brown, Esq., of Blairfield, preses, in absence of Mr. Ross of Balgersho, and spent the evening with the utmost unanimity. (*Scotsman*, Sept. 1.)

Edinburgh Fruit Market, Aug. 15.—The prices of gooseberries, white and red currants, and raspberries are now very low. The black currants were almost instantly bought up at 1s. 4d. the imperial quart. Geans also sold well at from 8d. to 10d. a pound. Of the apples shown, the Early Fullwood and Thorle Pippin were the best; though not quite ripe, they were in fair eating order. Within these three years a pear has made its appearance in this quarter, which is not inaptly called the Premature. It is a fair bearer, especially in sheltered places, about the same size, more

juicy and delicious, and fully a fortnight earlier, than the universal favourite of the horticulturists, the Crawford. The Prematures brought from 16s. to 20s. a bushel (52 lbs.), while no person offered more than half a guinea for the Crawfords. Lemon pears sold from 12s. to 14s. a bushel. There were also a few early plums shown, but not so many as to render a notice of their price requisite. Grapes are an abundant crop, and as there have been very few dinners this season, the demand for them has been very limited. The gardeners considered themselves pretty well off who got their stock disposed of at a shilling a pound. (*Scotsman.*)

Sept. 1.—The best Hawthorndens and summer strawberries yesterday morning sold from 1s. 6d. to 2s. a peck, and the Lemon and Sugar pears brought the same prices. So plentiful were the universal favourites, the Crawfords, that they sold at from 1s. 2d. to 1s. 6d. a peck. Jargonelles sold from 2s. 6d. to 3s. 6d. a peck. Plums are making their appearance. Orleans brought 4d. and 5d., and Magnums 1s. 3d. and 1s. 6d. a dozen. Grapes were sold at 1s. 6d. and 1s. 8d. a pound. (*Scotsman.*)

Sept. 29.—So great is the crop in this neighbourhood, that the horticulturists complain they are getting no more for their Sovereigns and Ribstone Pippins, their Longuevilles and Yairs, than they used to do for the most indifferent apples and pears that cumbered their orchards. These fruits sell from 1s. to 2s. a peck. Magnums sell from 1s. to 2s. a dozen. Scotch damsons retail at 1s. the imperial quart, or about 6d. a pound; but the Burnets [?], the most useful of all plums, bring 2s. 6d. a peck, or about 3½d. a pound. Owing to the arrival of English and Welsh cargoes, the fruit is still cheaper in Glasgow than it is here. (*Scotsman.*)

Clydesdale Orchards.—During the last ten days the fruit in most of the Clydesdale orchards has been sold, in the usual way, by public roup. The sales were conducted under circumstances of a more cheering complexion than they were in 1826. Taken in the aggregate, the crop of apples and pears is double, and that of the Orleans and Whitton plums nearly triple that of last year; yet, nevertheless, so keen was the competition, and the bidders were so confident in the improving circumstances of the country, that the fruit brought about last year's prices. According to quality and other circumstances of minor importance, prices ran from 4l. to 5l. a boll. Fruits in general are about a month later than they were last season. Crawford pears, and the White or Early Fullwood apples, are the only sorts fully ripe, and so few of them have been brought to market, that the rates at which they are likely to be retailed are not yet ascertained. (*Scotsman*, Aug. 22.)

Apples and Pears in Glasgow are retailing at a halfpenny a pound; they are to be had of good quality at 1d. and 1½d., while the price of the very finest quality does not exceed 5d. English damson plums are retailing in the fruit-shops at 2d. per pound. The fruit merchants say that they do not remember fruit of all kinds ever being cheaper than it is this season. (*Scotsman*, Sept. 29.)

A Potato is at present growing in the garden of Mr. James Low, North Berwick, from a tuber that was planted whole, the stems of which cover closely a space of ground 6 feet 8 inches diameter, or 44 feet 5 inches 4 parts square. It is likely the gross produce will be made known to the public. Nine years ago an experiment of the same sort was tried by Mr. Dougald Campbell, head-gardener to Sir John Maxwell, when in all one hundred and one potatoes were turned up, which exactly filled a Lanarkshire peck, weighing of course 41 lbs. (*Scotsman*, Sept. 8.)

A single Grain of Wheat, thrown by accident over a hedge into a garden at Waterbeach last autumn, has produced thirty-eight ears, containing, on the average, fifty-one grains in each, or, in the whole, above *nineteen hundred fold!* (*Scotsman*, Aug. 22.)

So many wonderful Stalks of Oats have been sent us within the last fortnight, that, if the grain had been ripe, we would have thrashed it ourselves, and got new meal without delay. Two of these grew on Mr. Brown's farm of Bellriding, and contained, the one 301, and the other 280 pickles of grain. Another stalk, which grew at Carthagena, was upwards of seven feet in length, and was at the same time so bushy at the top, that we tired counting the individual pickles. But the crowning stalks of all were two which grew in a field on the estate of Cargen. Both were most beautiful, and would yield singly a return of five hundred fold. One of them, which we have preserved, is liker a young tropical tree than an ordinary stalk of potato oats. Near the root it measured one inch in circumference, and, as near as may be, a foot and a half betwixt the commencement and termination of the grain. The flag leaf is an inch and a quarter in breadth, and altogether we never witnessed such a gigantic specimen of what, according to Dr. Johnson, forms the food of men in Scotland, and of horses in England. (*Dumfries Courier*.)

A single Stalk of Berwickshire Oats, from the farm of Picketlaw, in the parish of Eaglesham, was sent us, having the extraordinary number of 317 grains. (*Glasgow Herald*.)

A Stalk of Oats was pulled on the farm of Lampits, parish of Carnwath, on which there were in all 470 grains. It was pulled on a patch of moss just brought under cultivation, and the whole crop is remarkably luxuriant. (*Scotsman*, Aug. 29.)

A Field of Barley was cut down at Camelon on the 23d of July, which is considered remarkably early for this rather backward season. (*Scotsman*.)

A Hydrangea, in the Garden of St. Mary's Isle, near Kirkcudbright, measures round the extremities of the shoots 32 feet, and shows 525 flowers. It was planted in the open garden by Mr. Nisbett three years ago, and the old wood has been annually cut to the ground. (*Dumfries Courier*, Aug.)

A Hydrangea in the Earl of Rosslyn's Gardens at Dysart House, measures round the extremities upwards of 40 feet, is about 6 feet in height, and displays not fewer than 605 flowers, many of which are 2½ feet in circumference! And this plant (though, like that at St. Mary's Isle, it has been several times cut down) is not more remarkable for its size than its general healthiness, the variety of colour in the flowers, which are for the most part exquisitely beautiful, and the uncommon luxuriance of the foliage. (*Scotsman*, Sept. 8.)

Hainault Scythe. — The most laudable exertions continue to be made, in different parts of the country, to introduce this instrument as a substitute for, or adjunct to, the sickle. In East Lothian an Irishman (Toner) has cut half a Scotch acre of wheat in a day, and at the rate of a Scotch acre of oats in eight hours. One peculiar feature of this mode of reaping is, that the lower, or nearer the surface, the crop is cut, so much easier is the work for the reaper. The United East Lothian Agricultural Society have adopted the very judicious mode of giving Toner a premium, on condition of his instructing such reapers as may choose to require his assistance, at the rate of 5s. a day. Hopes are entertained that in a few years this style of reaping will become general. (*Scotsman*, Sept. 29.) — The mode of cutting wheat with the sharpening hook, called bagging, and practised in the neighbourhood of London, is in effect exactly the same as the mode by the Hainault scythe; but as the operator with the sharpening hook has to stoop very low, it is performed at a greater waste of strength.

Calceolària purpurea, a new species (p. 196.), and *Nepénthes distillatòria* máscula, flowered in the Edinburgh botanic garden in August last. The latter plant was kept in the stove, and produced a very striking effect by supporting itself on the adjoining plants, and hanging from them its singular

pitchers. It gives off suckers, but not freely. (*Professor Graham in Jam. Jour.*, Sept. 1827.)

The Mustard Tree of the Gospel, like the moss of Solomon, has given rise to various conjectures. Linnæus thought it was the *Phytolacca asiatica*; Captains Irby and Mangles, and Mr. Bankes, great travellers in Egypt and Syria, found a plant which they thought was the mustard tree alluded to. Mr. Don, however, has examined specimens of this tree brought home by Mr. Bankes, and he finds it to be the *Salvadora persica*, *Lin.* (*Jam. Phil. Jour.*, March, 1827, p. 508.)

Mode of preserving Cabbages during the Winter.—When they have arrived at full maturity pull them up with the roots, reverse their crowns, and cover them up, by digging a trench on each side, and laying the earth over them till nothing but the roots are seen above ground. In this situation they will require much less ground, and the exposure of the earth of the ridgelets thus formed will be an excellent winter fallow. Before burying them, of course, all decayed leaves must be removed. In this way I have secured my winter supply for several seasons, and one season most providentially against an inroad of cattle, which in a few nights destroyed the whole winter stock of green vegetables, excepting a few dozen of the cabbages trenched in as above described. — *W. M. Argyleshire, Jan. 28. 1827.*

Mr. John Wallace, for some years past gardener to W. F. Riley, Esq., of Forest Hill, near Windsor, where he has formed the gardens and pleasure-grounds, has gone down to Murthly Castle, near Dunkeld, the seat of Sir George Stewart, of Grandtully, Bart., to assist his father in remodelling the gardens and grounds there. What we mention the circumstance for is to notice the fact of Mr. Wallace being one of the fourth generation of that name who have been successively gardeners to this family, Mr. John Wallace's great grandfather having commenced his services nearly 160 years ago. He planted the first larch trees in that part of Scotland, and was a journeyman at the Duke of Atholl's when the larch was treated as a green-house plant.

IRELAND.

Emigration Committee.—In our review of Mr. Slaney's work on Rural Expenditure, we offered some remarks on emigration, as a proposed plan for relieving the country of its surplus inhabitants. It may therefore be expected that we should consider the voluminous book which the Emigration Committee have put forth. This we shall do, but very briefly.

The Committee, of course, think that their proposal to ship off a certain number of people is, at least, likely to be of service; and some of the newspapers lean to the same favourable notion of the plan; others argue against it; a few laugh at it. We are, we must confess, surprised that this proposal could have been put forth, or approved of, by any man of common reflection or observation. Let us first suppose that a small number, three or four hundred thousand, are shipped off, by way of experiment: what is doubtful in the result must relate to Ireland, not to the expatriated. How long, then, are we to wait, till we know the result? How are we to judge whether it is favourable or otherwise? Suppose we wait one year, and judge of the result by ascertaining then whether Ireland is still as pressed down with miserable people as it was before the shipment took place. Can there be a doubt, that at the end of the year, there will be at least as many inhabitants as before: we say at least, because, the demand for inhabitants having increased, the supply will also increase.

And this is the great point: to illustrate it more impressively and clearly, let us suppose that the present population of Ireland is eight millions; that fifty years ago it was six millions, and that two millions could be shipped off

immediately—all at once. All these are certainly most favourable suppositions for the emigration philosophers. Ireland is thus brought back to her population fifty years ago. It increased, then, gradually till it reached eight millions: can any reason be pointed out why it should not increase again? Are there not many strong reasons why it would increase more rapidly—at a greater ratio—than it did fifty years since? Ireland is now better cultivated, there is more demand for labour; by the invention of steam boats, England and Scotland are virtually part of Ireland, and thus an immense addition is made to the market for Irish labourers: this last circumstance is a point of great moment, in considering the question. We have no doubt that the opening the market of England and Scotland to Irish labour will, of itself, increase Irish population at a greater ratio than it has hitherto done. And yet, as if this were not a sufficient aggravation of the evil, the Emigration Committee proclaim to the Irish: “Here is another vent for your surplus population; another market for your labour;—such of you as hesitate about marrying, afraid that neither the market of your own country nor that of Great Britain will afford you the means of keeping a wife and children, marry now, and we will not only open another market, such as cannot be overstocked, but send you there, free of expense; and make you there proprietors of land,—masters, not servants.”

Can it be doubted, then, that if this moment two millions were shipped off, they would be replaced much sooner than in fifty years, the period at which, by our supposition, the two millions were added, that raised the population to eight millions?

The Emigration Committee, therefore, purpose to hold out a bounty on marriage, in order to diminish population: truly, a most Irish proposal.

There is one mode, which, if practicable, might do good: let us suppose that it were ascertained that six millions could be supported comfortably,—let the number be reduced to that, all at once. Then, having also ascertained what would be the annual increase of the six millions, let a number equal to that increase be annually shipped off. This measure, of course, would always keep down the population to the level of comfortable existence. But, besides the impracticability of this measure, one of the data could not be accurately ascertained; because an accurate knowledge of the annual rate of increase in Ireland hitherto, when there have been only Irish markets for labour, will not point out what will be the rate of increase, when the additional market of Great Britain, and that proposed by the Emigration Committee are thrown open.

The principle, then, is bad; if acted on, it must encourage and increase the evil it is intended to diminish and check. And we repeat our surprise, how any man of reflection or observation,—any men who are either practical or theoretical political economists, should have suggested such a plan, or agreed to it. But it is a hobby, and, like that of reaching the North Pole, will probably be carried into effect, till its worthlessness and expense are ascertained not to be the least objectionable parts of it.

What plan, then, could we suggest? All agree that the evil, dreadful as it is, is yet in comparative feebleness; and that, if not strangled in its infancy, it will soon reach a giant's size and force, and strangle not merely national but individual prosperity. Irish labourers may be benefited,—their character as well as condition may be bettered by spreading over Britain; but, on the other hand, the character and condition of British labourers must suffer, and we are afraid, in the contest, they will descend much more than the former will rise.

As to the remedy, we repeat, it must necessarily be gradual, in order to be effective. Teach the Irish to marry less: for this purpose, teach them to consider plenty of good food as indispensable as they now consider a precarious and scanty meal of potatoes and milk; decent, clean, and whole clothes as indispensable as they now regard dirty rags; and a com-

fortable cottage as indispensable as they now consider a mud hovel. Above all, teach them to think; that is, teach them to look to the future: give them more wishes and wants, more expectations and hopes, and those of a higher nature; then they will marry less, and then the population, diminished in number, will obtain higher wages, and become more respectable and comfortable. What ought to be done, while the raising of the Irish character (for that must precede raising its condition) is carrying into effect, we do not pretend to say; but this we repeat, the plan of the Emigration Committee will end, if carried into execution, not in a permanent cure, not even in a partial and temporary cure, but in encouraging and aggravating the disease.

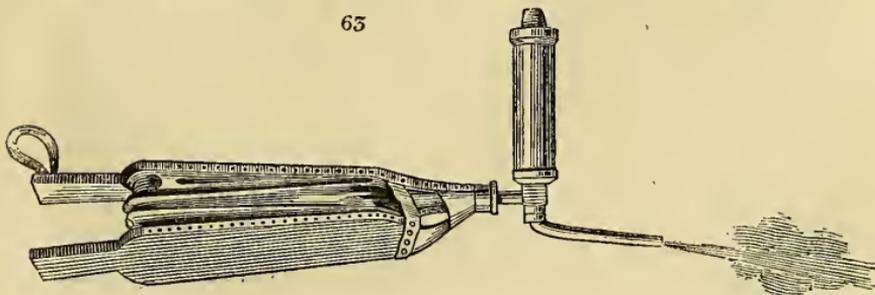
Farming Society. — Why has not Loudon regarded the Farming Society of Ireland, a Society which, since its institution, has given an augmented impulse to our national industry? Why has he failed to ornament his pages with the brilliant and truly patriotic names allied to the interests of the country? When he descanted on absenteeism, why did he not panegyrised the brightest ornaments of our resident nobility, who are connected with the Farming Society of the country? Unpardonable and egregious omission! (*Review of Loudon's Encyc. of Agr. in the Irish Farmer's Journal of December 10. 1827.*)

The Farming Society. — Whilst nature is doing so much for Irish agriculture, man is doing nothing to advance the fundamental knowledge of it as a science, or to stimulate its perfect practice as a national benefit. The Parliament grant has been withdrawn, and, it is believed, justly, from the Farming Society. The *Irish Farmer's Journal* has been discontinued, with a debt due to the concern of upwards of 2,000*l.*; and a plan for establishing a small experimental farm in the vicinity of Dublin has also fallen dead-born. The fact is, there is no public spirit to raise and sustain any useful institution of the kind; and, when legislative aid established the Farming Society on a basis to all appearance lasting and firm, it was crumbled away in private jobbing and corrupt patronage, so unprincipled and notorious, that, although the writer of this is as staunch a friend to the agriculture of his country as any Irishman can be, he would nevertheless regard the renewal of the Parliament grant, under the former management, as a measure worse than useless, and as tending to abstract money from the public coffers, to form the means of aggrandising those who perform no service in return. (*Brit. Farm. Mag., Aug. 1827*)

ART. III. Horticultural Society and Garden.

Aug. 7th. — *Read.* An account of a fumigating apparatus, by Mr. John Read of Bridge-House Place, Southwark. A cylindrical box is added to a pair of bellows (*fig. 63.*), which may be used either for fumigating, or

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throwing out powdered lime or sulphur, on the principle of the machine described by our correspondent C. P. (p. 30.)

Exhibited. A cucumber saved for seed, 25 in. long, and 10 in. in circumference. A model of Gregory's patent self-supported ladder. Read's fumigating bellows. A branch of the Hawthorndean Apple, with fruit on it. Twenty sorts of summer apples. White Nice Grapes.

Also, from the Garden of the Society. A plant in flower of *Linningia*, new species from Rio Janeiro. Flowers of Russian ten-week and autumn Stocks, of *Lilium superbum*, *Asclèpias tuberosa*, *Coreópsis tinctoria*, and of Double Dahlias. Fruit of Sugar-loaf Pippin, Morden Bloom Apple, Sweet Italian Melon, Smooth Valparaiso Melon, Brown Nutmeg Peach, Otaheite Pine-apple, King Pine-apple, Orange Apricot, Brussels Apricot, Shipley's large Apricot and Breda Apricot.

Aug. 21. — Read. On the destruction of the *Aphis lanigera* on apple trees, by Mr. Joseph Ashbany, gardener to Sir George Scudamore Stanhope, Bart. [The nurserymen find that a little oil effectually destroys this insect, and nothing can be more easily applied.]

Exhibited. Specimens, wrought and unwrought, of the stem of a Tree Fern, sections of which are used by the Chinese as pencil holders. Flowers of Indian Pinks and Seedling Double Dahlias, from the garden of Lord Abergavenny, at Eridge Castle, near Tunbridge Wells. Flowers of Double Dahlias. Flowers of a variety of the Scarlet running Bean. Six sorts of Pears, and thirty-three sorts of Apples, of which the best was the Duchess of Oldenburg. Dunmore Moor Park Apricots. Roman Apricots. Moor Park Apricots, and a branch loaded with fruit of the Quarrenden Apple. Bourdine Peaches, Black Hamburg and Leweston Syrian Grapes, and Queen and Black Jamaica Pine-apples. A Melon, unnamed, weighing 15 lbs. Black Hamburg Grapes. Seven sorts of Apples. Chelston Pippins.

Also, from the Garden of the Society. Flowers of Double Dahlias, *Lilium superbum*, *Asclèpias tuberosa*, *Coreópsis tinctoria*, French and African Marigolds. Autumn-flowering ten-week Stocks. Fruits of Mimm's and Gisborne's Plums. Turkey and Brussels Apricots, Seedling Nectarine, and twenty sorts of Apples.

Sept. 4. — Read. Reports upon the plants which flowered in the garden of the Horticultural Society at Chiswick, between March, 1825, and March, 1826, Part I. Hardy Plants, by Mr. John Lindley, F.L.S. &c.

Exhibited. Fruit of *Cárica papaya*, a Fungus (*Lycopèrdon Bovista*) from the garden of Mr. King of Chelsea, a Thermometer for a Pine Pit from Mr. Samuel Bregazzi of Derby (*fig. 61. p. 217.*); Indian Pinks, Tankerville Pippins, and Apples unnamed; Wheatear Carnations, a Seedling Plum, and ten sorts of Apples; various Flowers, Washington Plums (*p. 217.*), and a Plum unnamed; Mulberries and Black Hamburg Grapes; Bryanstone Gage Plum.

Sept. 18. — Exhibited. A plant in flower of a seedling *Prímula sinensis*, with white flowers, different from the one raised by Joseph Delafield, Esq., of Kensington. Two varieties of *Solànum*, from the Brazils; a plant in flower of *Geissomèria longiflora*; fifteen collections of Dahlias from as many private individuals, and collections of Dahlias from Messrs. Youngs of Epsom, Mr. Wood, Nurseryman, Oatlands, near Measfield, Sussex, and Mr. John Lee, F.H.S., of Hammersmith, forming one of the most splendid assemblages of this flower ever brought together. Five sorts of Oranges, Lemons, and Citrons; White Spanish Onions, from Mr. Barnard Saunders, nurseryman, Jersey; two kinds of Rock Cantaloup Melons, Brunswick Figs, Teton de Venus Peaches, White Nice and Black St. Peter's Grapes, Brown Beurré and Gausell's Bergamotte Pears; Small Orange Nectarines, six sorts of Nectarines and six sorts of Peaches, Miller's Mignonne Peach, and six sorts of Grapes; Raisin des Carmes Grapes, and

Black Hamburgh Grapes; *Pyrus Bollwilleriàna*, Dec., *Pollvèria*, Lin., from Mr. Thomas Gibbs of the Brompton nursery, F.H.S.; Nancy Apple, and two collections of Apples.

From the Garden of the Society. Flowers of China Asters, Autumn-flowering ten-week Stocks, and African and French Marigolds. Five sorts of Beets; Early Vienna Kohl Rabi, and Blue Kohl Rabi. Fruits of Black Jamaica and White Providence Pine-apples, four sorts of Peaches, Pitmaston Orange Nectarines, Chasselas Précoce Grapes, and twenty sorts of Apples.

Fête in the Chiswick Garden. — Sir, — Although a constant reader of the Gardener's Magazine, and necessarily occasionally dissenting from the opinions delivered in it, yet I have seldom found those of its conductor of a character at variance with good sense and moderation. I was, therefore, not a little astonished to find him, in his last number, advocating one of the worst of the numerous bad measures which have been resorted to by the Council of the Horticultural Society, to bolster up its extravagance and bad management; for I cannot, in justice, blame that Society for a measure in which the members were as little consulted as they are upon every other measure connected with the administration of its affairs. I refer to the fête, or afternoon's cold collation, given in the garden at Chiswick, on the 23d of July last.

In descanting upon such a prostitution of the grounds of the Society, and the impropriety of the Society, as one of your correspondents justly remarks, becoming the pander to the sickly appetite for amusement of the fashionable world, I might enlarge upon the folly of the whole transaction; or, admitting that it was proper, upon the illiberal, calculating, and paltry trading cunning in which it was conducted, and the true Venetian spirit with which the Council has since smothered every attempt at enquiry into the manner of treating the members of the Society on that occasion; as well as the spiritless forbearance of the members, in submitting to be trampled upon by the Council. But this letter is addressed to you, not to the Horticultural Society, of which I am almost ashamed to acknowledge that I am a member. Your conscience forces you to acknowledge that the deviation from propriety, in mixing up science, or, as you ought to have said, what is meant to be science, and fashion, strikes at first sight; and that the repetition of such fêtes frequently in the course of the season, would be reprehensible. "But what can be more harmless than such a fête once a year?" Now, Sir, answer me in the spirit of candour, on what grounds do you draw such a conclusion? If the garden, as the Council have assured the members, has not suffered, — if the receipts have more than paid the expenses, — and, if the Society, *proh pudor!* have pocketed a handsome surplus, for what can reprehension be incurred, if this fête should be given once a month instead of once a year? Are you alarmed for its effects upon the morals of the fashionable visitors to the garden on these occasions? or for the example of dissipation which it displays to the gardeners? or are you afraid that the repeated remonstrances of the more sober and thinking members of the Society, of those who are really in earnest and anxious to see the garden applied to the purposes for which it was originally intended, may become too loud to be drowned by the authoritative mandate of a vice-president, and lead to an open rebellion? Sir, if the thing would be bad were it repeated once a month, it cannot be good even if it be confined to once a year. I would ask you to say where, and at what period, has science ever thriven under the auspices of fashion? or can there be any union more monstrous than that which has been occasionally attempted between them? The Horticultural Society and its garden were established for purposes over which fashion ought to have no control; not only to supply the tables of the rich with the luxuries of the vegetable world from every quarter of the globe, but to add to the comforts of the poor, to naturalise in the garden of the cottager the less

luxurious but more valuable productions of Flora and Pomona, and to teach them how to make the best use of the spade and the watering-pot. I would ask you whether these objects are more likely to be advanced by the admission of 2,800 well-dressed persons, to promenade and eat ices and fruit in the garden, than by giving a free access to the garden to every member of the Society, allowing him to send to it, without reserve, every person eager for information on horticulture, at all times, and having those constantly in attendance who are able to give the information which is sought for, as well as specimens of whatever may be necessary to aid the enquirer in his researches, as far as the benefit of horticulture is concerned? Sir, I have been refused specimens from the garden of the Society, merely because they had not yet been described. I have been several years a member of the Society, and I know no more of its internal affairs than an utter stranger; yet, I have overlooked these evils from a desire to see it advance, even in a moderate degree, the great national object for which it was instituted; but can I remain longer silent when, instead of this, I see an immense revenue expended to very little purpose, and hear that even this, great as it is, must be eked out by converting the garden into a place of fashionable amusement?

You seem, Sir, to think that there is as much propriety in the Society breakfasting, as you term it, once a year in this garden, as dining in a tavern. This argument, Sir, is more specious than solid. In the first place, it was not the Society that breakfasted in the garden, but every one who could pay a guinea, provided they could pass muster before the tribunal of the *ladies patronesses*, and were not the wives nor daughters of Fellows to whose names, in the list of the Society, no asterisk is added, — persons who have no particular regard for horticulture; who went to the gardens not to examine the advancement of the art, or to hear of its prosperity, but merely to see and to be seen, and to obtain a subject for conversation in the fashionable coterie of the succeeding week. Sir, I am not fond of taverns nor of tavern-dinners, but I think one dinner of the Society, at the Freemason's Tavern, even dull as it has hitherto been, worth five hundred of the *fêtes* in the garden on the 25d of July. At the dinner, real gardeners are present; scientific men, capable of appreciating the labours of the Society, are present; the dessert which is displayed is examined as to its value in a horticultural point of view, as well as eaten; the conversation it excites is connected with the objects of the Society, and the meeting together of two or three hundred individuals, actuated by the same useful motives, gives an impulse to the future exertions of the Society, which it never can obtain from twenty times the sum which has been thrown into its treasury by the late *fête*. Horticulturists, Sir, may be as social and as gallant as any other description of men, but there is a *modus in rebus*, and a time for every thing.

You must forgive me, Sir, for differing from you, *in toto*, in your remark that "it is obviously allowable and praiseworthy to call in the influence of fashion as an auxiliary support to useful institutions; and it will not be denied, we think, that large assemblages are calculated to generalise the manners, the feelings, and the taste of those who compose them." Now, Sir, so far from believing that fashion is a useful auxiliary to such an institution as the Horticultural Society, I think the Society has been degraded by receiving any aid from such a source. The objects of the Society, if steadily pursued, are sufficiently important to insure its permanence and prosperity, and to obtain funds adequate to its support, if its affairs be administered with suitable economy. As to the effects of such *fêtes* on the morals and happiness of society, there would be little difficulty in refuting that part of your argument; but I have already dilated more than I intended, and shall now conclude, in the hope that your zeal for such exhibitions in our gardens may be allowed to cool for want of any future

opportunity to display it in defence of such a system. Wishing success to your very valuable Magazine, in objects more worthy of its pages than eulogies on the fête at Chiswick, believe me, yours, faithfully, — *Philo-Olitorum*.
London, August 8. 1827.

ART. IV. *Provincial Horticultural and Florists' Societies.*

THE Yorkshire Horticultural Society held their first September Meeting at Kirkstall Hotel, on September 5th, and a more magnificent display of fruits and flowers we never witnessed. The Rev. J. A. Rhodes, M. A., was in the chair, and, in addressing the company, said that, since last he had the pleasure of addressing them from that place, a meeting had been held in York, as was then announced to them, and he believed every expectation that could possibly have been formed of the advantage to be expected from that meeting had been fully realised. With respect to the present meeting, he said, the present display of fruit was the largest and handsomest ever placed upon any table in England, excepting perhaps London or Manchester, and he would proceed to distribute the prizes which the judges had awarded. This was done by the Rev. Chairman for all the different fruits grown in the open air or under glass, and for culinary vegetables, and dahlias and other flowers.

The thanks of the Society were voted by the Council, to Mrs. Dealtry of Lofthouse Hall, and to the Right Hon. Lord Grantham, for beautiful specimens of the *Psidium pomiferum*, &c., to F. Maude, Esq., Hatfield Hall, for a number of exotic plants; to W. F. Paley, Esq., Squire Pastures, for a dish of apples grown last year, in very high preservation; to Mr. Barrett, nurseryman, Wakefield, for eighty-two sorts of apples, thirty-one sorts of pears, and fifteen sorts of hollyhocks.

The following plants were exhibited from the gardens of Messrs. Backhouse of York: a *Fuchsia gracilis*, grown as a hardy plant, and which had stood two winters in the open air; a unique French marigold; a *Málope trifida*; a primrose of the *Prímula longiflora* kind, and an *Athanàsia ánnua*.

From the garden of F. Maude, Esq., a *Catálpa syringifolia* in flower, and a *Petùnia nyctaginiflora*, which was considered the rarest plant in the room.

Messrs. Ponteyes of Kirkheaton and Leeds exhibited specimens of the Fungeed(?) from Persia direct; also the tree variety of mignonette, which, without forcing, will remain in a room beautifully in flower through the winter; the latter specimen, being considered a great acquisition to the sitting-room, attracted much attention from the company. (*Encyc. of Gard.*, § 6487.)

The ceremony of dispensing the prizes being gone through, the Chairman called the attention of the meeting to the table before them, covered as it was with a rich profusion of fruits. Amongst so many candidates, he observed, some must be unsuccessful, but though they lost the prizes, the meeting would concur with him in saying they deserved well of the Society, because the strife had been most severe, and most unusually oppressive. This will fully appear when we state that the fruits on the table consisted of six pines, six melons, eleven dishes of grapes, fifteen dishes of peaches, seven of nectarines, three of apricots, twenty of plums, one of ripe Guava plums, fifty-two of apples, one dish containing eighty-two sorts, nineteen of pears, one dish containing thirty-one sorts, three of figs, two of cherries, three of gooseberries, two large gourds, four orange gourds, one dish of black American walnuts, a Patagonian cucum-

ber, and a vegetable marrow. The Rev. Chairman concluded with a eulogium upon Horticulture, as being the precursor of Agriculture.

The judges of fruit (excepting apples and pears) were, Mr. Appleby of Leeds, Mr. Hazlegrave of Wakefield, and Mr. Law of Roundhay; of apples and pears, Mr. Appleby of Wyndham, Mr. Barmer, gardener to T. W. Tottie, Esq., and J. Deuxberry, gardener to Abram Rhodes, Esq.; of flowers, Mr. Bradbury of Cardigan Place, Burley, Mr. Richard Bland of Otley, and Mr. John Teal of Chapel-Allerton.

It was then announced that the next meeting would be held on Wednesday, the 26th instant, in the Festival Concert Room, York, and soon afterwards the company separated. (*Yorkshire Gazette*, Sept. 8.)

The *Yorkshire Horticultural Society* held its second September Meeting at York on September 26th, when the display of fruits and flowers, the former in particular, exceeded any thing we ever before witnessed at a meeting of this description. Four tables were placed in the centre of the room, forming a square, in the centre of which, upon a stand, was a fine dwarf vine in pot, the Chasselas, with twenty-two bunches of grapes upon it, belonging to John Smith, Esq., of Hungate. On the table in front of the orchestra were four pines, twenty-seven dishes of grapes, some of them very fine ones, and four dishes of peaches. The table on the right contained five melons, twenty dishes of nectarines and peaches, a profusion of plums, apples, and pears, of various kinds; a specimen of the *Cactus Opuntia*, or Indian fig, from the Rev. T. C. R. Read of Sand Hutton; a dish of nectarine plums, very fine, also from Mr. Read; a dish of red currants, and another of white ones, with a plate of figs, from the garden of Mr. Thompson of Kirby Hall; the fruit of the passion flower, quinces, limes, oranges, &c. On the centre table there were thirty-six dishes of apples, with several rare exotics, amongst which, a splendid *Strelitzia regina*, from Major Yarrowburgh's of Heslington; a *Crassula falcata*, from Sir W. Milner's; an *Amarýllis*, from Mr. Cattell's, Bootham; and a *Phoenix dactylifera*, or date palm, from J. Smith, Esq., were much admired; a splendid exotic bouquet, in a China vase, also from Mr. Smith's, occupied the centre of this table. On the table upon the left were several very large gourds; one, sent by Mr. Sheriff Barber of Tong Hall, weighed upwards of five stone. The dahlias for prizes, together with some remarkably fine China-Asters, from Mrs. Thompson's garden, at Skelton; and Messrs. Backhouse's of York; and a beautiful exotic bouquet, also from Messrs. Backhouse's, containing twenty-six species of plants, were placed upon this table. There were two tables behind the centre one. The first was covered with culinary vegetables, of which the celery was the finest we ever saw; the carrots, turnips, cucumbers, onions, and cabbages were also very fine specimens. In the centre of the next table, directly in front of the gallery, was placed a hardy bouquet from Messrs. Backhouse's; it was fifteen feet in height, and contained a great number of specimens: there were also ten exotics, in pots, placed here. To the right of these tables stood a superb specimen of the *Ficus elástica*, from Mr. Smith's, and several other plants in pots: and on the opposite side were a hardy bouquet, very tastefully arranged, sent by Martin Mensford, gardener; a fine specimen of the coffee tree, from Mr. Smith's; and a very fine rhubarb plant in pot. There were in all one hundred and fifty-three dishes of fruit; twenty-eight different kinds of vegetables; about forty specimens of exotics in pots; and a great variety of fruits. The orchestra remained decorated with laurel and flowers, as upon the occasion of the Duke of Wellington's visit.

The doors were opened for the admission of company at two o'clock; and shortly after, on the motion of the Rev. T. C. Read, seconded by Colonel Croft, Fras. Cholmeley, of Brandyby, Esq., was called to the Chair.

The Chairman said, he begged leave to congratulate the company upon the splendid show which was now before them. He had not the advantage of being present at the last meeting; but he understood it was far exceeded by the present one, both as to the display of the fruits and flowers, and likewise in the attendance of ladies and gentlemen. There were also, he was informed, much more numerous contributions from the gardeners in the neighbourhood of York; and, though doubts were at first expressed, he hoped the Society might now be considered fully established. As Mr. Nicoll at the last meeting had explained the objects of the Society, it was not necessary that he should say any thing on this subject. They all knew the advantage which horticulture derived from the Society in London; and he hoped this would be no unworthy representative of it in Yorkshire.

The prizes were then awarded for a great variety of fruits and flowers.

There was no prize awarded for China-Asters, but the best in the room were from Mrs. Thomson's garden, at Skelton. The Chairman also begged leave to call attention to a very fine cockscomb, from the garden of the Hon. and Rev. Mr. Dawnay. The Society feels deeply indebted to Mr. Smith of this city, for the very handsome and rare plants he sent to decorate the room; and also to Messrs. Backhouse and Co., for their contributions in fruit and flowers.

Mr. Smith, besides the plants we have mentioned, sent the following:—*Hedýchium coronárium*, *Acácia lopántha*, *Cápsicum frutéscens*, *Xylophýlla latifólia*, *Maránta bicolor*, *Ardísia excélsa*, and *Cypèrus alternifólius*.—Messrs Backhouse sent specimens of the following exotics, in pots:—*Sálvia spléndens*, *Solánum laciniátum*, *Prímula sinénsis álba*, *Lechenaúltia formósa*, and *Senécio élegans*. A remarkably fine specimen of the Shark-tooth Aloe was sent by Mr. G. Earl of York.

Amongst the company were noticed some of the first families of the city and neighbourhood, who seemed much pleased with the proceedings of the day; and we have no doubt they will look forward to the next meeting, which will take place early in the spring, with great interest. Mr. Slater of Yeadon again attended with his netting for the protection of fruit trees. Specimens of it were displayed in front of the orchestra, and it seemed to be much admired. (*Yorkshire Gazette*, Sept. 29.)

The *Botanical and Horticultural Society for Durham, Northumberland, and Newcastle-upon-Tyne* held a meeting in Newcastle on June 29th, when four gold, five silver medals, and one of bronze were awarded to different gardeners. A silver medal was awarded to Mr. James Tindal, gardener, Beaufront, for an essay on the culture of the vine. The meeting was as usual most respectably and numerously attended, and the tables covered with a profusion of flowers and fruits in high perfection. The interest evinced by the visitors evidently increases with the increasing beauty and excellence of these charming exhibitions. (*Newcastle Cour.*, July.)

At *Hexham* a meeting of the above Society was held on the 26th of June, for the convenience of members residing in that neighbourhood, when various prizes were awarded. The flowers and fruits, especially the roses and prize cherries and strawberries, were most beautiful, and of first rate quality. Several very beautiful seedling pinks, and some seedling roses, were exhibited by Mr. James Scott of Sandoe, many of them equal to some of our named flowers. This exhibition far exceeded the expectations of the warmest friends of the institution, and no doubt, ere long, the shows that may be appointed to be held at Hexham will rival the splendid exhibitions of the Society at Newcastle; and it must be highly gratifying to the Committee to find that their efforts to encourage the practice of horticulture in that neighbourhood have been so well seconded by the lovers of that delightful pursuit, as the above very fine exhibition, and the accession of new members, amply testified.

At *Alnwick* a meeting of this Society is to be held in September. (*Newcastle Courier*, July 6.)

The *Anniversary Meeting of this Society* was held at Newcastle on August 11th, when the Right Rev. the Lord Bishop of Durham was unanimously chosen patron of the Society for the county of Durham, *vice* the late Bishop of Durham, deceased, and Matthew Bell, Esq. M. P., was elected president for the ensuing year. The prize medals were then delivered to the successful competitors during the past year; and afterwards the members and visitors sat down to a sumptuous dinner. The table was handsomely decorated with flowers, and the dessert was superb, consisting of pines, melons, grapes, peaches, and all the fruits of the season, in profusion, from the gardens of gentlemen belonging to the Society. (*Newcastle Cour.*, Aug. 18.)

A *Meeting of the Botanical and Horticultural Society* was held at Newcastle on September 7th, when the Society's silver medals were awarded to different gardeners. The exhibition of fruits, consisting of seventy dishes, was extremely beautiful, and all of very superior quality; the flowers, especially the dahlias, which excited universal admiration, were also very fine. The exhibition, after the prizes had been determined, was honoured by the presence of a very large concourse of ladies and gentlemen of the first respectability. (*Newcastle Courier*, Sept. 15.)

Preston Horticultural Society. — The flower show on August 1st was, we are most happy to say, as fully and as fashionably attended as any we have before witnessed. The preceding meetings for the season have in every instance, we believe, taken place on days of incessant rain; but on this occasion the weather was fortunately most propitious, and the consequence was a very considerable assemblage of the neighbouring gentry, in addition to the very many respectable families residing in the town, who give their patronage and support to this most useful Society. As the meeting of Wednesday will probably be the last for the year, it gave us much pleasure to see the labours of the Committee winding up with so much satisfaction both to themselves and to the public. The display of carnations was beautiful, whilst of green-house and other plants there was exhibited an admirable collection, amongst which by far the most conspicuous was a magnificent *Campánula pyramidalis*, from the garden of J. Swainson, Esq., and measuring no less than seven feet two inches in height from the surface of the earth. There was fruit also in abundance, and of the very finest quality. The most attractive object in this department was the remarkably fine pine-apple (weighing upwards of six pounds) sent from the garden of Le Gendre N. Starkie, Esq. M. P., at Huntroyd, and raised by Mr. Morrell, that gentleman's gardener. Prizes were given for the following carnations and hardy plants:—

Carnations. Scarlet Bizards: Rising Sun, Triumphant, Lord Bagot, Achilles, Optimus Seedling, Eclipse Seedling. *Crimson Bizards:* Rainbow, King Alfred, Duke of Kent, Duke of Devonshire, Summit of Perfection, Hero of the Nile Seedling. *Purple Flakes:* Princess Charlotte, Major Cartwright, La Belle Alliance, Bellerophon Seedling, Lord Byron. *Scarlet Flakes:* Salamander, Atlas Seedling, Mount Vesuvius Seedling, Mount Etna Seedling, Hobhouse. *Rose Flakes:* Lady Hood, Duchess of Devonshire, Lord Essex, Parnassus Seedling, Earl Moira.

Picotees. Purple: Cleopatra, Emma, Lady Milton, Lady Chatham, Bob's Nought. *Scarlet:* Magnificent, Will Stukely, Childwall Beauty, Phyllis, Baldwin's Seedling.

Plants. Green-house: *Panocrátium mexicanum*, *Crássula coccínea*, *Tecóma grandiflora*, *Elichrysum prolíferum*, *Clèthra arborea*. *Hardy:* *Magnòlia grandiflora ferruginea*, *Campánula pyramidalis*, *Ròsa índica ochroleuca*, *Cenóthera macrocarpon*, *Potentilla hírta*, *Spigèlia marilandica*, *Erica vulgaris álba*.

Prizes were also given for Mr. Morrell's pine-apple, and for various fruits and culinary vegetables. (*Preston Pilot*, Aug. 4.)

Horticultural Societies at Northampton.—Dear Sir, — Having been favoured with a sight of your valuable Magazine, I was much gratified with the accounts given of the various horticultural meetings. I feel much pleasure in sending you the enclosed account of the four different Societies held in this town, the Original, the Royal, the Loyal, and the Florists' Horticultural Societies; and I shall at all times be happy to do all in my power to aid your endeavours in publishing so useful a work. It is truly gratifying to me to know that horticulture is making such rapid strides all over the world, though I consider it is still in its infancy. I have studiously practised the art of cultivating and propagating the beauties of nature for near forty years, and I feel assured the more zealously I trace the footsteps of Flora, the more I shall enjoy of her rich store; and I am fully persuaded that by perseverance in sowing seeds of the choicest flowers, *carnations in particular*, such an infinite variety of new sorts will appear, that in fifty years hence those exquisite beauties, which now give us so much pleasure, will be scarcely considered worthy a place in our common borders; at least, many kinds which were thought beautiful when I began to grow them, are now considered as worth nothing. I would advise my brother florists, of whom I have the pleasure to be acquainted with many in various parts of England, to pay a little more attention to neatness and uniformity in their gardens; for, where that is neglected, the choicest collections of any kind of plants or flowers lose much of their splendour. I remain, dear Sir, yours, &c.—*P. Cornfield.*

The Original Horticultural Society of Northampton founded by Mr. Cornfield, held their thirty-first anniversary, August 2d, when numerous prizes were given away for flowers and fruits. The following carnations and picotees obtained prizes:—

Carnations. Scarlet Bizards: Thompson's Squire Cartwright, Glover's Regulator, Yeomanson's Triumphant, Smalley's Foxhunter, Duke of Grafton. *Crimson Bizards:* Cartwright's Rainbow, Davy's Rainbow, Messenger's Duke of Wellington, Gregory's King Alfred, Plummer's Lord Denbigh, Yeomanson's Magnificent, Mr. Canning Seedling. *Rose Flakes:* Fletcher's Duchess of Devonshire, Messenger's Miss Gunning, Cornfield's My Laddy O!, Rivers's Incomparable, Miss Bouverie Seedling. *Scarlet Flakes:* Pierson's Madam Mara, Thornicroft's Blucher, Sir R. Gunning, Lord Althorp Seedling. *Purple Flakes:* Hall's Major Cartwright, Kenny's Excellent, J. Allen's Earl Spencer, Adwin's Princess Royal, Wright's Duchess of Manchester, Wood's Commander-in-Chief, Mr. Peel Seedling.

Picotees. Red: Martin's Miss Bouverie, Spratt's Earl of Effingham, Alderman Brown Seedling. *Purple:* Mason's General Mina, Martin's Mrs. H. Gunning, Bailey's Beauty, Messenger's Favourite Seedling.

The Northampton Royal Horticultural Society, Mr. J. Freeman, secretary, held their seventh Anniversary on July 31st, and awarded prizes for carnations, picotees, and gooseberries:—

Carnations. Scarlet Bizards: Davy's Sovereign, Yeomanson's Triumphant, Gunning where he is Seedling. *Crimson Bizards:* Cartwright's Rainbow, Duke of Wellington, General Hill. *Scarlet Flakes:* Blucher, Messenger's Setting Sun, Rising Sun Seedling. *Purple Flakes:* Kenny's Excellent, Adwin's Princess Royal, Boyle's Lord Ashbrook, Hon. Mrs. Perry Seedling. *Rose Flakes:* Duchess of Devonshire, Strong's Princess Augusta, Hon. Mrs. Canning Seedling.

Picotees. Red: Earl of Effingham. *Purple:* Bailey's Beauty, Lady Compton, Mrs. H. Gunning.

Gooseberries. *Red:* Top Sawyer, 15 dwts. 23½ grs.; Crown Bob, 15 dwts. 6½ grs. *Yellow:* Golden Chain, 15 dwts. 6½ grs.; Viper, 10 dwts. 8 grs. *Green:* Ocean, 14 dwts. 9 grs.; Laurel, 10 dwts. 1½ grs. *White:* Queen Anne, 16 dwts. 10 grs.; Huntingdonshire Lass, 15 dwts. 6 grs.; Whitesmith, 12 dwts. 17 grs.

For cucumbers, currants, and Hamburgh heart cherries, prizes were also given.

The Loyal Northampton Horticultural Society held their first Anniversary Meeting at Northampton on July 26th, Sir Robert Henry Gunning, Bart., perpetual president, in the chair; the secretary, Mr. J. P. M. Chambers. Prizes were given for carnations, picotees, cloves, gooseberries, currants, and cucumbers.

The Bizards of the first class were: Plummer's Lord Moira, Thompson's George the Fourth, Mason's Lord Compton, Smalley's Foxhunter, Yeomanson's Triumphant.

The Picotees of the first class were: Wood's Harmony, Mason's Neat and Clean, Spratt's Earl of Effingham, Cornfield's Lady Miller, Spratt's Earl of Effingham, Maberly No More Seedling.

The Red Gooseberries of the first class were: Rough Robin, 16 dwts. 19 grs.; Sportsman, 16 dwts. 9 grs.; Roaring Lion, 14 dwts. 18 grs.; Crown Bob, 14 dwts. 16 grs.

The Annual Florists' Feast of Northampton was held August 6th, and prizes were adjudged for the following flowers:—

Carnations. *Scarlet Bizards:* Cartwright's British Hero, Smalley's Foxhunter, Glover's Stourbridge Regulator, Yeomanson's Triumphant, Thompson's Cartwright. *Crimson Bizards:* Lord Denbigh, Thompson's Sir John Miller, Messenger's Duke of Wellington, North's King Agrippa, Mason's George the Fourth. *Scarlet Flakes:* Blucher, Madam Mara. *Purple Flakes:* Messenger's Alderman Brown, Duchess of Manchester. *Rose Flakes:* Duchess of Devonshire.

Picotees. Martin's Incomparable, Earl of Effingham, Mrs. H. Gunning, Bailey's Beauty.

Seedlings. *Scarlet Bizard:* Commander in Chief. *Crimson Bizard:* Van Trump. *Scarlet Flake:* Isabella. *Purple Flake:* Mr. Braham. *Rose Flake:* Roaring Lion. *Picotee:* Mr. Denman.

Gooseberries. The heaviest gooseberry was the Crown Bob, which weighed 15 dwts. 15 grs.

Mr. Cornfield is a fancy florist and dealer in florist's flowers at Northampton. Having heard much of him for several years past, and being the other day at Northampton on business, I called on Mr. Cornfield, and, on my first entrance into his garden, was much struck with the novel and tasteful manner which he has in displaying to the best advantage his fine collection of carnations, picotees, pinks, and auriculas, the whole in perfect health and vigour, and the layers of the carnations finely rooted. I requested him to send you some particulars of his mode of treating his plants, as his flowers are allowed to be remarkably fine, and he has promised to comply with my request. He also showed me the beautiful new stage for showing the prize flowers at the annual show of flowers and fruits at Northampton; it is placed in the superb Assembly Rooms at the George Inn, and is a beautiful model for the imitation of other florists' societies to adopt for the exhibition of their flowers. The stage, with all its appendages and emblematical figures of floriculture and horticulture, was made under the immediate direction of Mr. Cornfield. I have requested him to send you a description of it, as it is certainly the most complete thing of the kind in England, and does much credit to the taste of one to whom the sons and daughters of Flora are much indebted, for many improvements in the art of showing the beauties of nature to the

best advantage. I am, Sir, &c.—*James Brown. Stowe Gardens, Buckingham, Sept. 26. 1827.*

The Richmond Florists' and Horticultural Society held their Annual Meeting at Richmond, on the 9th August, when prizes were awarded for the following articles:—

Carnations. Scarlet Bizards: Pugh's Lord Nelson, Brough's Sparkler, Wild's Surpasses Perfection, Wood's Lord Nelson, Dr. Syntax, Col. Bailey. *Crimson Bizards:* Prince Leopold, Gregory's Alfred, Waterhouse's Rising Sun, Cope's Suwarrow. *Scarlet Flakes:* Pearson's Rising Sun, Madam Mara, Wood's Comet, Thornicroft's Blucher. *Purple Flakes:* Wright's Duchess of Manchester, Hufton's Noble, Duchess of Gloster, Kenny's Excellent, James's Queen, Hardwin's Princess Royal. *Rose Flakes:* Clegg's Smiling Beauty, Duchess of Devonshire, Pearson's Earl Moira, Metcalf's Miss Lander, Hardman's Lady Wellington, Lacey's Princess of Wales.

Picotees. Scarlet: Pyke's Nonpareil, Spratt's Earl of Effingham, Child-wall Beauty, Will Stukeley, Kenny's Incomparable. *Purple:* Hufton's Duke of Norfolk, Beauty of Bailey, Mason's Duke of Wellington, Lee's Col. Stanton.

Gooseberries. Red: Sir John, 22 dwts. 10 gr.; Roaring Lion, 22 dwts. 1 gr.; Huntsman, 21 dwts. 21 grs. *Yellow:* Gunner, 21 dwts. 10 grs.; Viper, 16 dwts. 5 grs. *Green:* Independent, 16 dwts. 5 grs.; Ocean, 15 dwts. 8 grs. *White:* Thrasher, 18 dwts. 11 grs.; Wellington's Glory, 14 dwts. 15 grs.; Cheshire Lass, 15 dwts. 5 grs.

Prizes were also given for grapes, nectarines, peaches, apricots, cherries, strawberries, and pears.—*J. Ward. Richmond, Yorkshire, Aug. 10.*

The Evesham Horticultural Society held a Meeting on September the 14th, which was very abundantly supplied with specimens of the most interesting objects under floricultural and horticultural cultivation, and prizes were awarded for dahlias, cockscombs, damson plums, peas, carrots, and onions.

Two books on botany (?) presented by the President were awarded, the one to Mr. Fulton, for the best show of flowers, and the other to Mr. Hayward, for culinary vegetables. The President exhibited the Wellington Apple, the Early Knob-rooted Celery, and a variety of potato, received from Holland in May last. An unnamed seedling apple and nectarine, melons, and several varieties of vegetable marrows and ornamental gourds were also exhibited; and the President read a detail of those improvements in horticulture, recommended by the Horticultural Society of London, which he thought most applicable to the practice of cultivation in the neighbourhood. (*Worcester Herald, Sept. 22.*)

Hereford Horticultural Society, May 15.—I think it will be gratifying to you to hear that our Fruit and Flower Society, considering it commenced only last year, advances prosperously. The distinguished President of the London Horticultural Society and his son, with nearly all the nobility and gentry of this county and city, patronise it, but its formation and subsequent success is mainly attributable to the indefatigable exertions of the hon. secretary, Richard Parkinson, Esq., and his lady.—*William Godsall.*

The Hereford Horticultural Society held their last Meeting for the present year on September 4th. It was numerously attended, and exhibited a most abundant and rich display of fruit and flowers, far surpassing that of the corresponding season last year: indeed, such was the abundance of fruit, that by ten o'clock the plates of the Society were all in requisition, and many of the subscribers in the immediate neighbourhood kindly supplied others to the amount of several dozens. T. A. Knight, Esq., President of the London Horticultural Society, sent many very fine specimens of Belgic pears, which were greatly admired. That gentleman honoured the commit-

tee-room with his presence early in the day, but a pre-engagement prevented his remaining in town till the exhibition commenced, he however expressed his delight at witnessing the quantity and quality of the fruit. Amongst pears, the Belgic, Colmar, Crassane, Bergamotte, Beurrée, with their varieties, shone conspicuously, as did also the apples, among which were many new varieties; and, as to the dahlias, they were profusely abundant and magnificent in the extreme, including all the best new ones. At the top of the prizestand was a most splendid plant of *Salvia splendens*, upwards of seven feet high, nearly covered with its intensely vivid scarlet blossoms, surrounded by more humble competitors but equally rare; viz. a new scarlet-fruited *Solanum Melongèna*, *Trevirana coccinea*, *Crówea saligna*, with many others of great rarity. The vegetables were also remarkably fine, particularly a variety of white beet, blanched, which attracted general attention. Prizes were awarded for the following articles:—

Apples. Early Dessert: Grange Apple, Red Quarrenden. *Late Dessert:* Ribstone Pippin, Green Nonpareil, Garnons Apple. *Culinary:* Blenheim Orange, King of the Pippins. *Cider:* Fox Whelp, Cowern Red, Norman.

Pears. Early Dessert: Gansel's Bergamotte, Poir du Prince. *Late Dessert:* Brown Beurrée, Crassane, Chaumontelle. *Perry:* Seedling, Old Field, Bishopstone.

Plums. Coe's Golden Drop, Imperatrice.

Grapes. Black Esperione, Royal Muscadine.

Dahlias. Light: Speciosa, Quilled Lilac Seedling. *Dark:* Beauté Suprême, Velvet Cushion.

Plants. Green-house: *Salvia splendens*, *Encòmis punctata*. *Stove:* Scarlet *Solanum Melongèna* (*Hereford Journal*, Oct. 10.)

ART. V. Covent Garden Market.

THE supply of fruit and vegetables has been, and continues to be, abundant. From the favourable summer, various fruits made their appearance rather sooner than usual, and, though in high perfection, it is apprehended that they, apples in particular, will not keep well. Pine-apples, both home-grown and foreign, never were more plentiful, selling so low as 3s. 6d. per pound; but the glut being now over, they have advanced to 9s. and 10s. Melons and wall fruit have been equally plentiful and cheap. In addition to the home-grown grapes, considerable quantities are weekly received from Holland and the Netherlands of superior quality, which are selling at the low price of from 1s. 6d. to 1s. 9d. per pound. Apples and inferior pears sold from 3s. to 4s. per bushel wholesale; and filberts, walnuts, &c., are poured in even above the demand. — *J. G. Oct. 20.*

ART. VI. Priced List of Florist's Flowers.

THE following list has been sent us by Mr. Hogg of Paddington, as containing some of the finest prize or show flowers, with the prices for which they may be obtained in the neighbourhood of London. Mr. Hogg's priced catalogue, in one sheet, to be sent as a single letter, may be had of Messrs. Longman and Co., price 6d.

AURICULAS.

	s.	d.		s.	d.
<i>Green-edged.</i>					
Archer's Champion - -	5	0	Kenyon's Ringleader - -	4	0
Ashworth's Newton Hero -	10	0	Pearson's Liberty - -	7	0
Barlow's King - -	5	0	Pendleton's Smiling Violet -	4	0
Bearless's Superb - -	4	0	Rider's Waterloo - -	5	0
Booth's Freedom - -	20	0	Sykes's Complete Flower -	25	0
Buckley's Jolly Tar - -	4	0	Simpson's Marquis of Granby	7	0
Clough's Do-little - -	10	0	Slater's Cheshire Hero - -	4	0
Clough's Bagslate Hero -	10	0	Thompson's Bang-up - -	7	0
Cockup's Eclipse - -	4	0	Thompson's Revenge - -	5	0
Clegg's Black and Green -	7	6	Taylor's Ploughboy - -	5	0
Clegg's Lancashire Lad -	10	0	Warris's Union - -	7	6
Chilcott's King - -	4	0	Waterhouse's Sir Walter		
Coldham's Blucher - -	7	0	Fawkes - -	10	0
Egerton's Lord Combermere	7	6			
Gorton's Champion - -	4	0	<i>White-edged.</i>		
Hedge's Britannia - -	20	0	Bruce's Lord Chief Justice -	5	0
Howard's Lord Nelson - -	7	0	Crompton's Admiral Gar-		
Lee's Colonel Taylor - -	60	0	dener - -	4	0
Lawrie's Glory - -	15	0	Hughes's Pillar of Beauty -	3	0
Miller's William Pitt - -	10	0	Leigh's Venus - -	4	0
Mather's Brilliant - -	10	0	Popplewell's Conqueror -	3	0
Moore's Jubilee - -	5	0	Pott's Regulator - -	5	0
Metcalf's Lancashire Hero -	3	0	Scholes's Mrs. Clarke - -	5	0
Pollit's Highland Boy - -	4	0	Taylor's Glory - -	5	0
Pollit's Ruler of England -	10	0	Taylor's Incomparable - -	5	0
Page's Champion - -	10	6	Taylor's Princess Royal - -	6	0
Page's Oldenburgh - -	7	0	Taylor's Favourite - -	15	0
Page's Waterloo - -	15	0	Wild's Cottage Girl - -	5	0
Partington's Trafalgar - -	5	0	Wild's Black and Clear - -	4	0
Pearson's Badajoz - -	5	0			
Robinson's Queen Caroline -	10	0	<i>Plain, or Self-coloured.</i>		
Stretch's Alexander - -	5	0	Ancient Lady - -	5	0
Smith's Waterloo - -	15	0	Bury's Lord Primate - -	4	0
Smith's Alexander - -	10	0	Bury's Lord Lee - -	5	0
Tomlinson's Commander - -	10	0	Cardinal Fleury - -	4	0
Wood's Lord Lascelles - -	5	0	Flora's Flag - -	4	0
Warris's Blucher - -	5	0	Gorton's Stadtholder - -	7	6
Waterhouse's Sir I. Newton	10	0	Redman's Metropolitan - -	7	6
Wild's Colonel Anson - -	5	0	Scholes's Ned Lud - -	5	0
Yates's Lord Collingwood -	5	0	Whittaker's True Blue - -	5	0
			Wild's Blue Crystal - -	4	0
<i>Grey-edged.</i>			<i>Shaded Alpines.</i>		
Ashworth's Rule-all - -	4	0	Alderman - -	4	0
Ackerley's Alpine Shepherdess	5	0	Beauty of the Alps - -	4	0
Barlow's Morning Star - -	5	0	Beauty of England - -	4	0
Barlow's Lancashire Lad - -	7	6	Bishop of London - -	5	0
Butterworth's Lord Hood -	4	0	Howe's Venns - -	4	0
Chilcott's Brilliant - -	4	0	King of the Alps - -	5	0
Coxe's British Hero - -	5	0	Moses - -	4	0
Dean's Regulator - -	4	0	Pharaoh - -	5	0
Grimes's Privateer - -	4	0	Royal George - -	5	0
Hey's Lovely Ann - -	5	0	Vesuvius - -	4	0

POLYANTHUSES, at 2s. 6d. each, with the exception of those to which other prices are affixed.

Billington's Beauty of Over.	Mill's Highland Mary.
Buck's Marquis of Anglesea, 20s.	Massey's Venus.
Buck's Traveller.	Nicholson's Gold-lace.
Brown's King.	Nicholson's Bang-Europe, 20s.
Cox's Regent.	Park's Lord Nelson.
Collier's Princess Royal, 10s.	Pearson's Alexander, 7s. 6d.
Crownshaw's Invincible, 15s.	Pearson's Competitor, 5s.
Cartwright's True Briton.	Pearson's Commander.
Cutler's Duke of York.	Stead's Telegraph.
Fletcher's Defiance.	Stead's Supreme.
Fletcher's Lord Hill.	Thompson's Lord Nelson.
Fillingham's Tantararara.	Thorp's Golden Ball.
Hattersley's Invincible.	Turner's Emperor Bonaparte.
Heap's Similer.	Turner's Princess Charlotte.
Harley's Defiance.	Timmis's Defiance.
Hobson's Victorious.	Waterhouse's Bishop of York.
Lee's Sly Boys, 5s.	Washington's Black Boy.
Lumbard's Highlander, 5s.	Willat's Beauty of Coventry.
Martin's Prince Henry.	

ART. VII. *Hints for Experiments.*

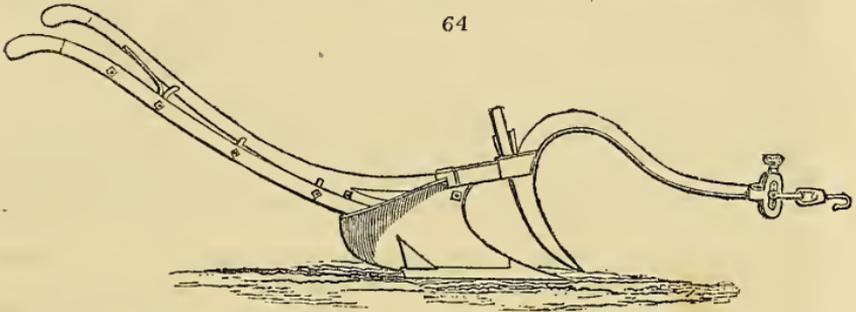
THE Application of Steam to Agriculture has hitherto been confined to putting in motion some thrashing machines: but, as steam will probably in a short time be applied to the dragging of heavy waggons on the public roads, the succeeding step will not unlikely be its adaptation to the implements of aration.

The advantages of ploughing and harrowing by steam promise to be considerable in every country, but especially in an uncertain climate. The soil can only be stirred with advantage when in a moderately dry state, and in dry weather. To enable a large farmer to accomplish this, he must keep a considerable stock of horses and men, which in unfavourable weather cannot be employed, but must be fed and lodged. A steam plough, guided by one man, which could do the work of six pair of horses and six men, would cost nothing but during the hours it was in action: there would, therefore, be no temptation on the part of the farmer to use it in bad weather. Any agricultural implement drawn by horses can only move at a certain rate per hour; but a steam plough or harrow might be made to move at any rate of rapidity, and, at all events, at three times the rate of a plough and pair. The advantage of such a rapid mode of stirring the soil in a variable season in any country, and in rapid climates such as those of northern and tropical countries, will be appreciated by the agriculturist. In short, the power of steam would give the cultivator an unlimited command of labour at the moments favourable to labouring; and fifty acres a day might be ploughed with one machine and one man, as easily as they are now ploughed by fifty days' work of one plough, or ten days' work of five ploughs.

The sort of implement best adapted for stirring the soil by the power of steam is the next idea that presents itself. Every cultivator, we think, will agree that it must be some implement of the grubber kind (*Encyc. of Agr.*, § 2533.), and by far the best of these is what is called Finlayson's Harrow. (*Gard. Mag.*, vol. ii. p. 250. fig. 66.) This implement may be enlarged so as to cover any breadth, and regulated so as to go to any depth; and the

latter object is effected to such a nicety, that it has been used on the same farm to harrow in grass seeds, and to grub or stir the soil to the depth of twelve inches. Those who have not seen an implement of the grubber kind at work may question its fitness as a substitute for the plough; but, where the soil is dry and the grubber can be dragged across it in different directions, it will not only equal but far surpass the plough in every case in which littery manure is not to be ploughed in, or a tough sward to be turned over. The effectual manner in which this implement mixes the top and bottom of the soil together, and breaks all the parts of the soil to pieces, was completely shown last year in that part of Hyde Park submitted to its operations under the direction of Mr. Shedden, the surveyor. We understand the whole of the Park is to undergo the same process next year, and we should certainly like to see the power of steam tried instead of horses.

But how is manure to be ploughed in, or a turf sward to be turned over, by the power of steam? Instead of the prongs of Finlayson's harrow, substitute the self-cleaning coulter and shares of his self-cleaning plough (*fig. 64.*), regulated as to depth by wheels. Any number of these will work



together without a holder, just as well as any number of prongs. Nothing can be easier than to construct a steam plough with the shares and mould boards contrived so as to shift and adjust, for the purpose of forming drills or ridgelets, and splitting them down; and the harrow, with a rake attached, and some other easy contrivances, and two attendants, might be made to unearth a field of potatoes, collect them, and deliver them into baskets or sacks, (the same, as to stones or weeds,) which, as filled, might be put into carts, at the rate of fifty acres a day, or a much greater number, with as much ease as the same machine would afterwards prepare the soil for wheat, and harrow in the seed.

It must always be recollected, in favour of steam ploughs and harrows, that no holder whatever will be required, and that an engine of twenty ploughs' power would be guided by one man just as easily as one of half that capacity.

The power of selecting, for the performance of all the principal ploughings and harrowings of the largest farm, weather when the soil was in the fittest state for being laboured, and of executing these labours at any time in two or three days, must also be taken into account. Add the saving of horse food, of risk from diseases and death, of horse lodging, of men as ploughmen and carters, and of capital; because a steam-engine of twenty-horses' power, adapted to impel ploughs, harrows, waggons, sowing, mowing, and reaping machines, would certainly cost less than twenty horses and their harness. One or two pairs of horses might, under such an arrangement, be all that was necessary on even the largest farm.

If small farmers could not afford to purchase steam ploughs or steam harrows, a class of men would arise, after a trial was made and their value determined, who would possess such machines, and work them for the farmers for hire. There would be nothing in such an arrangement more than a new application of the principle of the division of labour.

Possibly the progress of civilisation, refinement, and wealth, in consequence of the unrestricted commercial intercourse of all countries, and the universal diffusion of knowledge among all ranks, may ultimately tend to what may be called a characteristic appropriation of the earth's surface; that is, to the employment of varied and agreeable surfaces, in favourable climates, as human residences; and of flat, dull, mountainous, or unhealthy surfaces for the growth of corn, timber, or fuel, and the breeding of live stock. The power of steam would cultivate the flat surfaces, and convey their produce from one end of a kingdom to another as easily and rapidly as men and horses now convey the produce through a parish; and, as Dr. Arnott observes, the house and grounds of a citizen of London, now twenty miles from town, would, by the rapidity of conveyance, become in effect within two miles. But, if such a result, in regard to the world generally, is very remote, it will hardly be denied that it is a very possible case in regard to Europe; and it will not occupy much space to notice the suitability of the surface of Europe for such an arrangement. No country is in almost every part so well adapted for human residences as England: even Italy has its unhealthy districts; and there are extensive plains in Spain, France, Germany, and Russia, better adapted for bearing corn, than for that kind of domestic agriculture adapted to the country residences of men of leisure. By far the greater portion of Russia is, from its climate and flat surface, totally unfit for the elegant or even comfortable enjoyment of a country life; taking the average of its whole extent, it may be said to be half the year under snow; spring and autumn are in a great measure wanting, and the midday heat of summer is as great as in Italy: the inhabitants, therefore, are necessarily without most of the elegant enjoyments of agriculture and gardening, and without most of the natural beauties of country scenery. But the whole territory, from the Baltic to the Black Sea, is admirably adapted for the culture of corn; and this, in a great degree, for the very reasons why it is so ill adapted for rural enjoyment. In consequence of the prolonged covering of snow, no soil is prepared for the seed with so little labour; none requires so little manure; none is so free from root weeds; and no surface is more even, less in want of draining or irrigation, or less liable to suffer from drought or rain. All these circumstances are particularly favourable for the culture of annual plants. Corn is an annual which comes rapidly to perfection, and therefore can be grown in as great abundance in Russia as in France and Spain, and far better than in Germany, where the soil is in many parts arid. Russia, therefore, seems formed by nature to be the corn and potato field of Europe; and, if ever this should take place, the employment of steam in agriculture will there be exhibited to as great advantage as its employment in manufactures is in England. But we shall submit to much of what we have advanced being called wild speculation, provided we shall hear of some one adapting the steam-engine to the plough or harrow.

A Lamp, with what, in popular language, may be called a glass wick, on the principle lately discovered, though not yet perfected, but likely to lead to the most important results, will be a most valuable article in small green-houses, and in the tiny pits and frames of amateur gardeners like myself. It might be employed during the day to heat a large vessel of water, which material, as it gives out its heat very slowly, would keep the surrounding atmosphere warm during the night. — *A Horticultural Apothecary*, Sept. 28.

Artificial Mode of milking Cows. — A correspondent (S. F.) suggests that some of the stomach pumps, for example Read's, might probably be applied to extracting the milk from the udders of cows, on the principle of cupping. The advantages which he anticipates are, saving of labour, time, and greater cleanliness.

Law of Nature as to the Shooting of ligneous Plants. — It would seem that all dicotyledonous plants of the ligneous kind that will stole, *i. e.* shoot up from the root when cut down, will also shoot out from such parts of their stems and branches as have at any former time produced buds, even though these buds be entirely cut off. To induce these shoots from the stems and branches, however, it is necessary that all the buds existing at the time on any part of the tree should be removed, otherwise the vital principle will not make the requisite exertion, any more than the root of a tree will stole, unless the tree be cut down. The truth of this theory is exemplified in a peculiar mode of pruning the vine, said to have been first practised by a gardener of the name of Lawrence, and adopted both in the hot-houses, and in the open air, at Rooksnest in Surrey, and, we believe, some other places. What is called the spurring in method is followed; but, instead of leaving spurs, all the side shoots are cut off so close to the old wood, that not a single visible bud is left on any part of the plant. In spring a great number of embryo shoots are protruded from the situations of former shoots, from which one of the best is selected, and the rest are rubbed off. We are promised a detailed account of this mode of pruning with the advantages attending it, (which we confess we do not exactly understand,) by Mr. Squibb of Rooksnest, already mentioned (p. 189.) as an excellent gardener.

ART. VIII. *Order and Neatness.*

It has always struck us that English gardens were very deficient in that orderly arrangement, neatness in detail, and high keeping of the more select parts, of which they are susceptible. These are beauties which add to every other beauty, and which can be understood and valued by those by whom some other beauties cannot be fully appreciated; for instance, botanical arrangement by those who know nothing of botany. As far as we can recall to mind the gardens of Scotland as they were kept about twenty years ago, we think that, speaking generally, they were better kept than those of England; we can say with confidence that the kitchen-gardens there were much better kept than they generally are here, and we are informed that this is still the case. The gardeners on the Continent seldom equal us in the higher branches of cultivation, but very frequently surpass us in neatness of keeping, dress, and ornament. But, at all events, whether we are right in our judgment as to the Scotch and foreign gardens or not, we are sure we are correct when we say that English gardens admit of much improvement in the particulars to which we allude. This opinion was more forcibly impressed upon us, in consequence of having lately called at some gardens in different parts of the country; and it has occurred to us that we might promote the cause of neatness, by taking some notice of those which we thought in the best order. We are aware that this is a very likely mode to give offence, but we are willing to risk a chance of this result against the chance of doing good both to gardeners and their employers. The following places came under our notice: —

Amphill Park, Bedfordshire, Lord Holland, on September the 12th; Wrest Park, Countess De Grey, Sept. 15th; Hawnes House, Lord Carteret,

September 14th; Flitwick House, Bedfordshire, J. T. Brookes, Esq., September 15th; Ampthill Nursery, Mr. Thomas Gibbs, F.H.S., September 16th; Whitmore Lodge, Sunning Hill, Berkshire, Robert Mangles, Esq. F.H.S., September 20th; Mrs. Hickman's Villa, near Golding, Surrey, September 22d; Villa of — Wrightson, Esq., near Woking, Surrey, September 25d; Golding Nursery, near Woking, Surrey, Mr. Donald, F.H.S., September 24th; Pains Hill Park, Surrey, Countess of Carhampton, September 25th; Claremont, Surrey, Prince Leopold of Saxe Coburgh, September 25th; Deepdene, Surrey, Thomas Hope, Esq., September 26th; Denbies, Surrey, W. G. Dennison, Esq., September 26th; Westlands Nursery, Dorking, Surrey, September 27th; Bury Hill, Surrey, Robert Barclay, Esq. F.L.S. H.S., September 27th; Rooksnest, Surrey, C. H. Turner, Esq. F.L.S. H.S., September 28th; Bickley, Kent, John Wells, Esq. F.H.S., September 28th; Sundridge Park, Kent, Samuel Scott, Esq. F.H.S., September 28th; Plaistow Lodge, Kent, Walter Boyd, Esq., September 28th; Bromley Hill, Kent, Lord Farnborough, F.H.S. &c., September 29th.

Of all these places the only one which came entirely up to our views of neatness and high keeping was Bromley Hill; certainly one of the most judiciously laid out and best kept places of the size which we have ever seen. It is also very much the style of place that we admire. The kitchen-garden and reserve-grounds were not less neat and free from litter and weeds than the pleasure-ground; the walls were well covered with fruit trees bearing good crops, and the compartments fully stocked with vegetables. The great object aimed at in the pleasure-ground is effect; the beautiful picturesque in regard to general views, show and ornament in regard to flowers, dress and high keeping near the house, and pleasing lines and forms every where. The head-gardener of this department, Mr. James Nash, is most assiduously attentive; he told us it required his utmost exertion to keep things as they were; we have sent him a copy of the first and second volumes of the *Gardener's Magazine*, as a mark of our approbation, and we hope his employers will continue the work to him, as a mark of theirs. We have made a similar present to the head kitchen-gardener, Mr. James Linn, and we hope the work will be continued to him, as well as to the other. To his foreman, Mr. James Halley, who showed us through the garden, and who takes in the *Gardener's Magazine*, we have sent the first ten numbers of the *Library of Useful Knowledge*, and trust to his making a good use of them, and continuing to take in the work.

The place which we found in the second best order is the grounds of Flitwick House, which may be considered in the light of a Ferme Ornée. There is not much ground in high keeping here; but there are above twelve miles of walks in natural and artificial woods, ten miles of which we walked over, and found every part in the most appropriate order. This is the result of a very judicious and highly commendable practice in Mr. Brookes, of letting out all his shrubbery and copse-wood walks at so much a mile to his labourers and their families, to hoe, mow, and otherwise keep neat, after working hours. The consequence is, they are kept in perfect order all the summer at very little expense, and the labourers are benefited. The thorn hedges on the estate, and the grass fields, are kept free from weeds in the same manner. The kitchen-garden was in perfect order, and highly productive in every part. There is a botanic ground, an arboretum, an aviary, and other things here which we shall afterwards have occasion to notice; in the mean time we have presented Mr. Brookes's gardener, Trotter, (who already takes in the *Gardener's Magazine*,) with *Popular Philosophy*, published by Miller of Dunbar, as a mark of our approbation, and a testimony of his professional skill and industry.

The pleasure-ground at Whitmore Lodge comes up to the *beau idéal* of the highest order and keeping; the roses are gathered as they wither, and the leaves as they drop, every morning; and in order that the leaves of

the Portugal and common laurels may maintain their full vigour, and neither drop nor become pale, as they often do when the trees are allowed to ripen their berries, the flower spikes are cut off as soon as they begin to fade. As the kitchen-garden and hot-houses here were undergoing alteration, the place could not be considered as in perfect order; otherwise, in as far as that order went, Whitmore Lodge was equal to Bromley Hill. To the gardener, Mr. Sharp, we have sent Sweet's *Hot-house and Green-house Manual*, for his encouragement and improvement.

Most of the other gardens deserve mentioning for something commendable; Mr. Donald's nursery is by far the best kept country nursery we have ever seen, and was literally without a weed; the flower-gardens at Amptill and at Hawnes were well stocked and in good order; the gardener at Pains Hill understands his business well; the kitchen-garden at Claremont we can never like from the incongruous mixture of botany and kitchen crops, though both plants and crops were in vigorous growth; many parts of Deepdene about the house are exquisite, and Mr. Wood, the gardener, is a man of science, a good practical naturalist, and most assiduous; but for such a place he would require more hands; Bury Hill has long been celebrated, the hot-houses were in the first rate order, and though they are placed in the kitchen-garden, and the latter combines botanical plants, yet they are disposed in a manner less offensive to congruity than at Claremont; Rooksnest is kept in very good style, and the gardener, Mr. Squib, from whom we hope to hear on his vines, well deserves commendation; the gardener at Bickley, Mr. John Wells, had his flower-garden in the very first order, and deserves from his master Arnott's *Elements of Natural Philosophy* for himself, and *The Library of Useful Knowledge* for his son; the pleasure-ground at Sundridge Park is overgrown with trees, chiefly hornbeams, and other vulgar sorts. But, as soon as leisure permits, we shall give some farther notices of these and other gardens and places.

ART. IX. *Original Beauty of Lines and Forms.*

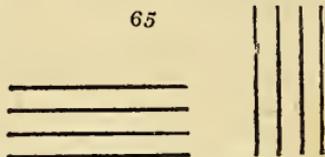
A LECTURE "on the beauties contained in the oval, and in the elliptic curves, both simple and combined, generated from the same figure or disk," was some time since delivered in the Royal Institution, by R. R. Reinagle, Esq. R.A., and a very interesting abstract of it is given in the *Quarterly Journal of Science* for October last. The subject had been before treated, as connected with elegant art, by Hogarth and Donaldson, artists whose theories of serpentine lines and flowing lines are well known. Mr. Reinagle's object is to prove that curved lines are beautiful in an abstract point of view, without reference to the associations which experience may have connected with them; and he has brought forward such evidence as, we think, cannot fail of convincing all who have turned their attention to the subject; unless, perhaps, we except the author of the *Essay on Beauty*, in the Supplement to the *Encyclopædia Britannica*, who denies that there exists such a thing as original beauty, and maintains that all beauty, of whatever kind, and in every fine art, may be traced to the principle of association. Mr. Reinagle's theory and illustrations have all that superiority over those of Hogarth, which the more cultivated mind of its author, and the comparatively advanced state of the fine arts, might be supposed to admit. If Mr. Reinagle is not perfectly satisfactory on all points, his illustrations abound with so many undeniable truths, that every artist may profit from their perusal; and we shall, therefore, take a brief view of such parts of it as may

be brought to bear, by garden-artists, on that comparatively humble province of design which is applied to the laying out of flower-gardens.

Mr. Reinagle assumes it as an axiom, that every object eminently beautiful or grand is distinguished by an outline of definite character; that is, an outline which may be referred to one or more geometrical figures; or, more abstractedly, something that is a well-ordered whole, in opposition to something that is in a state of chaos or confusion. All beautiful objects, he says, are composed of undulating lines and elliptic curves; and all grand objects, of figures bounded by straight and angular lines. All objects in motion are characterised by curved lines; and all objects in a state of rest, by comparatively straight lines.

1. *Parallel Lines*, at equal distances, and of equal length, and whether in a horizontal or perpendicular position (*fig. 65.*) possess not the slightest character or principle of beauty, either separately or collectively.

Corollary as to Gardening. — Lines of invisible fences (*i. e.* such as bound lawns, and are to be looked through) should be simple and parallel, without any other angles or curves than what strength or construction renders absolutely necessary.



2. *Straight lines radiating from a centre* (*fig. 66.*), without creating any geometrical figure, are yet pleasing.

Coroll. — Avoid this form (sometimes adopted) at the ends of fences formed on the invisible principle; but adopt it sometimes in ornamental fences, and in spreading the branches of ornamental trees on walls or espaliers.

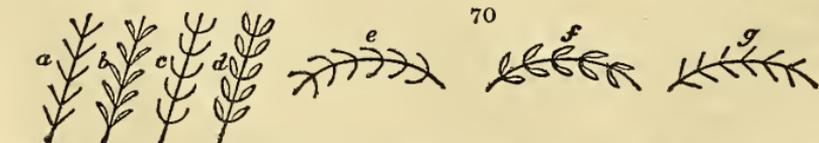


5. *Lines placed like a pile of planks* are disagreeable, singly and as a whole, from their indefiniteness (*fig. 67.*); but, if the pile be carried to a point (*fig. 69.*), they become tolerable as a whole, from their definiteness, or their assumption of a regular figure. An equilateral or an acute-angled triangle of such

lines (*fig. 68.*), is naturally more pleasing than a right-angled triangle. (*fig. 69.*)

Coroll. — Bumps, or unconnected obtuse heaps of earth or rock-work, are disagreeable objects; earth in ridges, or rock-work in pointed or definite shapes, is more tolerable.

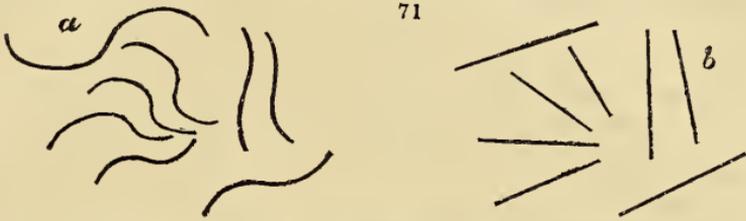
4. *Leaves of trees possess different degrees of original beauty*, according to the prevalence of straight lines or curved lines. Leaves may possess mere combination, or a very low degree of beauty (*fig. 70. a*);



some beauty, by the addition of curved lines to straight lines (*b*); a better approach (*c*); a progressive advance (*d*); a more perfect principle of beauty (*e*); the greatest portion of beautiful lines (*f*). Deformity, or a retrogradation from the principle of beauty, is produced by the abrupt union of straight lines with curved lines (*g*).

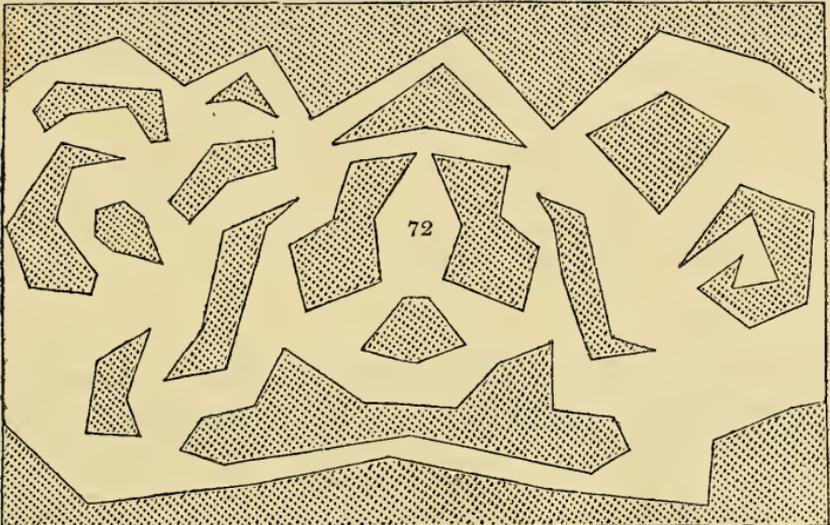
Coroll. — Some plants are absolutely more beautiful than others, independently altogether of colour, smell, rarity, or value; *e. g.* myrtle, box.

5. Curved lines thrown down at random are agreeable in themselves, and

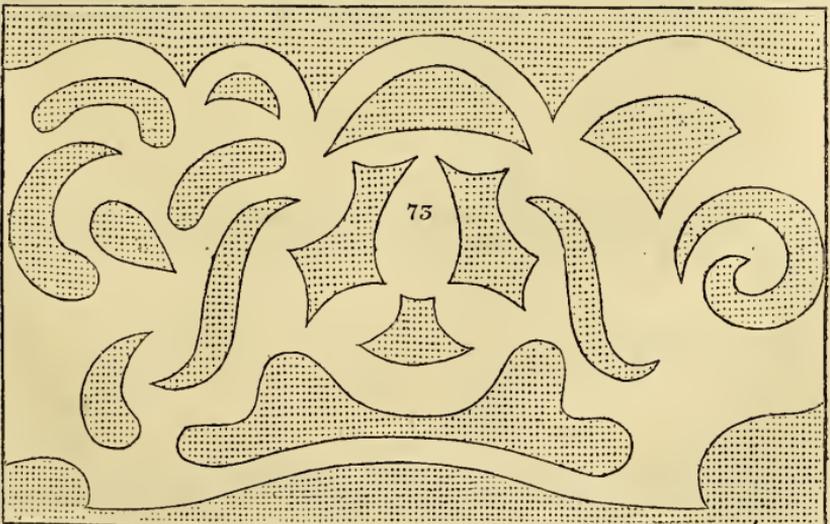


form a more agreeable whole, or assemblage, than straight lines thrown down at random (*fig. 71. a and b*).

Coroll. — A flower-garden, composed of ungeometrical or irregular beds, bounded by straight lines and angles (*fig. 72.*), will have a less pleasing effect



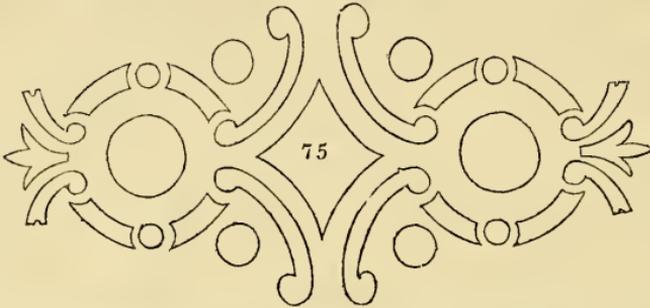
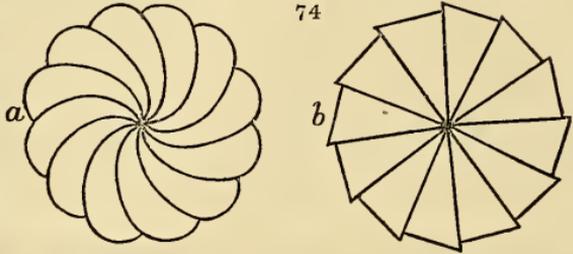
than the same style of flower-garden composed of curved lines. (*fig. 73.*)



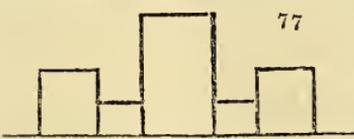
6. Curved lines, formed into a figure on the radiating principle (fig. 74. a), are handsomer than straight lines so connected (b).

Coroll. — Curled wool or hair is handsomer than what is straight; *Stipa pennata*, than *Juncus sylvaticus*; an ear of barley, than an ear of wheat. Groups or

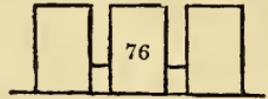
beds of flowers form a less handsome flower-garden when merely scattered over the surface (fig. 75.), than when composed into a figure or figures (fig. 75., the flower-garden at Dropmore). Curved walks are naturally, or originally, handsomer than straight walks; so much so, that no principle is so frequently carried to excess in laying out grounds.



7. Quantity and variety are essential to perfect beauty. — A symmetry composed of equalities (fig. 76.), is less beautiful than a symmetry composed of inequalities. (fig. 77.)



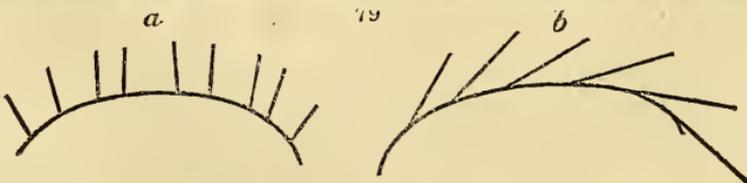
Coroll. — A line of flower-beds consisting of a figure composed of various shapes and sizes (fig. 78. a), will be handsomer than one composed by a varied disposition of



one single beautiful shape, even though of different sizes (b).



8. Straight lines, radiating at unequal distances from curved lines, possess no original beauty (fig. 79. a); but straight lines, forming irregular tangents to



curved lines, are beautiful (b) on the radiating principle.

Coroll. — The lines of the basketwork enclosing the figures of parterres composed of curved lines, should also be of curved lines. In ornamental

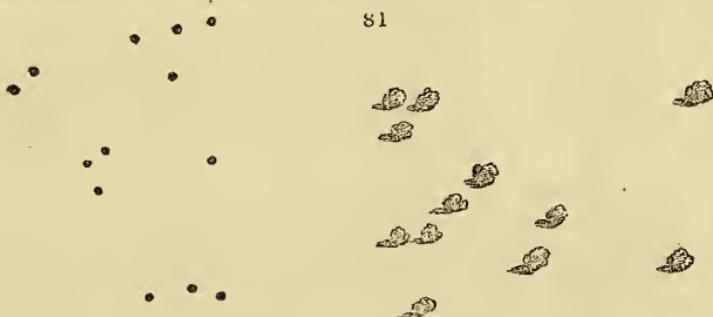
gates and fences, the transition from indifferent lines to lines of original beauty should not be abrupt; *e.g.* Chinese gates and palisades, as contrasted with enriched Dutch and British iron gates and palisades.

These illustrations appear to be sufficient to prove that there is such a thing as original beauty in lines and forms; and this study may afford valuable hints to a garden-artist, provided he has the power of attending to what passes in his own mind, to such a degree as to prevent him from mistaking impressions arising from associations founded on utility, on historical or classical authorities, on imitations of antiquity or of nature, or on accidental associations, with impressions produced by figure or outline alone. To cultivate this sort of knowledge, Stewart's *Philosophy of the Human Mind*, Stewart's *Philosophical Essays*, and Allison's *Essays on Taste*, will be found works of preeminent value.

After some practice in applying these principles to the lines and forms of flower-gardens, the young garden-artist may exercise himself in exemplifying them in the scattering of trees, groups, or clumps, over a flat surface. He may use dots on a sheet of paper, or marks with a stick on a sandy road, and begin with dots or clumps thrown down at random, or without any beauty either original or by association. (*fig. 80.*) He may next exhibit an



approximation to grouping, by bringing nearer together some of the dots



or clumps (*fig. 81.*); show grouping more decidedly (*fig. 82.*); and, lastly,



group so as to throw the surface into agreeable shapes. (*fig. 85.*) This will



be found all that the principle of original beauty of forms and lines can do, in planting a flat surface, without reference to other beauties, either of the materials of the scenes, or of the exterior scenery, or of established associations.

ART. X. *Garden Libraries.*

LIBRARY in the Glasgow Botanic Garden.—Your ideas as to garden libraries have been anticipated and acted upon to some extent by Mr. Murray, the very intelligent and judicious curator of the Glasgow botanic garden, for some years. By the application of a small sum annually, a considerable number of books on gardening subjects have been collected, expressly for the use of the workmen, who are besides allowed to attend the botanical lectures delivered at the garden (a most important advantage), in consideration of being sometimes detained in the evening watering during hot weather.—*A. W. July 27.*

A Library has been formed in a haberdasher's house in London, where there are upwards of twenty young men, who all board in the house, and who are thereby kept at home, improving and entertaining themselves, instead of running about the streets, without any definite object in view. This is a practice well deserving of imitation by other tradesmen. (*Times*, Sept. 18.)

The following Books we are desirous of recommending to young gardeners and to garden libraries in a most particular manner :—

Arnott's Elements of Natural Philosophy. 8vo. pp. 700. 15s.—This is one of the most valuable works of the kind that have ever been published. We cannot sufficiently recommend it to every gardener whatever, whether young or old. It is a work which a man may take with him on a journey to exercise his mind, as Dr. Johnson took with him a book of arithmetic on his Highland tour. In an ample analysis of the work, in the *Times* newspaper, Oct. 3., after the highest praise, it is added: "To the most idle schoolboy it will be as entertaining as a treatise on witchcraft or legerdemain, and he will go through it with as much avidity; and it is, at the same time, a work in which the best informed man will find a great number of curious facts and illustrations, which, whatever his familiarity with principles may be, were probably not within his recollection, and very possibly not within his knowledge."

Popular Philosophy; or, the Book of Nature laid open upon Christian Principles, and agreeably to the Lights of Modern Science and the Progress

of New Discovery. By the Editor of the Cheap Magazine. Dunbar. 2 vols. small 8vo. 10s. 6d.—This is a religious natural history, which has been strongly recommended in most of the Scotch newspapers, and which has been sent to us as “peculiarly adapted for village, itinerating, or garden libraries.”

The Cato Major and Lælius of Cicero; with a double Translation, for the Use of Students on the Hamiltonian System. London, Hunt and Clarke. 8vo. 7s. 6d.

The History of Charles XII., by Voltaire; the first Three Books, with a double Translation, for the Use of Students on the Hamiltonian System. London, Hunt and Clarke. 2 vols. 8vo. 15s.

These books we have looked over, and can strongly recommend to every young gardener desirous of learning French or Latin.

The Library of Useful Knowledge continues to appear twice a month in sixpenny numbers. The gardener will find something applicable to his profession in every number. In No. 2., Hydraulics, the water ram, a self-working engine for raising water, applicable to at least one third of the country seats in Britain, but which we have only seen in use at Bury Hill, Surrey, is clearly described; in No. 3., every thing relating to pumps is explained; in 4. and 5., every thing relating to heat; in 6, 7, and 8., every thing useful relating to machines; and in 9., the mechanics of the human frame, understood to be by Charles Bell, one of the most beautiful and instructive treatises that ever were written, and which every labourer ought to peruse, if it were only that he may be enabled to make a proper use of his strength.

ART. XI. *Answers to Queries, and Queries.*

CUTTING over young Forest Trees. (p. 119.)—Sir,—In compliance with your request, and in reply to the queries of your correspondent W. Thonville, I beg to submit the following remarks:—The progress that newly planted trees will make, depends much on the age and size of the plants, their previous treatment in the nursery, the season of planting, and the manner in which that operation is performed. To offer directions as to each or any of these particulars, might extend the present communication to an improper length; and the information it would contain might appear superfluous to your correspondent, and to many of your readers.

In the act of transplanting, the plant is deprived of many of its smallest and most efficient feeding radicles, and the remainder are not unfrequently more crowded together than they were before taking up, which often tends to check the growth the first season after planting, and this check is strengthened and sometimes confirmed by the following causes:—While the plants stand in crowded nursery rows, the dense foliage in a great measure protects the stem and exterior parts of the shoots from the action of the weather, and a thin and delicate bark will be formed, tender in proportion to the confined state of the atmosphere where such plants grow: and hence the check which is often produced by too violent thinning on neglected plantations. No sooner are young plants removed from the nursery to the open ground, where they are exposed to the full play of the winds, than a hardening and contraction of the bark commences; and, while the process of forming a stronger and more impervious bark, suitable to the climate, is going forward, the usual results of bark-binding and stunted growth are accelerated by the damage sustained by the roots in the recent act of transplanting, and the limited flow of sap consequent on such

damage. From the soft and juicy nature of the bark of resinous trees, they are less liable than hard wood to this contingency; and I have found no plant amongst the hard wood tribes show such symptoms more readily than the ash. The oak and some others are more apt to throw out low lateral shoots, which, in some degree, tends to restore circulation.

It therefore appears agreeable to reason, and it is confirmed by experience, that cutting down all such plants *as will bear cutting* is the only remedy in such cases; and this brings me to that part of Mr. Thonville's queries, "whether oak, ash, birch, beech, sycamore, elm, hazel, thorn, &c., should be so treated." I would say, all of these may be cut down with much advantage, with the exception of beech and birch, and none thrive better under that operation than lime and Spanish chestnut. If Mr. Thonville examines his beech plants, he will likely by this time find them getting "bushy," unless they have been drawn up very weak in the nursery. Let him order the thickest of the side shoots to be pruned off close by the tree, in next February, taking care that a regular sprinkling of small shoots be left all over the tree, and that no aspiring branch be allowed to compete with the leading shoot; and, next summer, he will likely observe sufficient growth to prevent his wishing to cut them down. Birch may be treated in the same manner; but, as this plant bleeds freely, I would prefer pruning it early in October.

By the month of October, the third year from planting, the roots will have acquired sufficient range and strength to support a luxuriant growth; and at that period I would recommend to Mr. Thonville to have all his other hard wood trees cut over *to within an inch of the ground*, taking care that the operator places his foot firmly near the bole while cutting, that the roots in the loose trenched soil may not be disturbed by the operation. I prefer October for cutting down; by this time the Lammas growth is nearly expended, and new buds will form, and be found to break more vigorously than if the operation were performed in the spring months.

With regard to "repeating the operation," I consider it "too much of a good thing." By a single operation, the bark and habits of the plant become completely inured to their new situation; yet, where a stunted growth may render it necessary, or where curiosity may prompt the trial, I would recommend cutting the young shoot right above a bud, and within an inch of the former cut, the first, or, at farthest, the second, year after the first operation. Some plants may push more than one shoot; the strongest should be encouraged, and all the others should be rubbed off in the month of June the first year after cutting. I hope this will not form the only communication you will receive on the subject, and remain, Sir, &c.—*Archibald Gorrie. Annat Garden, Sept. 25. 1827.*

Guarding single Trees in Parks.—What is the simplest, cheapest, and most slightly mode of guarding single trees planted in parks or lawns from the depredations of deer or other animals?—*Answer.* Thorn branches, tied with hazel or willow shoots, and understocking the pastures.

Heating Hot-houses with hot water seems coming into vogue. What is your opinion of the mode? What is the best shape of a boiler for that purpose?—*A Friend to Improvement. Sept. 21.*

We have little doubt of hot water superseding both steam and smoke flues; certainly steam. A wrought-iron box boiler we should think the best; but our correspondent may refer to Messrs. Bailey, 272, High Holborn, who are now heating several hot-houses in this way.

Iron Hot-houses.—I, in common with several friends, am anxious to ascertain your opinion as to iron hot-houses, and whether you recommend them indiscriminately, or only for particular purposes; and also, whether you recommend cast or wrought iron, and whether you approve of copper sashes?—*An Enquirer. Shrewsbury, Aug. 10. 1827.*

Our opinion is known to be decidedly in favour of metallic hot-houses, on the general principle of their admitting more light, and we do not care much what sort of metal is used. But it must be remembered that many practical gardeners, Mr. Atkinson, who has had great experience in building hot-houses, and what is called the Horticultural Society (that is, the one or two persons who take the lead in the office and garden of that Society), are of a different opinion. In seven years the hot-houses erected, and now erecting, at Syon House, upwards of one thousand feet in length, will probably set the question at rest. In the mean time, we should be glad of the opinion of gardeners who have had such houses under their charge, and especially of Mr. M^rArthur of the Grange, who, we know, has erected and managed several iron houses. Our correspondent, Mr. Fraser, will perhaps collect the experience of gardeners in Ireland on the subject.

Hardy Ferns.—Having turned the attention of some of your correspondents to the treatment of the Orchidææ, you might also direct it with success to the best treatment of a beautiful, but neglected tribe of plants, the hardy ferns. The healthiest that I have seen cultivated are growing in a shady peat border, in the garden of R. Barclay, Esq., at Bury Hill, Surrey.—*A. X. Oct. 23. 1826.*

We have lately seen the fine collection at Bury Hill, and, through the kindness of its most liberal proprietor, been able to add from it sixty species to our collection. We should feel greatly obliged to Mr. Cameron, the gardener at Bury Hill, if he would send us a list of the collection under his charge, grouping them according to their methods of culture, and describing the culture for each group. We would also request Mr. Shepherd, of the Liverpool botanic garden, to do the same thing as to the collection there. Information on so interesting a department of select culture, from these quarters, will be gratifying to every curious gardener.—*Cond.*

ART. XII. *Retrospective Criticism.*

THE Idea of the Grass-Garden at Woburn Abbey, we are assured upon unquestionable authority, was not taken from that of Mr. Gibbs's nursery, Brompton, as we stated (p. 126.), not on the authority of Mr. Gibbs, but on that of our contributor J. M. The Woburn Abbey grass-garden, is an original design of Mr. Sinclair.

Trees that will, and will not, grow on Peat Mosses.—Sir,—In taking notice of my *Natural and Agricultural History of Peat Moss* in your Magazine, you have mentioned among the trees that grow on peat mosses, the willow generally, along with others. Give me leave to say that I think in this you are mistaken: for, during an experience of upwards of thirty years in cultivating and observing such soils, I have never seen any of the larger willows growing on moss ground; by which I mean on peaty soils, as long as they retain their antiseptic or tanning juices.

Indeed I have lately planted, unsuccessfully, cuttings of the larger sorts of willows upon my own moss grounds that I had drained upwards of twenty years ago, and where other trees were thriving. This want of success cannot be attributed to any defect in the climate, as these cuttings were taken from good willow trees, growing within a few hundred yards of the moss.

If you had taken the trouble to have looked into the appendix to my work, in the correspondence by which I strengthen my statements in the body of the history, you would have seen the following sentence on this subject. "The *Salix álba*, the white willow, *Salix frágilis*, the crack

willow, and *Sàlix viminalis*, the ozier, and in general all our largest and best willows, will grow in pure water; but I have tried them in every possible way in moss grounds, and I am satisfied that they will not grow there, even on the sides of moss ditches."

I need not, however, inform you that there are many tribes of dwarf willows which occupy the surface of peaty and marshy grounds; and, besides, one is naturally misled, from the aquatic nature of willows in general, to think that all of them would grow in mosses; and from this idea I was grievously mistaken at my first cultivation of moss grounds. Having procured from the botanic garden at Edinburgh, and other places, several sackfuls of the cuttings of the most useful willows, I planted them in the banks of my moss ditches; but I was much disappointed to find, after repeated trials, that the moss water was poisonous to them. They indeed sprung a few inches at first, but they soon died away, and not one of many thousand cuttings survived.

I dare say that you may be nearly correct with regard to the other trees that you mention as thriving well on drained moss grounds. Mr. Arthur Young, in his *Irish Tour*, says that almost any tree will thrive on dry moss lands; but my own experience points out the spruce as the best. Other trees may be preferred perhaps in the following order: Scotch fir, birch, mountain ash, alder, larch, oak, beech, poplar, sycamore. Also the following willows thrive in such soils, and grow to ten or fifteen feet or more in height, viz. the pentandrous or *bay-leaved* willow, *Sàlix pentandra*, the apple-tree-leaved willow, *Sàlix malifolia*, the ash-coloured willow, or *sallow*, *Sàlix cinerea*. I have the honour to be, Sir, &c. — *Andrew Steele. Willow Grove, near Edinburgh, July 10. 1827.*

We have real satisfaction in recording the corrections of Mr. Steele, and, as we have repeatedly mentioned, shall always feel obliged for similar communications from every description of readers. As we do not spare others, we cannot reasonably expect to escape ourselves.

ART. XIII. *Obituary.*

DIED lately, at Mile End nursery, Mr. Samuel Stirling, who had been foreman there for a long period of years. His natural sobriety, and steadiness of moral character, made him an excellent example, as well as monitor, to the thousands of young men who, in the course of so many years, became known to him in that respectable establishment. His abilities, as a practical nurseryman, were of the first order, and his indefatigable attention to the more difficult processes of propagation was eminently useful to his employers. Naturally unobtrusive and unassuming in his manners, he refused several offers of co-partnership in the nursery business; and remained stationary in the scale of rank, as well as of emolument, while he assisted many of his juniors, as well as inferiors, into places of comparative wealth and respectability. *J. M.*

Died, on the 3d of October, Mr. William Scott, nurseryman, Dorking, many years gardener at Chart Park in that neighbourhood. Mr. Scott was a pupil of the late Mr. Aiton of Kew Gardens, and one of the first who was successful in propagating the rarer species of *Erica* and the Single *Camellia* from cuttings. This art he taught to Mr. Rollison, sen., of Tooting, till, as he used to say, the master was beat by the scholar. He was an honest and amiable man, and much respected in his station.—*R. D. Oct. 22.*

THE
GARDENER'S MAGAZINE,
JANUARY, 1828.

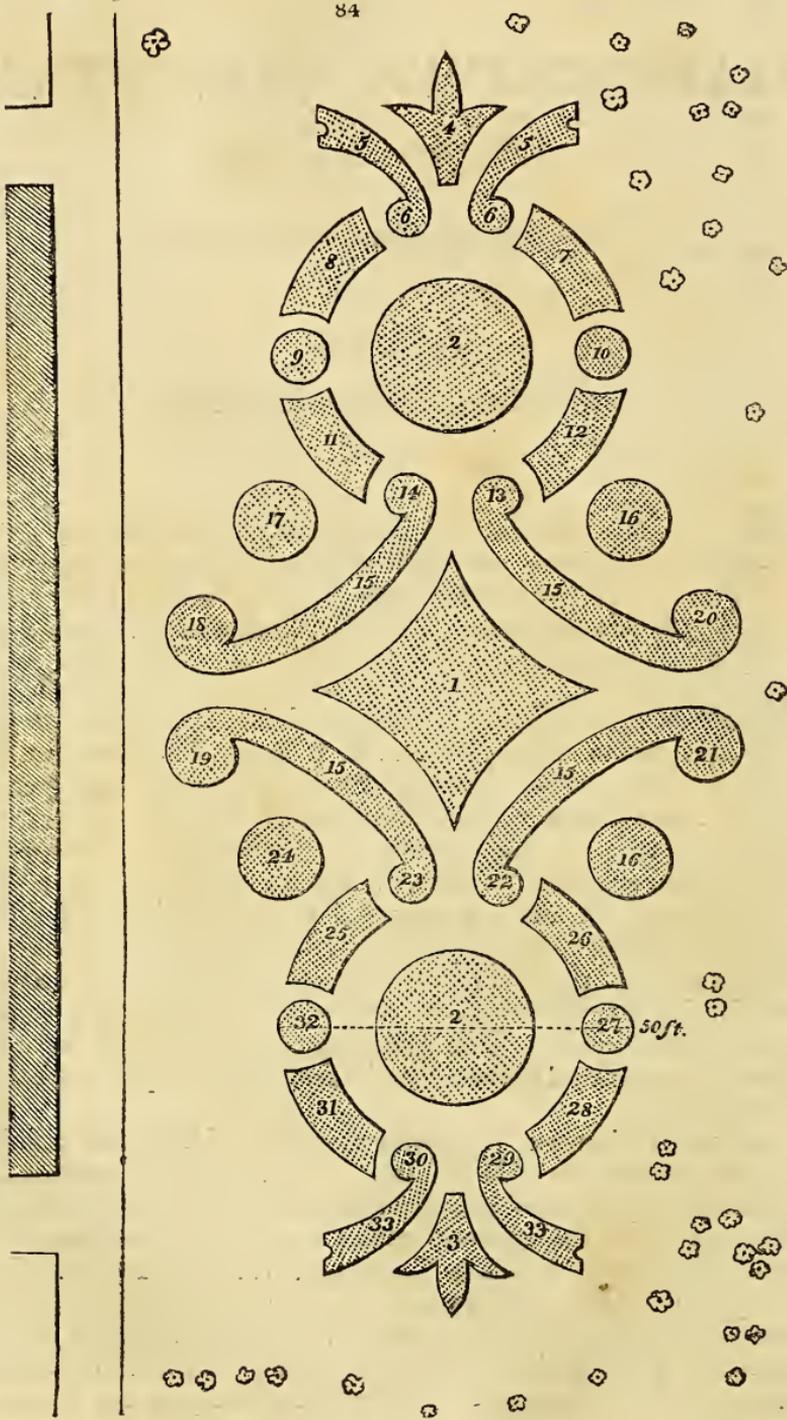
PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Some Account of the Flower-gardens and the Pinetum at Dropmore, the Seat of Lord Grenville.* By Mr. WILLIAM BAILLIE, Gardener at Dropmore. *Interspersed with general Remarks on the Gardens and Grounds there,* by the CONDUCTOR.

DROPMORE has been long celebrated for its pinetum, or collection of plants of the pine and fir tribe, and for the taste displayed in the flower-garden. Some account of the former, which contains upwards of fifty species of pines, will open to view an extensive field for the improvement of evergreen forest scenery; and the lists of flowers, and the mode of displaying them in the parterre and Dutch garden, will afford useful instruction to every class of gardeners and amateurs; instruction the more valuable, because, in so simple a matter as planting flower-beds, very few think it worth while to proceed systematically. The grand lesson to be learned from the flower scenery at Dropmore is the advantage of placing beauty in masses.

As a situation for a country residence, Dropmore exhibits no very striking natural feature. The house is pleasingly and picturesquely situated among woody scenery and fine turf; and the views from the lawn command a very rich and grand distance, including Windsor Castle and Windsor Forest. It is simple, spacious, and elegant, with a judiciously contrived conservatory in front, the glass of which is removed during summer, leaving the roof supported on piers of trelliswork, the structure assuming at that period of the year the character

of a veranda. When we saw this veranda in July last, it was



beautifully clothed with flowering creepers, magnolias, and geraniums; and, altogether, the disposition of plants about and against the garden front of the house equalled our expectations, while the symmetrical disposition of assemblages of flowers on the lawn surpassed them. The effect of considerable masses, entirely composed of Geranium, of *Célsia*, of *Heliotròpium*, of *Fúchsia*, of *Sálvia* *coccínea*, and of various other free-growing green-house plants, is striking from its novelty and rarity, and well worthy of imitation. We have seen no place where this description of flower-gardening is carried to such an extent as it is at Dropmore.

The masses of flowers in front of the house form a regular figure (fig. 84.), and the plants are so disposed that, when in flower, the corresponding forms of the figure contain corresponding coloured flowers. The following is a list of the plants which now occupy this figure, with the order in which they are disposed, and a corresponding enumeration of the bulbs and other plants which occupy the beds during winter and spring :

<i>Beds.</i>	<i>In Summer.</i>	<i>In Winter and Spring.</i>
1.	<i>Ròsa índica</i> (blush), bordered with <i>R. semperflorens</i> flore plèno, and <i>R. índica</i> minor.	<i>Anemòne coronària</i> .
2, 2.	<i>Pelargònum inquinans</i> (scarlet geranium).	<i>Malcòmia marítima</i> (Virginian stock).
3.	<i>Verbèna Lambértzi</i> .	<i>Tùlipa Gesneriàna</i> common (hardy varieties).
4.	<i>Senècio élegans</i> flore plèno (dou- ble <i>Jacobæa</i>).	
5, 5.	<i>Célsia urticifòlia</i> .	<i>Delphínium Ajàcis</i> (rocket lark- spur, sown in autumn. <i>Cròcus mæsiacus</i> .
6, 6.	<i>Cinerària amelloídes</i> .	
7.	<i>Fúchsia coccínea</i> , bordered with <i>Prímula vulgàris</i> var. flore plèno-cárnea.	<i>Scílla nonscripta</i> (blue hare- bells).
8.	<i>Heliotròpium peruviànum</i> .	<i>Muscàri comòsum</i> var. <i>monstròsum</i> .
9.	<i>Ruélià formòsa</i> .	<i>Tùlipa suavèolens</i> .
10.	<i>Ageràtum mexicàna</i> .	
11.	<i>Diánthus chinénsis</i> (Indian pink) and <i>Resèda odoràta</i> (migno- nette).	<i>Tùlipa Gesneriàna</i> var. flore plèno (double sorts).
12.	<i>Lobèlia spléndens</i> .	<i>Tùlipa Gesneriàna</i> (single sorts). <i>I'xia crocàta</i> , and <i>I'xia fenestràlis</i> , kept in frames in midwinter.
13.	<i>Diánthus latifòlius</i> .	
14.	<i>Lobèlia unidentàta</i> .	<i>Hyacínthus orientàlis</i> (double blue variety), plunged in pots.
15, 15, 15, 15.	Choice herbaceous plants, not exceeding 1 ft. 6 in. in height.	
16, 16.	<i>Gladiolus cardinàlis</i> .	<i>Hyacínthus orientàlis</i> (double red variety), plunged in pots.
17.	<i>Pelargònum latéripes</i> (pink- flowered variegated ivy-leaved geranium).	
18.	<i>Anagállis grandiflòra</i> .	<i>Hyacínthus orientàlis</i> (single blue variety).
19.	<i>Anagállis Monélli</i> .	

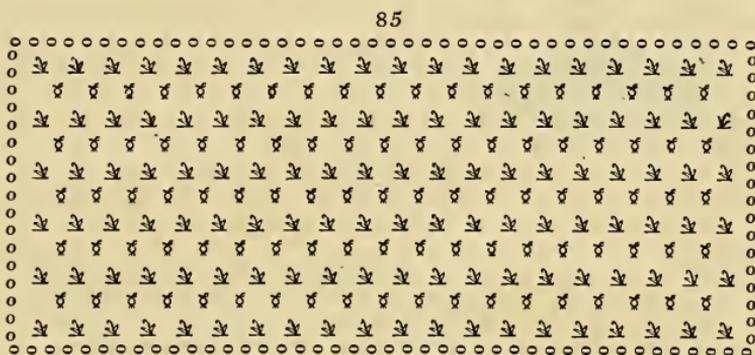
<i>Beds.</i>	<i>In Summer.</i>	<i>In Winter and Spring.</i>
20.	<i>Pelargonium coruscans.</i>	} <i>Hyacinthus orientalis</i> (single white variety).
21.	<i>Pelargonium</i> , sp. ? (Prince of Orange geranium).	
22.	<i>Oenothera caespitosa.</i>	} <i>Crœcus vœrnus</i> and <i>biflorus</i> .
23.	<i>Oenothera missouriensis.</i>	
24.	<i>Pelargonium zonale</i> (scarlet-flowered variegated-leaved var.)	} <i>Hyacinthus orientalis</i> (double red variety).
25.	<i>Málope trifida.</i>	
26.	<i>Lobelia fulgens.</i>	} <i>Tulipa Gesneriana</i> (double yellow variety).
27.	<i>Petunia odorata.</i>	
28.	<i>Commelina cœlestis.</i>	} <i>Hyacinthus orientalis</i> (double white variety).
29.	<i>Cistus guttatus.</i>	
30.	<i>Campánula pentagona.</i>	} <i>Muscari botryoides</i> (grape hyacinth).
31.	<i>Rosa damascena</i> (four seasons rose) and <i>Reseda odorata</i> (mignonette.)	
32.	<i>Bouvardia triphylla.</i>	} <i>Oxalis caprina</i> , kept in frames in midwinter.
33.	<i>Tropœolum majus flore pleno</i> (double nasturtium).	
		} <i>Scilla vœrna.</i>
		} <i>Muscari racemosa</i> , the border of <i>Viola tricolor</i> in varieties.
		} <i>Hyacinthus orientalis</i> (double white variety).
		} <i>Delphinium Ajacis</i> (double rose larkspur).

As a general principle for regulating the plants in this figure, Mr. Baillie observes that the winter and spring flowers ought, as much as possible, to be of sorts which admit of being left in the ground all the year; and the summer crop should be planted in the intervals between the winter plants. Or the summer crop having been brought forward in pots under glass, or by nightly protection, may be planted out about the middle of June, after the winter plants in pots are removed. A number of hardy bulbs ought to be potted and plunged in the beds in the months of October and November, and when out of bloom, in May or June, removed to the reserve-garden, and plunged there, in order to perfect their foliage, and mature their bulbs for the succeeding season.

In some parts of the grounds the masses are thrown about the surface, without regard to regularity or combination of figures, and, occasionally, as it struck us at the moment, in a manner which was rather injurious to what a painter would call breadth of effect. Sometimes a large mass of one colour has an eye in the centre of a different colour, and marginal borders of contrasted colours. In the open glades of lawn in the woody scenery, groups of flowers rise up among moss, others among roots, rocks, gravel, petrifications, bark, or other materials. Fine single specimens of green-house plants appear here and there, plunged in pots. On observing the surface round the large geraniums in general closely covered with

smooth gravel stones, about the size of hens' eggs, we were informed that the stems of geraniums are very apt to rot after continued moist weather, and that these stones are found to counteract this tendency; probably by maintaining a drier surface, and causing greater reflection of heat during moments of sunshine.

The Dutch Flower-garden consists of sixteen beds, each 14 ft. in length, and 6 ft. in width (fig. 85.); and the following



is a list of the plants which are grown in them, the arrangement varying every year, so that the same plants may not be two years in succession on the same bed: —

In Summer (fig. 85. ♀).

1. *Enothera missouriensis.*
2. *Lobelia fulgens.*
3. *Anemone hortensis* (double).
4. *Ruellia formosa.*
5. *Commelina cœlestis.*
6. *Fuchsia coccinea.*
7. *Verbena Lamberti.*
8. *Pelargonium zonale* (pink nose-gay variety).
9. *Heliotropium peruvianum.*
10. *Gladiolus cardinalis.*
11. *Tigridia Pavonia.*
12. *Mathiola annua* (scarlet ten-week stock).
15. *Pelargonium Fothergillii* (scarlet nosegay geranium).
14. *Salvia coccinea.*
15. *Fuchsia gracilis.*
16. *Dianthus Caryophyllus* (double carnations).
17. *Pelargonium latéripes* (pink variegated ivy-leaved geranium).

In Winter and Spring (fig. 85. ♂).

- Narcissus poeticus.*
Tulipa Gesneriana (select varieties).
 { *Anemone hortensis*, in autumn
 Lobelia decumbens.
Gladiolus byzantinus.
Narcissus floribundus.
Erythronium dens canis.
 { *Tulipa Gesneriana* (parrot and
 double yellow varieties).
Narcissus jonquilla.
 { *Hyacinthus orientalis*, double va-
 rieties in all colours.
Sanguinaria canadensis, plunged.
 All the year.
Anemone coronaria (double).
Narcissus calathinus.
 { *Tulipa Gesneriana* (var. double
 red, or pæonia-flowered variety).
Scilla verna.
 All the year.
Gladiolus communis.

In Summer.

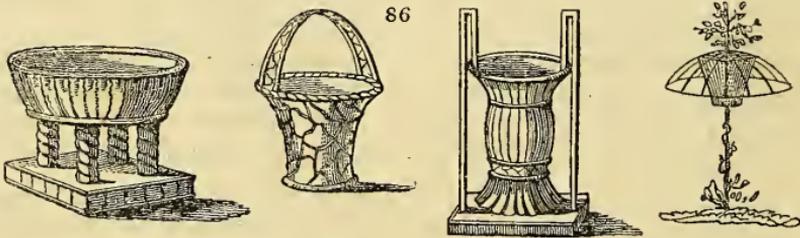
18. *Coreópsis tinctória.*
 19. *Pelargónium Daveyànum.*
 20. *Célsia urticifólia.*

In Winter and Spring.

- { *Delphínium Ajàcis* (double rocket
 larkspur).
 { *Tùlipa Gesneriàna* (early clari-
 mond variety).
 { *Eránthis hyemàlis* (winter aco-
 nite).

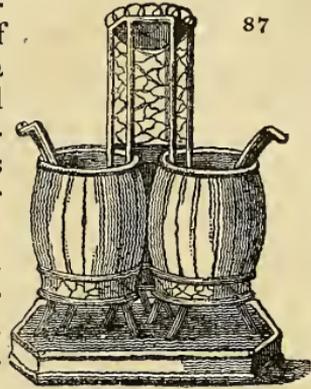
A bed (*fig. 85.*) of the dimensions given by Mr. Baillie will contain six rows of any one of the summer plants enumerated; five rows between them of any of the winter and spring bulbs mentioned; and a surrounding border of *Cròcus*, *Trichonèma*, *Bulbocòdium*, *Scílla*, *Saxífraga granulàta*, and similar plants, 3 in. from the edge of the bed, and the same distance apart from each other. The summer plants (α in *fig. 85.*) are readily inserted in the centre of the squares formed by the winter plants (\varnothing in *fig. 85.*), without the least risk of injuring the latter; and, when finished, the summer plants will be 1 ft. apart from the summer plants, the winter plants 1 ft. apart from the winter plants, and all the plants of one season 6 in. distant from the plants of the other season.

After disposing of flowers and plants in immense quantities, and in almost innumerable forms on a flat surface, an active mind like that of Lady Grenville, enthusiastically fond of gardening pursuits, cannot avoid pushing the taste farther. The direction given to this extreme of art here, is that of raising the plants in the air in grotesque vessels of a great variety of shapes (*fig. 86.*); of surrounding them with varied basket-



work; or of training them on elevated forms of wire, and trellis-work. It is worthy of remark and of imitation, and indeed it forms a characteristic of the artificial ornaments of Dropmore, that they are not so much made up of costly materials, as by the application of skill and taste, and the labour of local workmen, to articles of little intrinsic value. Fantastic roots and boughs of trees, with rods of hazel or other clean growths, bark, moss, and such old boxes, barrels, tubs, or jars, as may be at hand, and would otherwise be burned or thrown away, are the

materials which are metamorphosed into forms remarkable for their singularity (*fig. 87.*), or engaging for their allusion to shapes of established beauty. For example, a tripod for geraniums consists of an old cask, which had contained Roman cement; and an old Italian jar, such as is sent from the oil-shops with grapes or Genoese pickles, forms the basis of an elegant vase, which may be supported on a pedestal consisting of an old tea-chest disguised by pieces of bark. In this way, by the tasteful application of a little labour, and with materials worth almost nothing, are produced pleasing and varied objects and effects.



There is no greater evidence of attachment to a situation and a pursuit, than to be always doing and contriving something. Various plans of improvement are in progress at Dropmore, some of which relate to the more confined and artificial beauties near the house, and others to the pinetum, to a winding avenue of cedars, and to an extensive piece of ground laying out with water and rough banks, in imitation of wild scenery. As far as we observed and learned, the formation of this water and the wild scenery are in a style which would give satisfaction to Mr. Price. Rough picturesque surfaces, exotic plants and shrubs, and the common productions of wild situations, as heath, broom, furze, ferns, and *digitális*, are happily combined.

In the conservatory there is an abundant crop of *Passiflora edulis* (*Gard. Mag.*, vol. ii. p. 232. *fig. 63.*); and against a lofty wall are some plants of *Magnolia grandiflora*, which must be amongst the tallest and oldest in England. Near this wall are some of the finest specimens of the *Stuártia*, *Malachodéndron*, and *Virgínica* we have ever seen. They were magnificently in flower. There is a handsome range of aviaries, one of which contains a number of canary finches (*Fringilla canária*), to some of which Mr. Baillie intends giving their liberty, with a view to naturalising them in the woods, agreeably, as he mentioned, to the suggestions of Rusticus in Urbe. (*Gard. Mag.*, vol. ii. p. 480.)

The Pinetum at Dropmore occupies perhaps about four or five acres in the space more immediately allotted to that object; but its boundaries are of an irregular form, and much broken; and in all the surrounding scenery various specimens

of this interesting tribe are introduced. The collection was first commenced with some plants, raised from seeds received from New York about the year 1795 or 1796. Additions have ever since been continually making to it. The ground was naturally productive of heath and furze. Between two plantations composed chiefly of the common species of pines and firs, the collection is scattered over a surface of smooth turf, through which passes a winding gravel walk. Some of the trees, though young, have already taken very picturesque shapes.

There is a very good plant of *Araucària imbricatà*, and two of *Cunninghàmia lanceolatà*; one of the latter raised from a cutting, which, left to itself, has sent up from the collar several stems contending which shall take the lead; the other has a fine leading shoot. These plants are protected during winter by temporary coverings of mats and fern, which are opened to the south in fine days, and closed in severe weather. From observations carefully made during the last winter, it was found that these huts, or cases, had entirely excluded the frost, even when most severe.

Besides the species in the pinetum at Dropmore, Mr. Baillie states that there are a few specimens which have been raised from seeds, or otherwise obtained, but whose characters are not yet judged sufficiently distinct to assign to them their proper place in the catalogue. *Pinus Pinea* appears at present to be the produce of some seeds from Chile*, and *Pinus Pináster* †, or *marítima*, of some from the interior of New South Wales.

Of the species in the following list, Nos. 14. 19, 20, 21, 22. and 50. appear to suffer from the frost of our English winters, but have hitherto been preserved by the shelter of coverings formed nearly in the shape of bee-hives, and consisting of bent rods or poles of hazel or ash, over which are stretched two thicknesses of garden mats, including between them a wall and roof of dry fern, of about 6 or 8 inches in thickness. Some fern is also strewed over the roots in severe weather. This experiment is now about to be tried with Nos. 28, 29. 44. and 51. No. 48., *A. imbricatà*, is believed to be quite hardy, but has not yet been exposed here to the frost without protection. Nos. 49. and 52. are supposed to require being housed in the winter. The others have been found, or are known, to be hardy.

* The *Pinus Pinea* was introduced to Chile by the Spaniards.

† Some trees of the *Pinus Pináster* have been introduced to the vicinity of Sydney, New South Wales, and from these trees there is little doubt that the seeds were gathered from which the above was raised.

List of the Species of *Pinus*, *Abies*, *Cedrus*, *Larix*, *Araucaria*, *Cunninghamia*, and *Dammara*, composing the Pinetum at Dropmore.

88

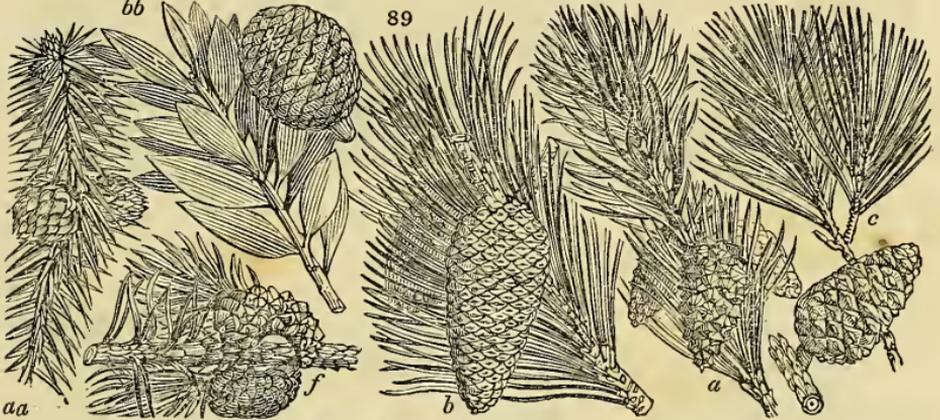
§ 1. *Folius geminatis*. Leaves in pairs. (fig. 88.)



Systematic Name.	English Name.	Native Country	Year of introduction to England.	Year of introduction to Dropmore.	Height in Native Country in Feet.	Height of ticketted specimens at Dropmore.	Reference to published Figures.
PINUS	PINE TREE						
1 <i>sylvéstris</i> L.	wild, or <i>Scotch</i>	Scotland	...	...	30 to 100	30	Lamb. pin. 1. tab. 1. (fig. 89. a)
2 <i>pumilio</i> Jacq.	dwarf wild	Carniola	1779	...	...	6	Lamb. pin. 5. tab. 2.
<i>pumilio</i> var. <i>rubriflora</i>	dwarf wild red-flowered	.....	...	...	...	13	
3 <i>Laricio</i> <i>Poiret</i>	<i>Laricio</i> , or <i>Corsican</i>	Corsica	1814	1825	80	3	
4 <i>uncinata</i> <i>Dec.</i>	hooked	Pyrenees	...	1824	50	5	

bb

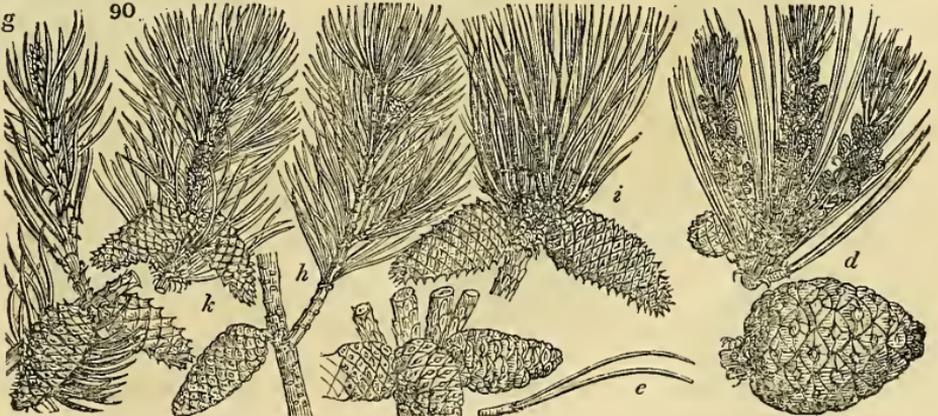
89



5 <i>Pinaster</i> L.	<i>Pinaster</i> , or <i>Cluster</i>	S. Europe	1596	1824	60	32	Lamb. pin. 9. tab. 4, 5. (fig. 89. b)
6 <i>maritima</i> Mill.	maritime	S. Europe	1759	1821	40	12	Lamb. pin. 13. tab. 9, 10. (fig. 89. c)
7 <i>Pallasiana</i> Lamb.	<i>Pallas's</i>	Russia.	...	1821	50 to 60	12	
8 <i>Pinea</i> L.	<i>Pinea</i> , or <i>Stone</i>	S. Europe	1548	...	40	18	Lamb. pin. 11. tab. 6, 7, 8. (fig. 90. d)
9 <i>resinosa</i> H. Kew.	resinous	N. Amer.	1736	1821	50	9	Lamb. pin. 20. tab. 14. (fig. 90. e)
10 <i>pungens</i> Lamb.	prickly-leaved	N. Amer.	1804	...	60	20	Mich. arb. 1. p. 61. tab. 5.
11 <i>Banksiana</i> Lamb.	<i>Sir Joseph Banks's</i>	Huds. Bay	1785	...	12	24	Lamb. pin. 7. tab. 3. (fig. 89. f)
12 <i>inops</i> Hort. Kew.	poor	N. Amer.	1737	...	40	22	Lamb. pin. 18. tab. 13. (fig. 90. g)
13 <i>halepensis</i> Mill.	<i>Aleppo</i>	Levant	1683	...	20 to 30	9	Lamb. pin. 15. tab. 11. (fig. 90. h)
14 <i>Massoniana</i> Lamb.	<i>Masson's</i>	1824	4	

g

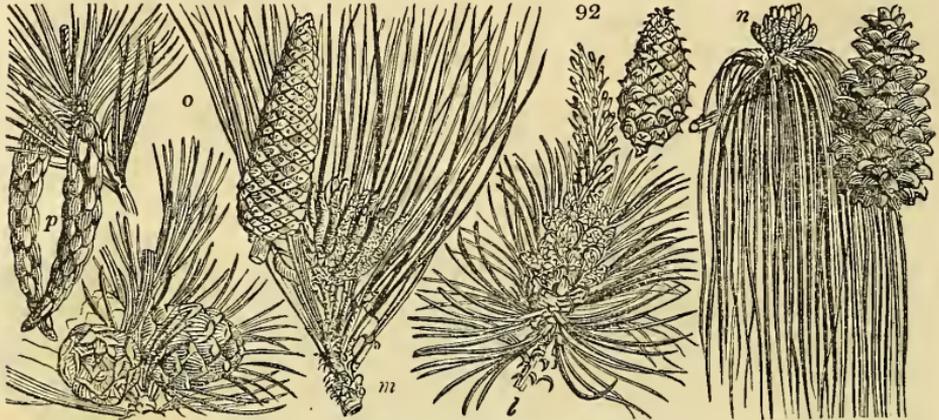
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§ 2. *Folius ternis.* Leaves in threes. (fig. 91.)

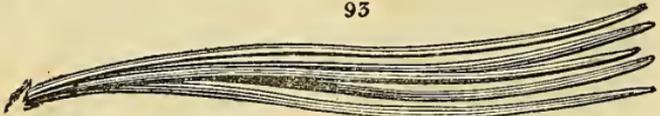


15 <i>tæda</i> L.	torch	N. Amer.	1713	...	30	29	Lamb.pin.23.tab.16,17. (fig.90.i)
16 <i>variabilis</i> Lamb.	variable	N. Amer.	1739	1821	60	8	Lamb.pin.22. tab.15. (fig. 90. k)
11 <i>serotina</i> Mich.	late	N. Amer.	1713	1821	60	7	Mich. arb. l. p.86. tab.7.
18 <i>rigida</i> Mill.	stiff-leaved	N. Amer.	1759	...	80	26	Lamb.pin.25. tab.18,19. (fig.92.l)
19 <i>palustris</i> Mill.	swamp	N. Amer.	1730	1824	50	7	Lamb.pin.27. tab.20. (fig.92. m)



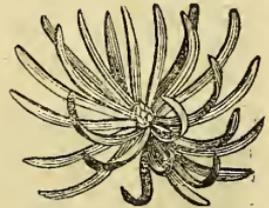
20 <i>longifolia</i> Lamb.	long-leaved	E. Indies	1801	1822	90	8	Lamb.pin.29. tab.21. (fig. 92. n)
25 <i>sinensis</i> Lamb.	Chinese	.....	...	1825	...	2to6	
22 <i>canariensis</i> C. Smith	Canary	Canaries	1815	1822	40	8	Plant. rar. gen. c. ic.
23 <i>lutea</i> Walt.	yellow	.....	...	1821	...	10	

§ 3. *Folius quinis.* Leaves in fives. (fig. 93.)

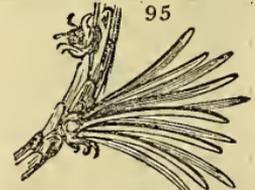


24 <i>Cembra</i> L.	Cembra	Siberia	1746	...	50to60	24	Lamb.pin.34.tab.23,24. (fig.92.o)
25 <i>Cembra sibirica</i>	Siberian Cembra	Siberia	...	1825	...	1	
26 <i>pygmæa</i>	pygmy	.....	...	1827	...	½	
27 <i>Strobus</i> L.	Strobus, or Weymouth	N. Amer.	1705	...	100to150	35	Lamb.pin.31. tab.22. (fig. 92. p)
28 <i>excelsa</i> Wallich	lofty, or Bhotan	Nepal	1823	1827	100	1	
29 <i>occidentalis</i> Swartz	western	.....	...	1826	70to80	½	

§ 4. *Folius fasciculatis peremantibus.* Leaves in bundles, and persisting. (fig. 94.)



30 CEDRUS <i>Lebani</i> L.	CEDAR TREE Lebanon	Levant	1683	1802	70to80	25	Lamb.pin.59. tab.37. (fig. 96. q)
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§ 5. *Folius fasciculatis deciduis.* Leaves in bundles, and deciduous. (fig. 95.)

31 LARIX <i>europæa</i> Dec.	LARCH TREE European	Germany	1629	...	80to100	40	Lamb.pin.53. tab.35. (fig. 96. r)
32 <i>microcarpa</i> Lamb.	small-coned	N. Amer.	1760	1821	80	18	Lamb.pin.58. tab.37. (fig. 96. s)
33 <i>péndula</i> Lamb.	weeping	N. Amer.	1739	1821	70	5	Lamb.pin.56. tab.36. (fig. 96. t)



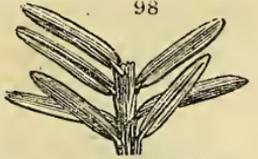
34 sibirica	Siberian	Siberia	1786	1824	80	1
35 daurica Fisch.	Daurian	Dauria	...	1827	...	$\frac{1}{2}$

* *Schubertia disticha* Mirb. *Cupressus disticha* L., Two-rowed Schubertia, or Deciduous Cypress; North America; 30 ft. high.
 † *Podocarpus nacificus* Pers., Nut-bearing Podocarpus; Japan; 20 ft. high.
 ‡ *Podocarpus macrophyllus*, Long-leaved Podocarpus; China; 10 ft. high.
 These three species are introduced to show the links which connect the fir tribe with other hardy Coniferae.

§ 6. *Foliis angulatis, solitariis, subulatis, sparsis.* Leaves angular, solitary, awl-shaped, loose. (fig. 97.)

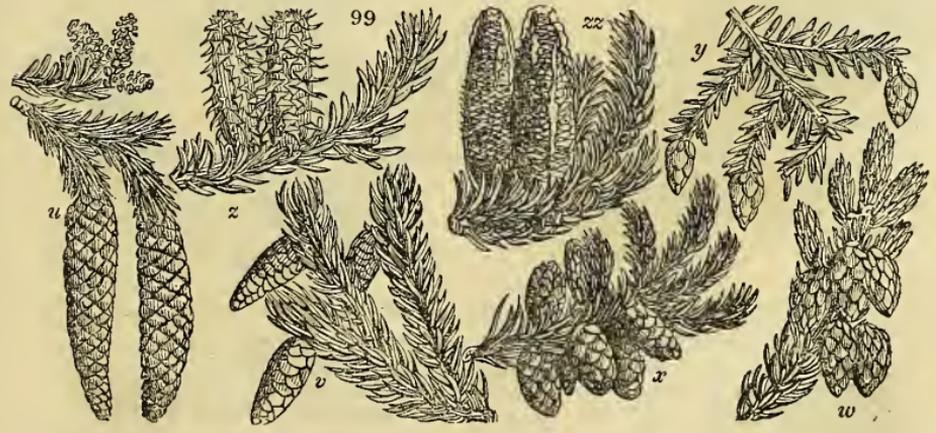


FIR TREE						
6 excelsa Dec.	{ lofty, or Norway } Spruce	N. Europe	1548	...	100	35 Lamb.pin.37. tab.25. (fig. 99. u)
37 alba Hort. Kew.	white Spruce	N. Amer.	1700	...	80	35 Lamb.pin.39. tab.26. (fig. 99. v)
38 nigra Hort. Kew.	black Spruce	N. Amer.	1700	...	45	18 Lamb.pin.41. tab.27. (fig. 99. w)
39 rubra Lamb.	red Spruce	N. Amer.	1755	...	30	5 Lamb.pin.43. tab.28. (fig. 99. x)
40 Clanbrassiliana H.K. Ld.	Clanbrassil's	.....	...	...	2 to 3	1 to 6
41 carpatica	Carpathian	.....	...	...	...	...



§ 7. *Foliis solitariis, planis, subdistichis.* Leaves solitary, flat, nearly two-rowed. (fig. 98.)

42 canadensis H. Kew.	Canadian	N. Amer.	1736	...	40 to 50	15 Lamb.pin.50. tab.32. (fig. 99. y)
43 pectinata Dec.	comb-leaved, or Silver	Germany	1603	...	80	40 Lamb.pin.46. tab.30. (fig. 99. z)



44	<i>spectabilis</i> Lamb.	showy	.....	...	1827	80to90	2	
45	<i>balsamea</i> Mich.	Balm of Gilead	N. Amer.	1696	...	50	14	Lamb. pin. 48. tab. 31. (fig. 99. zz)
46	<i>Fraseri</i> Pursh	Fraser's	Pennsylv.	1811	...	30	2	
47	<i>sibirica</i>	Siberian	Siberia	...	1826	...	1	

§ 8. *Coniferae miscellaneæ.*

—	ARAUCARIA	ARAUCARIA						
48	<i>imbricata</i> Pav.	imbricated Chile Pine	Chile	1796	1824	150	4	Lamb. pin. vol. ii. tab. 4. (fig. 100.)
49	<i>brasiliæna</i> Lamb.	Brazil Pine	.....	...	1825	100to150	2	Lamb. pin. vol. ii. tab. 5. (fig. 101.)
50	<i>excelsa</i> Lamb.	{ lofty, or Norfolk } Island Pine	Norfolk I.	1793	1827	180	8	Lamb. pin. tab. 39, 40. (fig. 102.)

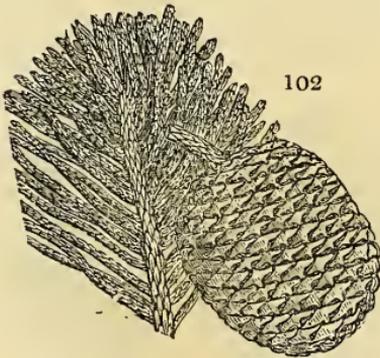


100

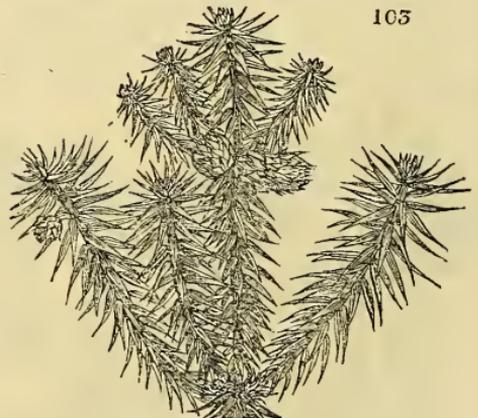


101

51	<i>sinensis</i> Brown	CUNNINGHAMIA Chinese	.....	...	1823	15to20	10	(fig. 89. a a, and fig. 103.)
52	<i>orientalis</i> Lamb.	{ DAMMARA } eastern, or Amboyna } Pitch Tree	.....	...	1825	100	1	{ Lamb. pin. vol. ii. tab. 38. } { (fig. 89. bb) }.



102



103

The following species are all that are wanting to render the collection complete: —

- | | |
|---|---|
| <i>Pinus Lambertiana</i> Dougl. ; California ; grows 215 feet high. | <i>Abies Thunbergii</i> Lamb. ; Japan. |
| <i>Abies taxifolia</i> Lamb. ; N. W. Coast of America. | <i>Abies orientalis</i> L. ; Levant. |
| <i>Abies dumosa</i> Lamb. ; Nepal. | <i>Larix Koempferi</i> Lamb. ; Japan. |
| <i>Abies religiosa</i> Kunth ; Mexico. | <i>Cedrus Deodâra</i> Roxb. ; Nepal and Thibet. |
| <i>Abies hirtella</i> Kunth ; Mexico. | <i>Dammara australis</i> Lamb. ; New Zealand. |

There are several other undescribed pines and firs, known partly from dried specimens, and partly from the reports of travellers.

Adjoining the pinetum, and winding through a pine wood, is a drive bordered with cedars, and leading to the above-mentioned avenue of that noble tree.

In one part of the grounds an artificial elevation of earth and gravel has been raised, for the purpose of commanding an extensive and well wooded view. This is faced and ornamented with roots, and with stems of old beeches of a very picturesque form, already much clothed with flowering and other creepers. The work is still in progress, but even the present effect is striking.

Many other things at Dropmore would require to be noticed, but our glance was too rapid to admit of more detailed recollections. For the lists of flowers and pines, and the observations on their culture and management, we are entirely indebted to Mr. Baillie; who has been head-gardener at Dropmore for five years, and to whom it is but doing justice to state that every thing under his care was in the highest order and keeping.

ART. II. *Outlines of Horticultural Chemistry, &c.* By G. W. JOHNSON, Esq., of Great Totham, Essex.

(Continued from p. 155.)

HOWEVER varying in the proportions, yet every soil is composed of silica, alumina, lime, magnesia, oxide of iron, salts, and animal and vegetable remains. The most important consideration is, what proportions those are which constitute a fertile soil. The *beau idéal* of a fertile soil is one which contains such a proportion of decomposing matter, as to keep the crop growing upon it always supplied with it in a state fit for introsusception, yet not so superabundantly as to render it too luxuriant, if the object in view is the production of seed: but, for the production of those plants whose foliage is the part in request, as spinach, or the production of edible bulbous roots, as onions, which have a small expanse of leaves, so as to be almost entirely dependent upon the soil for nourishment, there can scarcely be an excess of decomposed matter presented to their roots. Spinach, on rich soils, will yield successive cuttings, the same as to asparagus: the latter, especially, demands abundant applications of nourishment to its roots; since, like the onion, it has little foliage and slightly fibrous roots, at the same time that, like the spinach, it has to afford repeated cuttings, which, requiring a repeated development of parts, need abundant food, and that in the immediate neigh-

bourhood. A soil with a just proportion of decomposing matter, which insures that it will be capable of absorbing moisture during the droughts of summer from the atmosphere, as the most fertile soils are always the most absorbent, yet it must not be too retentive of moisture, which is the case in such soils as contain too much alumina; neither must it too easily part with it, which is a characteristic of those which contain an excess of silica. A subsoil of gravel mixed with clay is the best, if not abounding in oxide of iron: for clay alone retains the moisture on the arable surface in too great an excess; and sand on the contrary carries it away too rapidly. It is, however, evident that to insure these desiderata in any soil, at all seasons, is impossible; and it is as manifest that a soil that would do so in one climate would fail in another, if the mean annual temperature of them should differ, as well as the amount in inches of rain which falls during the same period. Since, in the western parts of England, more than twice as much rain occurs as in the most eastern counties, or in the proportion of 42 to 19, a soil in the east of England, for any given crop, may be richer and more tenacious than the one required for it on the western coast. Alumina, or clay, imparts tenacity to a soil when applied; silica, or sand, diminishes that power; whilst chalk and lime have an intermediate effect, they render heavy soils more friable, light soils more retentive. These simple facts are important; two neighbouring fields, by an interchange of soils, being often rendered fertile, which, before, were in the extremes of tenacity and porosity. From these statements it is evident that no universal standard, or recipe, can be given for the formation of a fertile soil, but one whose constituents approach in their proportions to those of the following one cannot be unproductive in any climate. It is a rich alluvial soil, which Mr. Sinclair, in his invaluable *Hortus Gramineus Woburnensis*, gives as being the most fertile for the grasses.

“ Fine sand, 115; aluminous stones, 70; carbonate of lime, 23; decomposing animal and vegetable matter, 34; silica, 100; alumina, 28; oxide of iron, 13; sulphate of lime, 2; soluble vegetable and saline matter, 7; loss, 8. Total, 400.”

I have already stated what chiefly constitutes a fertile soil; it may be added that, to constitute one eminently such, its earthy particles must be in a minute state of division, the more so the more fertile will it be. In the above analysis 185 parts only were separable by sifting through a fine searce, 215 parts were impalpable; whereas poorer soils will often have 300

parts coarse matter to every 100 of finely pulverised constituents.

In affording warmth to plants, the earth is of considerable importance, and the power of accumulating and retaining it varies as much in soils as the proportions of their constituents. Sir Humphry Davy found that a rich black mould, containing one fourth of vegetable matter, had its temperature increased in an hour from 65° to 88° by exposure to the sunshine, whilst a chalk soil was heated only to 69° under similar circumstances; but the first, when removed into the shade, cooled in half an hour 15° , whereas the latter lost only 4° . This explains why the crops on light-coloured tenacious soils are, in general, so much more backward in spring, but are retained longer in verdure during autumn, than those on black light soils; the latter attain a genial warmth the more readily, but part with it with equal speed. An experiment which I have often repeated upon light as well as tenacious soils with like success, demonstrates how greatly the colour of a soil influences the accumulation of heat. Coal ashes were sprinkled over half the surfaces of beds sown with peas, beans, &c., and on these the plants invariably appeared above ground two or three days earlier, obviously on account of the increased warmth; it being a well known fact that dark-coloured bodies absorb caloric more readily, and in larger proportions, than those of a lighter hue.

Different plants affect different soils. Every gardener must have observed that there is scarcely a kitchen-garden but has some particular crop which it sustains in luxuriance far superior to any other garden in its neighbourhood, or to any other crop that can be grown in it. My own garden, without the preparation of an artificial soil, will not produce the common garden cress (*Lepidium sativum*), whilst the raspberry is remarkably luxuriant. That the composition of a soil has a main influence in these peculiarities is certain. The nettle haunts, as it were, the footsteps of man, and clings, as poetry might urge, in very sociality round his dwelling. This plant will not flourish but in a soil containing nitrate of potassa (saltpetre), a salt always abounding in the neighbourhood of walls and places where there is calcareous matter. The rabbit warrens near Mildenhall, in Suffolk, I have noticed frequently as abounding in nettles, yet it is a houseless waste of many miles' extent; but, still, nitrate of potassa is furnished to the soil by the urine of the rabbits, which contains potassa and lime, in very considerable proportion. These topics, however, belong more properly to a future communication upon

manures, which I shall next proceed to, because these ingredients of soils are strictly artificial or adventitious. It is certain that a soil is often considered unproductive, and that unproductiveness attributed to some deficiency in its staple, which is caused by erroneous management. I have before stated an instance of taprooted plants being produced of superior size and form, by means of applying the manure deep beneath the surface. In another instance, some parsneps being of necessity sown in a poor soil, having turned in some manure by trenching full 12 in. deep, I would not allow any to be applied to the surface; but, at the time of thinning, I set half the bed out at an average of 12 in. distance between each plant, the other half at 9 in.: when taken up for storing, the whole were alike perfectly fusiform, but those grown at 12 in. apart were the finest, as $4\frac{1}{2}$ to 3. If manure had been applied to the surface, the fibrous roots, I calculated, would be multiplied at the expense of the caudex, to its much greater detriment, than by making the few usually produced by this root extend in length by enlarging the circuit of their pasturage. Again, a more siliceous darker-coloured soil should be employed for the growth of an early crop of any given plant, than is required by the main crop; because such soil will more readily get rid of the superfluous moisture, and acquire a more genial warmth, two great desiderata for vegetation in early spring. On the contrary, in autumn, for a late crop of peas for instance, the soil should be more aluminous; because, in August, September, &c., atmospheric moisture, in the form of night dews, abounds, the foliage is therefore perpetually subject to alternate extremes of moisture and dryness, whilst the root is liable to a state of exceeding drought: the soil, therefore, should be rich, kept in a minute state of division by frequent hoeing, that moisture may be absorbed, and more aluminous, that such moisture may be retained.

(*To be continued.*)

ART. III. *On the Culture and Propagation of the Genus Citrus.* By an AMATEUR.

Sir,

SHOULD you consider the following remarks relative to the culture and propagation of the genus *Citrus*, made from practical observation, worthy of a place in your valuable Magazine, you will confer an honour upon me by inserting them.

I have been induced to commit to paper such hints as I consider may prove beneficial to your readers, (and your readers, I have pleasure in observing, are not a few,) from seeing in your September Number (p. 26.) a short communication on this subject, entitled, "An Account of a rapid and successful Mode of grafting the Orange, by Mr. James Reeve, Gardener to G. F. Evans, Esq., and Lady Carberry, Laxton Hall, Northamptonshire," on which I have no wish whatever to animadvert further than to say that, although his mode, compared with the mode of our ancestors of no very remote date, is a rapid one, yet it is not so rapid as that which I have myself put in practice, with the greatest success, for the last three or four years.

As an amateur gardener, and one that has long had the greatest admiration for this beautiful and useful tribe of plants, I may, perhaps, have had more leisure, and greater opportunities, of making observations on their habits; of visiting the choicest collections now in this country; and of learning from the able gardeners of the establishments where these plants are best looked after, the treatment of them; as such, Sir, I feel that I am not doing any injustice to Mr. Reeve in making the above observation on his communication, or in going further into the detail of their culture and propagation than he has thought fit to do.

As far as Mr. James Reeve has gone, I can myself vouch for the success he has derived. That lemon stocks are preferable to orange stocks, no one who has seen plants raised from one and the other can for a moment doubt; but lemon stocks may, and will, in *one year* be fit to receive grafts. Lemon seeds sown in January, and placed on the shelf of a green-house, with the assistance of a little forcing in a cucumber frame when two or three inches above the ground, and two shiftings into small pots in the course of the year, will afford excellent stocks for the January following. My system is to make a common hot-bed of dung, over which a cucumber frame is placed early in that month, into which are plunged my stocks of one year's growth; in about a fortnight's time the sap will have run well, when I prepare my scions, much in the same manner as Mr. Reeve describes, and engraft either by whip, cleft, or crown grafting, as my fancy, or the diameter of my scions, may lead me. I then plunge them in the same hot-bed, and even in the same places they stood in before engrafting. In a fortnight or three weeks the grafts will have taken; and a little discretion, as to taking off the clay, bass, &c. &c., will only be required to secure the plants

in perfect health and vigour. By this method I have had an orange tree, which was engrafted in January, standing on a drawing-room table in March and April, with thirty-two blossoms upon it. This is done by taking a scion on which incipient bloom is perceived.

The great advantage to be derived from taking the earliest period of the year for this operation will, independently of the time gained, be found to be twofold: 1st, the stock is readily made to advance the scion in vegetation, a matter of most necessary importance; and, 2dly, should the graft fail, the stock, for two or three times over, may be employed for other scions. With this view, I take care not to cut down my stocks lower than within five or six inches of the surface of the mould.

This method will be found to have gained one year in advance of Mr. Reeve's method. What, then, shall we say to a method of raising orange trees even more rapid than this? It is as follows:—Cuttings of the Madras citron are well known, by the most scientific cultivators of these plants, to afford the best stocks for every species of the orange tribe. A single cutting, put into a small pot in January, the bottom part, or end of the cutting, being made to touch the shards placed below the mould in the pot, and plunged into a common hot-bed of dung, will, by March or April, be found sufficiently rooted and grown generally to allow of a scion being engrafted upon it. The rank nature, if I may be allowed the expression, of the stock, will give prodigious vigour to the graft, and, in less than six months from the time of putting the cutting into the pot, a more beautiful and luxuriant-growing tree will be gained in this manner, than will be gained by Mr. Reeve's method in two years, or my own method in one year. I saw the effect of this experiment last spring. It had been tried, with the fullest success, by a most able and experienced gardener, whose skill in the management of this tribe of plants, of which his employer has a rare collection, far exceeds any thing of the kind which has yet come to my knowledge.

The old system of propagating orange trees in this country we all know to have been by budding. It is at this time the universal practice of the French and the Italians. The process is an exceedingly tedious one. The plants are never well shaped or handsome, nor can we by this method get those beautiful little dwarf-blooming ornaments to our drawing-rooms and the front rows of our conservatories, so much to be admired. Should we, however, require large trees, and such as will yield us fruit for the table, I am of opinion we

cannot do better than submit still to the bungling method of Italy, and procure from Malta, Genoa, or Nice, or even from the Italian warehouses in London, some of the plants imported annually to this country for sale. The best and most healthy plants I have been able to procure in London have been from the warehouse of Mr. Hill in Piccadilly, and the sorts I should recommend for use are the Sweet China Orange (*Portogallo dolce da China*), and the Blood Orange (*Portogallo di Malta*). The Egg Orange and the Sweet Mandarin come, I believe, only from Malta. The Maltese use the word *Arancio*, and not *Portogallo*, for the orange. Of lemons, the *Limone incomparabile*, the *Limone dolce*, the *Limone dolce di Roma*, and the *Limone di cera rosso*, are the best; and of citrons, the *Madras*, the *Madeira*, and the *Sweet-scented*. Of limes, the *Sweet and Sour*, the *Pompoleon*, the *Shaddock*, &c. &c., are all worthy of culture. At some future time I may have it in my power to send you a list of the varieties of this abundant genus. The trees, or rather sticks, bought in London, will be found to thrive rapidly by soaking them in milk-warm water for five or six hours, then planting them in pots, disproportionately small, filled with good maiden earth and vegetable mould, and plunging them into moist heat. If the sticks are become very dry and hardened by the voyage, it will be well to bind them round with wet moss, and so leave them, wetting the moss daily with warm water, till they have shot forth.

The citrons, lemons, shaddocks, and limes will be found easier to propagate than the oranges. Of the latter, the Mandarins, sweet, bitter, and flat; the *Tangerine*; and the *Myrtle-leaved* are the most difficult to secure in engrafting. The *China*, the *Seville*, the *Bloody*, and the *Box-leaved* seldom fail. The *Sweet Lemons*, *Forbidden Fruit*, and all the above named coarser sorts, will be found to grow readily from cuttings, and make handsome plants. Oranges do not grow readily from cuttings; and my rule, therefore, has been to raise them by engrafting, giving the whole of my stocks to them, while I have propagated the coarser sorts by cuttings.

How much might be said in reprehension of the treatment of the old collections of orange trees in this country, all invariably of the bitter sorts, and therefore comparatively useless; how the trees have ceased for years to increase in size or beauty; how they have been annually injured by being placed in the open air during the summer, either exposed to a broiling sun, or set under the drip of fir trees, &c. &c. Some have imagined that orange trees thrive best in winter, when placed

in a green-house, without light from above, and have built orange houses on that construction. Do they suppose the plant, in its native country, enjoys not vertical heat and light? The fact is, they do not *thrive* in such a situation; they *exist*, and that only; and following up the system of placing them out of doors during the summer, they can only be said to thrive, or exist, in such houses during winter, from the circumstance of the temperature of those houses being more congenial to them at that season, than the either too hot or too damp temperature of our summer climate. The large orange trees in tubs of Paris and Versailles are treated in this manner, and what a number of years have they been arriving at their present size! They are, however, so far better managed than our own, in as much as they are never allowed to set their fruit, and are as much, as often, and as neatly pruned (clipped) as an English quickset hedge, or a yew tree cut into the form of a peacock, and therefore they very much resemble these objects. That they are fine trees and large we must allow, but their chief beauty and their utility is altogether destroyed. The spreading elegance of the orange branch, the delicious scent of the orange blossom, the beautiful colour and exquisite flavour of the orange fruit, are not allowed to unfold their treasures to the worthy and *tasteful* inhabitants of Paris and Versailles.

In order to have orange and lemon trees in perfection in this country, they must have a house of glass, and in that house they must remain throughout the year. More air than they will require may be given to them by opening the top lights; and, with the exception of a few vines, which may be trained to the rafters, they should have the house to themselves. The back wall will afford the best situation for lemons, citrons, &c. &c.; and these should be planted in the earth, and not kept in pots or tubs. The orange trees will thrive best in pots or tubs, which should be small, in proportion to their heads, as I find the plants have invariably thriven best when their roots have come in contact with the sides of the pots. The best soil for them is about two-thirds of maiden loam to one of vegetable earth, manured with the scrapings of the pigsty, or saturated with water of pigeon dung. They require much water, frequent washing of the foliage, and steaming, with occasional watering with liquid manure. The nurserymen in the neighbourhood of London are said to recommend bog earth as the best soil for them. The general appearance of their trees, however, if they adopt that plan, would prove that it is not the soil in which they most

delight; for, except the fine collection lately made by Mr. Knight, of the King's Road, Chelsea, there is not an orange or lemon tree in the nursery gardens near London that is not a disgrace to the collection.

I am, Sir, &c.

Woodstock, Sept. 10. 1827.

AN AMATEUR.

ART. IV. *On destroying the Red Spider in Hot-houses.* By Mr. DAVID CAMERON, A.L.S., Gardener to Robert Barclay, Esq., F.L.S. H.S., Bury Hill, Surrey.

ALLOW me to inform you of my method of destroying the red spider in the plant stoves here, which is very simple, and probably may already be known to you. I take a quarter of a pound of flour of sulphur, mix it in a common-sized watering-pot of water, and pour the mixture along the top of the flues when the fires are at work, putting least near the furnace and most at the farther extremity, through a coarse rose, when the sulphur will be found to have run down the sides of the flues, and adhered to them, as well as upon the top. The sulphureous exhalation arising from the hot flues generally destroys the spider in five or six days, when a good syringing will clear the plants of them; but the house is neither steamed nor syringed from the time the sulphur is put on till they are killed. When too much sulphur is put on, I reduce the quantity, by pouring water along the flues; and, if too little, by going over them again with the mixture. By this method the stove is kept free from the spider during the winter months. They only begin to do injury towards autumn, when they are stopped from doing farther injury as soon as the fires are lighted for the season. The same method is practised at Messrs. Loddiges', by brushing over the steam-pipes with sulphur. Vineries and peach houses might be completely cleared of the red spider in the same way before the foliage comes out, because then the sulphur might be put on much stronger, without doing any injury; which it certainly would, if put on too strong, where there is tender foliage in the house.

I am, Sir, &c.

DAVID CAMERON.

Bury Hill Gardens, Oct. 2.

ART. V. *On the Destruction of the American Blight on Fruit Trees.* By MR. CHARLES SHARP, of Ross.

Sir,

HAVING read in vol. ii. p. 49. of your excellent Magazine, an ACCOUNT of some attempts made use of by one of your correspondents to destroy the *Aphis lanigera*, or American blight, for the information of your numerous readers, I beg to state, that last year I had two Codlin trees so much infected, that immediately after the blossom appeared nearly all the leaves fell off. I directly procured some hot-lime, over which I poured boiling water, and washed them with a thick solution. In a short time an alteration was evidently observable, and the midsummer shoots, which followed soon after, were finer than I had ever remarked them before. This spring I not only had the two trees alluded to, but the whole in my garden, about thirty in number, whitewashed up to the fork, and the result of this experiment is that, notwithstanding the severe blight with which we have been visited in this country, I have never had so abundant a crop of fruit, nor seen my trees in so healthy a condition. I am, Sir, &c.

CHARLES SHARP.

Ross, Herefordshire, July 14. 1827.

ART. VI. *On the Blight and Fire-blast on Fruit Trees.* By MR. ROBERT SUTHERLAND, Gardener to J. F. N. Halsey, Esq., Gaddeston Park, Hertfordshire.

Sir,

I THINK there is nothing so destructive to a fruit-garden as blights, nor is there any thing in the business of gardening which requires more of our serious attention, than to endeavour to guard against this great enemy to gardeners.

Before proceeding to suggest a remedy for this evil, it will be necessary, first, to understand the true causes of blights; for, although many curious persons have attempted to explain these causes, yet very few of them have come near the truth.

Blights are often caused by a continued, dry, easterly wind, for several days together, without the intervention of showers, or any morning dew. By this the transpiration in the tender blossoms is stopped, so that in a short time their colour is changed, and they wither and decay; and, if it so happen that there is a long continuance of the same weather, it equally

affects the tender leaves; for their transpirable matter is thereby thickened, and rendered glutinous, closely adhering to the surface of the leaves, and becoming a proper nutriment to small insects, which are always found preying upon the leaves and tender branches of fruit trees whenever this blight appears. But it is not, as some suppose, those insects which are the cause of blights, though it must be allowed that, whenever they meet with such suitable food as a blighted tree furnishes, they multiply exceedingly, and are instrumental in aggravating the disease.

The remedy for this description of blight which I have yet found to succeed best, is to well wash over the trees daily with the softest water that can be procured, rain-water, if possible, mixed with a little dung water; a small quantity of sulphur being mixed in the water, previous to using it, and the operation performed as early as possible in mild mornings. If the young plants are much infected, wash them carefully with a sponge, so as to free them from glutinous matter. Another cause of those blights, which prove most destructive to fruit in the spring where no precautions are used, is the sharp frosts which happen when the blossom and young fruit is in danger; for every gardener knows that at this season we often find a hot sun after very frosty nights. The best remedy I find for this evil, is to wash the frost all off the trees before the sun gets on them; by so doing, I have found no bad effects from sharp frosts.

Other blights prevail from inward weakness and distempers in trees, occasioned from a want of sufficient nourishment to maintain them in perfect vigour, or from some ill qualities in the soil where they grow; or perhaps from some bad quality in the stocks, on which the trees are grafted; or perhaps from some constitutional distemper in the buds or scions of the parent tree; or from many other evils which trees are subject to. If the soil be a hot burning gravel or sand, you will find this will be constantly the case, after their roots have got beyond the earth of the borders. In such cases it is better to change the sort of trees for such as the soil suits better.

There is another kind of blight that sometimes proves very destructive to both fruit and forest trees, in orchards and open plantations, and against which I should be glad to find a remedy. This is what is called the fire-blast; an evil which in a few hours destroys the fruit and leaves, and sometimes the whole tree. The fire-blast is supposed to be effected by volumes of transparent flying vapours, which, among the many forms they assume, may sometimes approach so near

to a hemisphere or semi-cylinder, either in the upper or lower surfaces, as thereby to make the sun's rays converge so much, as to scorch the plants or trees they fall upon. I have observed those white clouds which appear in summer, acting as if they were so many mirrors, and occasioning excessive heat in particular places, and also a kind of hollow clouds full of hail and snow, during the continuance of which the heat was extreme; after this came a sharp cold, and then the clouds discharged their hail in great quantities, to which succeeded a moderate warmth. Frozen concave clouds, therefore, are the cause both of a vigorous heat and a succeeding cold; and such sudden changes, it is evident, must be very injurious to trees and plants of all kinds. Against this enemy to gardeners, I know of no remedy, and therefore leave it to some abler person than, Sir, &c.

ROBERT SUTHERLAND.

Gaddeston Park, Hertfordshire,
January 31. 1827.

ART. VII. *On the various Uses of Rhubarb Stalks.* By Mr. JAMES LUCKCOCK, of Edgbaston, near Birmingham.

MR. LUCKCOCK refers to the *Monthly Magazine* for September 1817, August 1818, and November 1819, for what he has said on the culture of rhubarb; he complains that the plant is not treated of in the third edition of *Nicol's Kalendar*, but in Mr. Nicol's time the plant was little attended to; and he states that he has three sorts of which he knows the name of only one, called the Turkey Rhubarb, *Rhèum palmatum*. The produce of this, according to his account, is much less than that of the other two sorts, which, from sketches he has sent us, are obviously some of the hybrid entire-leaved varieties. Offering Mr. Luckcock our best thanks for his communication, we give the following extract from it, as the most likely to interest our readers:—

Since the publication of the documents in the *Monthly Magazine*, the increase of produce and demand in this neighbourhood has been twenty-fold, perhaps fifty; and I feel a proud gratification, when I am sometimes told that this increase has probably been chiefly owing to my statements. This has induced me to continue my observations, and to endeavour to point the public attention to its various merits. I need not appeal to the experience of others for its delicious flavour, but I can, from long attention, pronounce it to be equal to the

choicest of our fruits in its effects on the human frame during the sultry months of the summer, being cooling, and slightly cathartic. I cannot recommend a more palatable or wholesome article, and more especially if taken cold in hot weather, than the pies we use in our family. With a little yeast put into the crust, we have it light and porous, about an inch or an inch and half thick. This I believe to be the only kind of pastry that is good for the stomach, and decidedly so for that of an invalid; and there are few constitutions so feeble or delicate, but what may freely partake of it without any fear of bilious consequences, or of any flatulence or indigestion. It continues its produce in the gardens from the beginning of May to the end of August, and has another great advantage, that it will make an excellent preserve for the winter. It should not, however, be suffered to grow too old before it is cut; like every other vegetable, there is a point in its age when it is at its highest perfection. We cut it into squares, put it on a pan in single layers, and then place it in an oven so moderate in its heat, as to require about twelve hours for the process; it should have a very small portion of its moisture left; and then we put it into wide-mouthed bottles, with about a fifth or a sixth part of its weight of brown sugar. If, in the course of a day or two, the dissolving of the sugar produces a small supply of liquid, the quantity of moisture is right, and by frequently shaking the bottle for a week or two, the article will be good for use, till the gardens give their next supply. The bottles should be covered with bladder.

I had supposed, from the great quantity of liquid contained in rhubarb stalks, that it might supply a new cider, but find, on trial, that it contains so little of any saccharine matter, that it will not ferment. I, however, made some wine from the juice without any water, and have a few bottles left of ten years' vintage, and it is really very good; but, like all the home-made wines, it is neither more nor less than sugar wine, seasoned with the flavour which gives the name.

Edgbaston, near Birmingham,
July 23. 1827.

JAMES LUCKCOCK.

ART. VIII. *An Orchard in Miniature; or, the Culture of Apple Trees as Dwarf Standards, after the Manner of Gooseberry Bushes.* By MALUS.

Sir,

OBSERVING in your Magazine for September Mr. Harrison's method of growing apples against a wall, allow me to

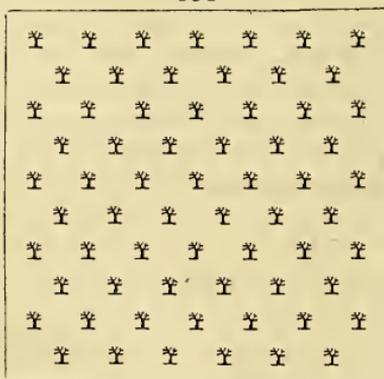
obtrude my simple mode of growing them in open quarters, upon dwarf trees, which I have followed about seven years, the last three of which have successively strengthened my conviction of its utility.

By planting the proper sorts, apples may be *grown in as small a space of ground as gooseberries*; and a small or large square, according to the size of families, appropriated to apples, will grow every year enough to supply their wants. I am not vain enough to think that I am alone in growing them in this way, as I should think horticultural economy would prompt many besides myself to gratify their eyes, their pockets, and their appetites, in so easy a way.

Like most practicalists, I should, perhaps, find it much easier to *tell* and *show* than to write what I mean; but "I will do my best," as the author of *Ivanhoe* makes Hubert say; for my grandfather, though he did not draw a bow, drew a knife.

I have my ground, a strong clay, trenched 2 ft. deep in December: as soon as it is settled, say a fortnight after trenching, taking advantage of a frosty morning, the holes are opened and left for the frost to meliorate. February is the best month for planting on heavy ground: by that time the earth taken from the holes will be in a fine pulverised state. The holes need not be very large; 2 ft. over, and 1½ ft. deep will be enough. With some rich loose soils there will be no occasion for trenching; but then the holes must be larger, say 3 ft. over and 2 ft. deep. The plants must be 6 ft. apart every way. I arrange mine in quincunx. (fig. 104.)

104



This plan will not extend to the strong-growing sorts, as they are not easily kept within bounds; but the following six will amply repay the trouble and trifling expense of planting. I have placed them in the order of their ripening. Manks's Codlin, Hawthornden, Kerry Pippin, Downton Pippin, Christie's Pippin, and the

Old Golden Pippin; to which may be added Coe's Golden Drop, a most excellent late table apple. The trees must be chosen with stems not exceeding 1 ft. 6 in. In September I generally look over the trees, take off superfluous wood, and shorten the long shoots; this strengthens the bloom buds which are formed abundantly upon the young wood of all the sorts named: of course, in doing this, an eye must be had to the formation of the tree, which ought to be gradually brought into a handsome round bush. For the first five years, a row of strawberries may be grown between each row of apples, or any other dwarf light crop; but strawberries are most in keeping, a word which, in every gardening operation, ought never to be lost sight of. Let me add, they ought to be worked on Paradise stocks, or the small wild crab, (mine are on the last,) not by any means on the free stock raised from apple pips, the very worst stock that can be used.

Now this *cacoethes scribendi* is upon me (it is a wet day), allow me a little more space, merely to give you one of the best recipes for keeping hares and rabbits from apple trees. I write from experience; for, till I used it, I had annually a great many trees destroyed in spite of every precaution. Take the commonest train oil and hog's lard (if stale it can be bought cheaper), mix them well, till they are of the consistence of thick paste, which the mixture will much resemble, and apply it rather sparingly with a painter's brush. This will effectually keep off those destructive vermin, and not injure the tree, as the lard neutralises the pernicious effects of the oil.

I am, Sir, yours, &c.

October 10.

MALUS.

ART. IX. *Note of the Result of an Experiment made at Bretton Hall on pitting Apples.* In a Letter to Mr. Donald, of Woking. By Mr. ROBERT MARNOCK, Foreman of the Kitchen-garden at Bretton Hall. Communicated by Mr. Donald, F.H.S.

Sir,

HAVING an uncommonly large crop of apples here last season, we adopted your plan of keeping them (*Gard. Mag.*, vol. i. p. 268.), by putting them in pits in autumn, where they remained all winter, until taken up a few days since; and they still retain the same degree of hardness as when pulled from

the trees, which of course is not the case with those kept upon shelves.

The following are the sorts we kept in this way, and their condition when taken out:— The Ribston pippin, rotted one tenth; Red streaks, three fourths; Flowery town, one sixth; Royal russet, one eighth; Golden pippin, one sixth; Mount house, one tenth; Red Robin, none. We have still a few of the Blackman apple, the produce of 1825, in good preservation: they are kept in a jar amongst dry sand.

I am, Sir, &c.

ROBERT MARNOCK.

Bretton Hall, near Wakefield,

March 31. 1827.

ART. X. *On the Cultivation and Management of Timber Trees.* By QUERCUS.

Sir,

ALLOW me to impress on the minds of landed proprietors, and managers of woods and plantations, the necessity of studying the cultivation of timber as a science. We see very little attention paid to the arrangement of the different sorts of forest trees in planting, whether it regards the different soils to be planted, the situation, or the effect to be produced in regard to landscape scenery; and if knowledge be wanting in the above cases, we see a still greater want of it displayed in the management of plantations, in regard to thinning, pruning, &c. It would be almost impossible to lay down a universal rule for the management of plantations, but there are certainly fundamental principles to be acted upon in the cultivation of forest trees.

The thinning of plantations is a matter of great importance, in regard to shelter, appearance, &c. To make all the trees stand as much as possible in the angles of equilateral triangles, or, in other words, in quincunx, is one rule that should never be lost sight of, for it is evident more shelter will be afforded from trees standing in triangular positions than in squares or rows: besides, the above method disposes the trees regularly over the ground, in respect to their nourishment. How often does the woodman, for the sake of leaving a good tree, as he calls it, leave two trees within a few feet of each other, at least so near, that the one is crushing the other, and cuts away a third, that should have remained as a per-

manent tree. The reason he assigns for so doing is, he wishes to leave the best trees, that is, the largest, not considering that the small tree, if it had a good leading shoot, and was otherwise a well formed tree, is likely to make as good a tree at a future period as the one he has left, or perhaps better. I have seen many plantations disfigured by the above method of thinning, besides the loss to the proprietor. In the course of practice in thinning plantations, especially when under thirty years of age, I have never hesitated to cut down a larger tree than the one next to it, if by so doing I got my trees to stand in a more regular form, and the smaller tree was equally healthful. By following such a method of thinning, there is more to be made of thinnings, besides managing the plantation in a way for its future welfare.

Pruning of woods and plantations is another important part of their culture; but that subject would make my letter too long. I will therefore defer it at this time, hoping the cultivation of timber will become more a professional pursuit.

I am, Sir, &c.

October 13. 1827.

QUERCUS.

ART. XI. *The falling Fortunes of the English Oak defended.*
By QUERCUS SECUNDUS.

Sir,

AFTER some few years of compassionate consideration, I am induced to take up my pen to support the falling fortunes of an old favourite, and which has been, and ought to be, a national one — the old English oak. It is astonishing how much the planting of this very valuable tree has decreased of late, owing to various wiseacres asserting that, in consequence of after removing, and necessarily shortening its taproot, it would never make timber: and then they recommend planting acorns in fields, so as to have woods of oak alone; but these said woods I have never yet seen raised in this manner. Now, my object for troubling you is to combat this opinion, which has gained a vast deal of ground, and to show that the oak will grow with as much luxuriance as the larch, *i. e.* comparatively, and with a soil not decidedly unfavourable. I live in the neighbourhood of some fine plantations of about thirty years' growth, one third of which is oaks, and such oaks as are never seen in common oak woods, where they have risen from acorns, and are evidently indigenous to the soil, gene-

rally gnarled, and branching low down the stem. These, on the contrary, have fine clear boles, 20 to 30 ft. before branching. I have taken the girths of a great number, and find they average 2 ft. 3 in., 5 ft. from the ground. The average girths of the same number of larch, spruce, firs, and beech, which I consider the best nurses for the oak, were about 3 ft. Now this difference is really so trifling, that I felt much surprised and pleased to find this most proverbial of slow-growing trees so close upon the heels of its neighbours, so notoriously opposite in their habits. The elm averaged the same as the spruce and larch, but one or two fine thrifty ones were full 4 ft. in girth. I also met with one oak 3 ft. 9 in., the same height from the ground.

These oaks have all been nursed by the larch, spruce, and beech, which are gradually taken away, to give the oaks room. While they are on the ground, they serve for a game preserve; when they are cleared off, the ground may be thrown open for pasture, or underwood may be introduced, without injury to the oaks, as they root so deeply.

It will perhaps be supposed that the soil upon which I have taken my observations is peculiarly rich; but when I say that it is a hazel sandy loam, with a substratum of loose gravel and sand, you will appreciate its quality. To add to my conviction that the oak requires nursing, hard by the before-mentioned fine specimens are some poor solitary trees, which, with the same soil, scarcely rear their drooping heads more than 10 or 12 ft., and yet they have had the same care, *i. e.* large holes were dug for them, they were kept clean, &c.; but they will not grow freely. In planting oaks the proportion ought to be thus: 3000 trees per acre, at about 4 ft. asunder; of these 1000 should be oaks, 1000 larch, 500 spruce, and 500 beech. The three last will all be valuable in their turns, as they are gradually felled, for rails, &c., and will amply repay the planter; leaving, I will say, 800 oaks, allowing the loss of 200 for casualties. These, again, will require thinning before being finally left to make large timber. How fine the prospect of five or ten acres covered with straight, tall, thrifty oaks, I need not say; for every Englishman will, I hope, appreciate it. The oaks, of which I have given the girths, were all transplanted. Were I asked for advice as to planting, I should say, plant larch, spruce, and beech, $2\frac{1}{2}$ to 3 ft. high, for, if smaller, they generally suffer from hares and rabbits; and oaks $3\frac{1}{2}$ to 4 ft. high, twice transplanted, and well rooted; for upon this more than any thing success depends.

The oaks, in particular, should be stout and clean, not drawn up in a crowd, and, in consequence, weak and spindly.

In this way, on the most moderate soils, fine plantations of oak may be raised with certainty. With the present prejudice against removing and shortening the taproot, we shall have old England a plantation of firs, instead of its ancient bulwark, the *Quercus robur*, which truly may be said to be *salus patriæ*.

Should this be thought worthy a place in your Magazine, I may perhaps again trouble you about plants and planting.

I am, Sir, &c.

October, 1827.

QUERCUS SECUNDUS.

ART. XII. *How to conduct a Gardener's Magazine, and other Matters.* By AGRONOME.

Dear Sir,

HAVING a leisure hour or two this evening, which, by the by, I very seldom have at this time of the year, I have concluded to scribble over a sheet of your paper. What the subject may be is more than I can say at present. I have been thinking that you have a very difficult as well as unpleasant task, conducting a work like the *Gardener's Magazine*. No doubt you are very anxious to encourage all your correspondents by inserting all their productions, however silly or ridiculous; and, on the other hand, very careful of inserting any thing but what may be of real use to the public; and most of your correspondents, though they may be old gardeners, may be but very young authors, such as your humble servant, who, whatever figure he may cut in a field of cabbage, may be very inferior in the field of fame, or the pages of your miscellany. I write this very feelingly, conscious of my great imperfections, and think how much I could mend the letters I have already written; but, like the generality of tradesmen nowadays, I will rather write new things, than try to mend the old. My want of education, particularly that branch of education called *belles lettres*, is a woeful drawback to an aspiring author. All the compensation I can make for such deficiency is, that if I am not very polite or good mannered, I shall always be particularly good humoured. I shall not take the smallest offence at whatever you may think of me, or whatever your correspondents may say of me. "There must be such as me to be of all sorts;" and if I ramble out of my

latitude sometimes, still such rambles are the rambles of a gardener, and your Magazine will show to future generations what sort of gardeners existed in the beginning of the nineteenth century. And no doubt you have a Balaam-box, like the famous Christopher North, which you will occasionally have to empty, for fear of bursting the hinges; and then what a great sacrifice you will make to the god Stupidity: the smoke of your burnt-offering may be a good antidote for the blight on your fruit trees. Yes, Sir, I dare say this very sheet will help to make a blaze in your bonfire. I, however, observe that you have a great personal advantage over all of us, your correspondents. You are like a father confessor amongst us; we tell you all our little secrets, which may never be worth telling to the public. Sometimes I think it would be just as well if we were to confess once a month, instead of once in two months; and, also, that you should only charge 2s. 6d. instead of 3s. 6d. for the Magazine; as then, I think, every gardener in the kingdom, including journeymen and apprentices, would take it in; or, if any refused to take it in, they should be kept in the back ground for ever: it would only amount to about a penny per day, and the new articles would be a good month's amusement, and the work would be valuable for ever. Besides, a monthly magazine would coincide with gardening particularly: you could give the state of Covent Garden market every month, and we could give you the state of the country crops. The work would be a complete kalendar; and if you fear the want of correspondents or contributors, I can help you to two or three, under different signatures, till better cast up. I suppose several of my letters to you have been sent by the blind carrier, as the saying is. Not wishing to give my real name at present, even to you, I sent my letters to different postoffices, and some by the guards of certain coaches, who, being handsomely paid, promised to take them within a few yards of the publishers' door; but having heard nothing of them, I conclude they are lost. I make no duplicates; but one, I remember, was on *free-trade*, and another on *garden libraries* and *iron hot-houses*. If you have not seen them, I shall again write on these subjects; but I intend to change my name, as several of my friends say they have found me out in Agronome; even my employers have told me that they think they see my handwriting in the Magazine! I assured them, with all the *sang froid* I was master of, that I was not the author (of Waverley). I signed one letter Robin Roughhead. Well, Sir, as I said before, every gardener would take in the monthly magazine

at 2s. 6d., if he had any desire to become proficient in modern horticulture. As we are now at peace with all the world, a field is open for improvement, such as was never before in our days. The whole continent of Europe, the whole of the civilised world, are our friends and correspondents; and the progress of gardening, like the progress of intellect, must make very rapid strides at this time. Also, your correspondents (particularly myself) should be very careful of what they write, if they have any wish or desire to make themselves immortal, for one well written article is worth fifty inferior ones. O! how many thousands of mortals have made themselves immortal by a few happy thoughts, or a few happy strokes of the pen, when in a happy humour. I believe I should never have heard of the poet Gray, if it had not been for his *Elegy in a Country Churchyard*; nor of Blair, if it had not been for his *Grave, a Poem*; nor of Home, if it had not been for his *Douglas, a Tragedy*; nor of Thomson, but for his *Seasons*; nor of Milton, but for his *Paradise Lost*, &c. &c.: and thousands might never have heard of Agronome, if it had not been for some happy letter in the *Gardener's Magazine*! which letter, it may be, I know not; I presume it is not written as yet, and shall in future adopt the following method:—The moment I receive the Magazine, I shall read it through, and fix upon a subject, and write my letter the same evening; dream of it, and think of it next morning; read it over next evening, erase, and interline it; dream, think, erase, and interline again every day for a week: then copy off what I think is perfection's self, and send it to you, who must read it, think of it, dream about it, erase, and interline it, and superintend the printing of it; and then the public shall be treated with something capital, you may depend upon it! I shall not attempt to correct the grammar, spelling, or pointing of my letters; your printer's devil must do that: it is quite out of my line. I never learned grammar; if I had, I should have neglected something of more importance. "Good parts are better than parts of speech." At all events, I am sure the Magazine keeps mending every Number. I should like to see a page or two of your *Hortus Britannicus* in the next Number. I think it must be an excellent work, but I have not resolved to purchase it as yet. But I must conclude; I am getting dull and sleepy, and the sheet is nearly scribbled over; and yet I have said nothing either worthy of the Magazine or the name of your very humble servant, who, for the present, signs himself

AGRONOME.

ART. XIII. *On Artificial Compost.* By W. R. Y.

SCARCE any farm can provide for its own tillage; and when the farmer has recourse to artificial manure, the gardener of necessity must be often distressed to conduct his department with credit to himself, or with profit to his employer. Having experienced this difficulty, I learned to economise the means within my reach; and if the result, adopted for some years by myself, be considered of any use, let it be inserted in your valuable Magazine: if thought useless, let it be destroyed without hesitation, and without apology.

In my melon yard are four pits, 18 feet square, and $4\frac{1}{2}$ feet deep, each holding three waggon-loads of bark. In the autumn I riddle over the bark, and, with the riddled part, refill two of them: the other two I refill with dead leaves, treading them down, and leaving them up-heaped, like a hay stack. Upon New-year's-day I prepare the bark-pits for forcing asparagus, radishes, rhubarb, and sea-kale, placing the glass over the pits. On the 1st of February I level the leaves, add some compost soil, and place over these pits the glass lights, planting potatoes, rhubarb, and kale. These crops being used by May-day, I again riddle the bark with a *coarse* sieve, and form a long ridge with the leaves, covering the same with what mould comes from the bark riddlings; and upon this ridge, with the bark mould and a trifle of cucumber compost, I obtain the finest cucumbers and vegetable marrow. The leaves, &c., of the melon and cucumber yard are all turned together once or twice during the autumn and winter; and from this heap I am duly supplied with the very best compost for balsams, geraniums, capsicums, and many other green-house plants.

The expenses of this process will of course vary in different districts; with me it is trifling. The bark costs about 1*l.*, and the leaves are collected in two days by my gardener, two labourers, and a cart and two horses. Thus, after obtaining two crops, I have a remnant of one half the bark, and at least three waggon loads of excellent compost, considerably more valuable than the original outlay.

The compost being proportions of strong soil used for melons, rotten dung, and ditch scourings, blended with decomposed vegetable substances, is admirably fitted for striking geranium cuttings; and I have never seen finer celery than what I this year possess in those drills which were filled with this compost. The leaves are beginning to fall, and I shall lose no opportunity of securing them.

W. R. Y.

ART. XIV. *On the Culture and Propagation of the Chrysanthemum indicum.* By Mr. A. C. LAMBIE, Gardener to Sir George Sitwell, Bart., Renishaw Hall, near Chesterfield, Derbyshire.

Sir,

I TAKE the liberty of submitting for your perusal the following method of cultivating the *Chrysanthemum indicum*, and, should you think it worth insertion in your valuable Magazine, it is at your service.

In the month of May I select as many as are wanted of the best suckers from plants which flowered the preceding year, planting them three in each pot, in size 4 inches deep, and of the same width; placing them on the north side of a wall, or other shaded situation, till they have made some roots, and begun to grow. I then remove them to where they are fully exposed to the sun and free air. When the pots are nearly full of roots, I shift them into others 6 inches deep, in which they are to remain and flower. About the beginning of September, or when there is any appearance of frost, they are taken into the green-house. A few pots are put into the pinery, and more every week for a succession. When the flowers are fully expanded, they are removed to the conservatory. I have them in flower from the beginning of October till nearly the middle of January. When done flowering, I keep them in any cool place, free from frost.

The soil I make use of is turf, taken from an old pasture, rather sandy, and laid in a heap some time before using, leaf mould, well-rotted dung, and sand; the proportion one half turf, chopped small, and equal parts of the others, mixing them when wanted. I water them occasionally with water in which there have been horse droppings, or manure of some kind, steeped. From this treatment, which I have practised for four years, I have never failed in having a fine show of flowers, many of them measuring 5 and nearly 6 inches in diameter.

I am, Sir, &c.

Renishaw Hall, Derbyshire,
Jan. 15. 1827.

ALEX. C. LAMBIE.

ART. XV. *On the Conduct of Gardeners and their Employers, with respect to giving and exchanging Plants and Seeds.* By a NOBLEMAN'S GARDENER.

Sir,

HAVING read in your Magazine (Vol. II. p. 271.) a comment on gentlemen being sordid and suspicious towards their

gardeners' parting with a few seeds or cuttings, &c., to another gardener, or even to a poor cottager, I cannot help making the following observations:—

I will admit that this may in some measure be the case at times, but I consider it is generally brought on by improper conduct of the gardener. I have always been fortunate enough not to be so situated, which I attribute to the plan I have uniformly adopted. In the first place, I never do what I am ashamed my employers should know. If a friend calls on me, and my employers chance to come in the way, I am never ashamed to say who and what my friend is. But I have often visited gardeners who have appeared frightened when their employers chanced to light upon us. Of course, when that is the case, it is obvious that something is wrong, and this naturally enough leads to suspicion.

I always make it a rule to impress on my employers the good, and even the necessity, of giving and exchanging plants with my neighbours, and have always found them to agree with me in this point. I beg freely when I go into a neighbour's garden, if I think I shall not be considered intruding; and I give still more freely if my neighbour comes to see me. I give, even in the presence of my employers, making no difference in that respect.

My object has always been to improve every department under my care, whether of fruit, or flowers, or trees. I have no doubt, if this sort of conduct were more generally adopted, even if a gentleman were at first somewhat suspicious, by finding he had a conscientious servant, he would soon cease to harbour in his breast any such ungenerous thoughts.

The greatest evil I have found to encounter with in a gentleman's situation is from a certain individual that most gentlemen have about their persons, who is apt to take so much on himself, as to make almost every other servant about the family uncomfortable. It too often happens that the person I allude to is of a cringing disposition, making his employer believe that he has his interest very much at heart, while, at the same time, it is quite otherwise; but the deception is not often discovered by the gentleman till the mischief is done. It is a pity gentlemen do not render their gardeners more independent of such men. This sort of person generally wants more attention than the gentleman himself; and, if he is not received by the gardener as he thinks he ought to be, he becomes prejudiced and malignant, and bent on some opportunity of retaliation. I am, Sir, &c.

October 6. 1827.

A NOBLEMAN'S GARDENER.

ART. XVI. *On propagating Pæonia Moutan by grafting on Pæonia officinàlis.* By Mr. JAMES NASH, Flower-gardener to Lady Farnborough, Bromley Hill, Kent.

Sir,

THE method I practise for multiplying the *Pæonia Moutan* is as follows:—In any time, from the beginning of September to the middle of March, I select some good tubers of *P. officinàlis*, or of any other hardy herbaceous kind, and take off cuttings of *P. papaveràcea*, or of any of the tree kinds which I wish to increase; I then slit the tuber from the crown downwards about two inches, form the scion like a wedge, insert it into the slit of the tuber, and fit the barks on one side as exactly as possible; then I bind them well together with good bass, over which I put one turn of brass wire, to prevent the parts from separating after the bass is decayed. I put them into pots deep enough to allow the mould to cover the top of the tuber, set them into a cold frame or pit, keep them close, rather dry, and defended from the sun for the first month, and from frost during winter. When they have perfected one season's growth, I plant them out, or treat them like established plants.

I am, Sir, &c.

Bromley Hill, Kent, Oct. 29. 1827.

JAMES NASH.

ART. XVII. *On the Disappointments incident to Purchasers of Fruit Trees.* By SUPERFICIAL, of Brixton Villa, Brixton, Surrey.

Dear Sir,

OBSERVING in your advertisement sheet to No. IX. the prospectus of the *Pomological Magazine*, permit me, through your medium, to make the Editors of that work a query: What is the Margil apple? Wanting a standard apple three years ago, I applied to those truly honourable men, Chandler and Buckingham, in the Wandsworth Road, and Mr. Chandler recommended the Margil, which I purchased; and wishing for a description of the fruit, I turned to Mawe's *Gardener's Dictionary*, and he describes it, among his second sort of apples, as "middle-sized, ridged, and red-striped." I then turned to Macdonald's *Gardener's Dictionary*, which says, "an excellent apple, about the size of a Nonpareil, of a red colour, with some yellow on one side; often sold in the London market for a Nonpareil." I then turned to Forsyth, who

describes it nearly in the words of Macdonald, but more fully, and puts a reference to Hooker's *Pomona*, p. 33. On this I again called on Mr. Chandler, who said, "They none of them know the fruit; for it is an excellent apple, very like the Ribston Pippin in flavour, so much so, that, judging from the taste, the best judge could not tell the difference." I afterwards asked the foreman to Messrs. Barr and Brooks, who confirmed Mr. Chandler's statement with this modest addition: "In my humble opinion, it is a finer-flavoured apple than the Ribston Pippin, but it will not keep so long." The tree has flourished well, and has every year borne fruit.

I have seen a coloured drawing in the seed-shop windows of an apple, said to be a new sort, called the "Cellini," price one guinea, which, from the wood and fruit, I really think is the tree I have got from Messrs. Chandler and Co. under the name of the Margil: if not, it is easy for the advertiser to forward you some of the fruit for your candid judgment. I do not know him; but, if I am right, I think my brother Cockneys should know that they can have, by crossing the way in the Wandsworth Road, the tree at 3s., the price I paid, instead of one guinea.

I am truly rejoiced at the article in your last Magazine (p. 31.) on the disappointments incidental to orchardists; it is an evil that requires your serious attention, and has been complained of by authors on gardening for above one hundred years (see *Lawrence on Gardening*, 1717; *Switzer's Fruit-gardener*, 1731; *Fruit-gardener*, 1768; and others, that I do not recollect immediately); and I can assure you it is in full operation at the present day. If you will allow me space in another communication, I can give you a list of many tricks of the kind that have come to my knowledge as having been played off in my neighbourhood, and I feel certain they were all done wilfully. I will not mention the names of the nurserymen, but, if any one should choose to ask the question through your medium, they shall have a candid answer; and, if they have been hinted at, when and where. I can only add, that I have been justly used, both in trees and price, by Messrs. Chandler and Buckingham and Messrs. Barr and Brookes. I really wish, according to your advice, they would publish a list of prices, warranting their articles, and I am certain it would answer their purpose. The former house, I know, has a great choice of vines, and I believe they are charged far lower than is usually done for such plants as they furnish.

Yours, truly,

Brixton Villa.

SUPERFICIAL.

ART. XVIII. *On the Rose Cockchaffer, Anomàlia hortensis; supposed to be the perfect Insect of the Ver Blanc, or White Worm, of the French Horticulturists.* By WILLIAM SWAINSON, Esq. F.R.S. F.L.S. &c.

Dear Sir,

I HAVE perused, with much interest, the papers you have brought under my notice on the destructive ravages of the *ver blanc*. The pamphlet of M. Vibert is interesting, and, in all that regards the nature of this larva, is perfectly satisfactory; nevertheless, by a singular oversight, its ingenious and observing author leaves us in total ignorance on a point which seems to be deserving of a primary consideration. What is the scientific name of the beetle, of which the *ver blanc* is but the larva? It is well known that *hanneton* is the vulgar name in France for the cockchaffer of England; but it must be remembered that of these *hannetons* there are several very distinct European species; three of which * are abundantly common both in this country and on the Continent. To persons not acquainted with the peculiar habits which belong to every species of animal, the idea would occur of the *hanneton* of M. Vibert being the large English cockchaffer, the *Scarabæus melolóntha* of Linnæus: but this, I apprehend, is not the case. The larva of the *melolóntha*, no less than the perfect insect, has, at remote intervals of time, appeared in this kingdom in such incredible swarms, and has committed such dreadful ravages, that, but for the authenticated accounts published at the time, our credulity would be severely taxed: but this insect confines its depredations to the open country; as a larva, it feeds on the roots of grass, and, as a beetle, invariably prefers the foliage of forest trees and indigenous shrubs. Another reason leads me to doubt the probability of the *ver blanc* being the larva of the *melolóntha*. During the last two summers, but particularly that of 1826, I observed a prodigious number of the *Anomàlia hortícola* in my garden at Warwick; and I found, upon enquiry, that this species had been equally abundant in other parts of the kingdom. The perfect insect appeared in the greatest abundance during the end of May and the whole of June, swarming upon the rose bushes, and in a few hours destroying or disfiguring every flower that had opened since the preceding day. They appeared to confine their ravages almost entirely to the

* 1. *Melolóntha vulgaris*, *Fab.* 2. *Anomàlia hortícola*, *Leach.* 3. *Anomàlia rurícola*, *Leach.*

rose. Numbers were picked from the bushes every day, and the gardener received much assistance in this occupation from sparrows and other semi-insectivorous birds. No insect is more easily captured than this; and if a few active boys were to be employed at the proper season in picking them from the bushes, the ravages of thousands, nay, of millions of the larvæ during the next three years would be effectually prevented.

Regarding the destruction of the larva, it does not appear that a sufficient course of experiments has been tried; and it even appears a matter of doubt, whether those few which have been attempted have not, in reality, rather tended to increase than to check the evil. It is quite obvious that any chemical application which is injurious to vegetable life must be avoided altogether. A partial application would drive all the insects to seek a closer shelter among the roots, while a general application would destroy both them and the plants together. Whether the free use of lime water, or of any new chemical combination, will so saturate the soil round the roots of the trees, as to destroy the larvæ, seems to me very doubtful; but such experiments are certainly worthy of trial.

Next in importance to the destruction of the larva is the best mode for checking the future increase of the perfect insect; and this, though a slow and prospective remedy, will probably be found the most effectual. I have already alluded to the facility with which this beetle, when at rest, may be caught. We can only have a competent idea of the result which would follow by a numerical estimate. Let us, then, suppose that in an extensive nursery, such as Mr. Calvert's, ten boys were employed to collect these beetles on their first appearance, and that each boy, on an average for twenty days, was able to gather only 300 per day, the result would be the destruction of 60,000 beetles. Let one half of these be supposed to be females, and that each female would have deposited in the earth 100 eggs, two thirds of which only would have survived accidents, we shall then see that a progeny of 2,250,000 larvæ would be annihilated, and their ravages for three entire years prevented.

But this mode, however assiduously followed, can only be partial, and those insects which escape will inevitably deposit their eggs in the same locality in which they themselves were reared. To prevent this, I should recommend that, so soon as the perfect insect appeared, a top dressing, as I believe it is called, of either lime or cinders, be laid on every part of the surface of the infected ground. This dressing should be finely sifted and lie compact, so that the female could not readily

insinuate herself from the surface for the purpose of depositing her eggs beneath. It should also be nearly a span deep; by which means those few which might partially succeed in burrowing below the surface, might either be deterred from continuing the labour, or deposit their eggs above the true soil. This dressing should be left until no more of the beetles are seen: it then might be removed, and all apprehension for the succeeding year dispelled.

I should strongly recommend a perseverance in these two methods to the proprietors of those nurseries where this pest of Flora has unfortunately made its appearance. In conclusion, I trust that the pages of your interesting Magazine will contribute to supply what appears to me the greatest deficiency in the modern science of gardening, namely, a *right* knowledge of those species of insects which are so perpetually destroying the hopes of the horticulturist.

I am, Sir, &c.

WILLIAM SWAINSON.

Tittenhanger Green, near St. Albans,
November 19. 1827.

ART. XIX. *On the Culture of Petunia nyctaginiflora*. By ROBERT SWEET, F. L. S., Author of *Flora Australasica*, *Sweet's Hortus Britannicus*, &c. &c.

Dear Sir,

THINKING it might be interesting to some of your readers to know to what perfection the *Petunia nyctaginiflora* might be brought in a sheltered border of the flower-garden, I am induced to send you the following particulars of one cultivated in my garden. In October, 1826, I turned out of a pot a seedling plant about six inches high, with two or three shoots to it, into a border by the side of a wall, facing the south, where it continued to grow rapidly all last winter, and never had a leaf injured. In very severe frosty weather, I covered it with a mat, but left it exposed whenever the weather was milder. By the middle of March, it was above eighteen inches high, with numerous branches, above half of which I was obliged to cut away in the beginning of April, when I first tied it up to a stick. After this it grew very fast, and, by the end of May, began to be covered with flowers. By the middle of July it was above six feet high, with many hundreds of its fine large white flowers open every day, each flower con-

tinuing in perfection two or three days; and by the middle of August it was eight feet high, and bushy in proportion, covered with flowers from the ground to the top, some thousands being expanded at one time, so that, at a distance, it appeared like a white sheet. In this state it continued to the beginning of the present month (November, 1827), when the flowers began to open more sparingly as the nights became longer; but it still continues to open a few, and is quite covered with others in a bud state, but those of course will not open. I intend shortly to cut it down to the young shoots, which are springing up in abundance from the bottom, and which I expect will produce me an equally fine plant for next year. Wishing great success to your interesting Magazine,

I am, dear Sir, &c.

No. 20. Camera Square, Chelsea,
November 20. 1827.

R. SWEET.

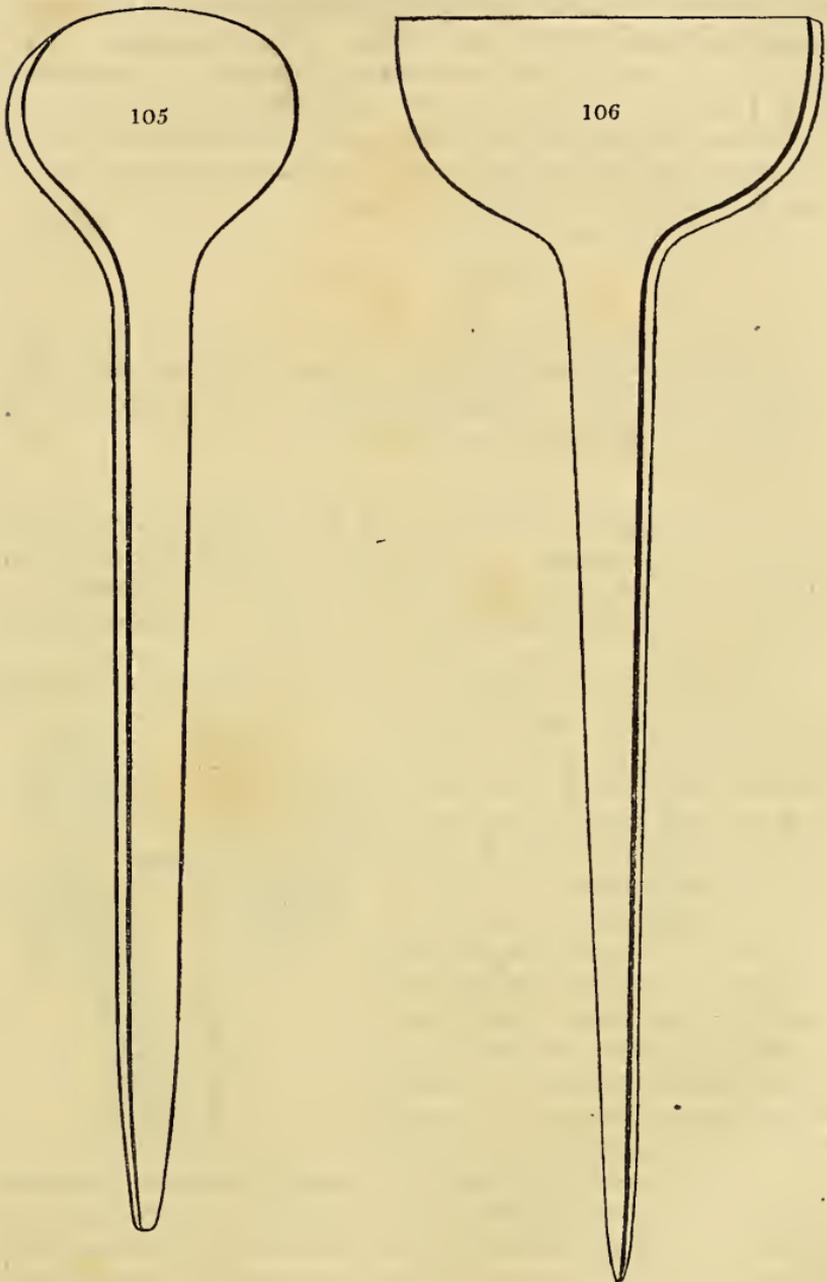
PS.—I omitted to mention that the flowers of my plant were double the size of those that are produced on weak plants; consequently nearly double the size of those represented in the figure of it in my *British Flower-garden*. I have sent you a few seeds of my *Alstrœmèria hirtèlla*, which has ripened in my garden by the side of the *Petùnia*. You had better sow them in a pot at once, and turn them out in a warm border in spring. — R. S.

ART. XX. *A serviceable Tally Peg for Plants.* By J. C.

Sir,

IN the last number of your Magazine you give the figure of a tally peg invented by Mr. Murray of Glasgow. This peg, however, though certainly very neat, would, if used generally for flower beds, prove very expensive in large gardens. Having a considerable collection of herbaceous plants, I have had the tally cast, of which I now send you a specimen (*fig. 105.* full size), and which I think both neat and serviceable. These pegs were cast for me by Mr. Bayley of Cornhill, and cost 30s. per cwt., each cwt. containing between 1600 and 1700 pegs. I am induced to send you this statement, judging that many cultivators would be glad of so great a convenience at so very moderate a price. These tallies, which I use for numbers only, are painted white, and numbered in black, with oil colours, which stand the wet extremely well. I have also seen them,

in a friend's garden, varnished black, and numbered in white,



which does not appear so conspicuous on the beds, but rust much sooner from exposure to the atmosphere.

I am, Sir, &c.

September, 1827.

J. C.

On calling on Mr. Bayley, he informed us that he lost money by the transaction referred to, and therefore could not supply any more at the same price. We suggested an improvement, with a view to naming instead of numbering (*fig.* 106.), and ordered a few hundreds for ourselves, for which we paid Mr. Bayley 2s. 1d. per 100; and this, though a little more than what was paid by our correspondent, is still a very low price. — *Cond.*

ART. XXI. *On the Culture of Amarýllis vittàta in the neighbourhood of St. Petersburg.* By Mr. FRANCIS FALDERMANN, C.M.H.S., Botanic Gardener to the Emperor of Russia, at St. Petersburg.

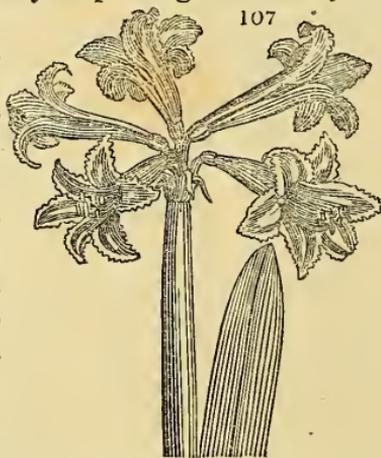
Sir,

IN your Gardener's Magazine I find a great many useful remarks and treatises on gardening in its different branches. This work will become, by and by, a kind of general gardener's repository, indispensable to every one professing the business.

In Vol. II. p. 254. I found a query respecting the *Amarýllis vittàta* (*fig.* 107.) by Mr. Joseph Groom, to know how it is to be treated to flower well. I must own I never had the chance, during the few years I staid in London, to see it well in flower.

As the climate of St. Petersburg is so very different from that of London, and other more southern countries, we are consequently obliged to contrive a great variety of means to force the plants into perfect vegetation; and we flatter ourselves with the success which we have had with several handsome species, which we think we flower as well as could be wished. I shall confine myself at present to the treatment of the above-mentioned *Amarýllis*, one of the most ornamental plants of our hot-houses.

Almost every collection in and around St. Petersburg possesses this plant in abundance, which hardly ever fails to be in flower during the months of March and April, after which



it frequently ripens seeds; by which means it has become very common in our collections. The seeds sown immediately after their maturity, and treated in the manner described below, will commence flowering in three or four years, and will do so every succeeding year.

The seeds, after having been well ripened, are sown in large pots, or flat boxes, in the latter end of April and beginning of May, in a mixture of equal parts of turf and good garden mould, with a little addition of sand. They require the heat of a good stove or hot-bed to germinate them quickly and vigorously. They will come up in a very few days, and will sometimes grow till the end of July; during which time they must be frequently watered, to have them in a continually moist state; by which means the bulbs attain, the first year, the size of a large pigeon's egg. After the leaves have commenced to become yellow, the plants must by degrees be less watered; and at the end of August they are generally quite done growing, and the leaves all decayed. Then they ought to be kept dry upon a shelf, in a stove or in a greenhouse, in the driest and warmest spot. In this situation they should remain till the end of November, at which time they must be carefully taken out of the pots and boxes, the mould taken entirely away without injuring the roots, which are partly still alive, the decayed roots removed, and the bulbs potted again in fresh mould of the same kind, and placed in a dry but warm situation in the stove, without, however, being watered: the damp of the house itself will give sufficient moisture to occasion the circulation of the sap. At this period they will again form young roots, and in the month of January bring forth young leaves: then they may be gently watered, and gradually more so, until they are again in a vigorous state; at which time too much water cannot be given to them. The vegetation will cease at the same time it did the first year; and, by the continuation of the same treatment, in the third year some of them will come into flower, though weakly. The fourth year, and every year afterwards, when treated in the same manner, they will flower in the months of March and April without fail, and ripen abundance of seeds.

It is particularly recommended to give them, during their full vegetation, and especially after flowering, a great heat and plenty of water, to perfect the bulbs for the succeeding year.

After the bulbs have attained sufficient strength, they will push two scapes, and some of them will bear four, six, and afterwards eight flowers, which, by their excellent scent, per-

fume all our houses. This plant may certainly be ranked amongst the first of its family; nothing excels its beauty. When not kept too hot during the time of flowering, the flowers will last above two weeks. As it seeds so freely, from these might, by impregnation from other species, be obtained many varieties, or perhaps new species.

I remain, Sir, &c.

J. FALDERMANN.

Imperial Botanic Garden, at St. Petersburg,

August 14. 1827.

ART. XXII. *An approved Method of obtaining a Crop of Early Cauliflower, a week or ten days before those treated in the usual way.* By J. M.

FROM a seed-bed which has been sown two or three days *after* rather than *before* the customary period, select a score or two of healthy plants. Pot them singly into the smallest-sized garden-pots, in rich loamy compost; water, and plunge them in a cold-frame, shading for a short time, till they have taken root. Afterwards give air daily, drawing on the lights at night, and defending from severe frost with a mat or two; water frequently with tepid manured water, and keep clear from decayed leaves and weeds. Examine the state of the roots from time to time, and, as soon as they become in the least degree matted, immediately shift into 48-sized pots, with the before-mentioned compost; and replace them carefully in the same frame, attending to them as before. When the roots have nearly filled these last pots, shift into thirty-twos, and, in due time, they will ultimately require twenty-fours; or, if they have grown rapidly, even eighteens. After being fairly established in these, they may be removed into a vinery, peach, or other forcing-house, there to remain till the end of March or beginning of April, when they may be turned out into the open air, between the asparagus beds, or any other warm and well sheltered spot. They will require to be put in pretty deep, and protected by hand-glasses, or at least by boughs of trees, that they may not suffer from the sudden transition or inclement skies. It is hardly necessary to add, that the whole success of this mode of culture depends entirely on the plants receiving no check in any stage of their growth, either from want of timely re-potting, water, air, or sufficient protection from frost. While in the house, if not supplied with water in pans, they are very liable to button, and thereby wholly defeat the end in view.

J. M.

Chelsea, October.

PART II.

REVIEWS.

ART. I. *Memoirs of the Caledonian Horticultural Society.*
Vol. IV. Part I.

(Concluded from p. 195.)

7. *Observations regarding the Management of Oak Coppice Woods, &c.* By Mr. Robert Hosie, Gardener to the Right Honourable Lord Lynedoch.

PLANTING of oaks for coppice woods, in Scotland, has been carried to such an extent, that Mr. Hosie thinks there is a probability it may be over-done: but, should this be the case, it is easy to allow standards to get up among the undergrowths; and the object of Mr. Hosie's paper is to recommend leaving the standards in groups, instead of scattering them regularly over a wood. The advantages of this practice are, more air for the undergrowths, and a more picturesque effect. For instance, if sixty trees were left regularly over an acre, the distance between them would be about 26 or 27 ft., which is too close for coppice wood to thrive under; on the other hand, if sixty trees were left in three groups, it would leave at least five-sixths of the acre perfectly clear. The distance at which oak plants for coppice wood should be planted, Mr. Hosie, after a good deal of experience and consideration, thinks should be 10 ft., or about four hundred and fifty plants to an acre. "By reasoning from analogy we find that, both in horticulture and agriculture, there is a certain distance that will produce the greatest weight of crop; if too great, the ground is not altogether occupied; if too close, the plants are choaked up for want of air. It is only by examining the distance in the most thriving plantations, that we can form any thing like a correct notion of the subject; but, from any observation it has been in my power to make, I should certainly prefer 10 ft. to 8 ft."

Rearing oak and pine woods by sowing the plants where they are ultimately to remain has been tried by Mr. Hosie, and found not to be the most profitable way. Much has been said

about the advantage of not disturbing the taproot; Mr. Hosie has found "that it is only to a certain depth, and where the soil suits, that the taproot takes a perpendicular direction, a horizontal one afterwards being the most material. As to the difference of expense betwixt sowing and planting, let it be considered that, within the compass of a few square yards, as many trees can be raised as would plant some acres, and at a trifling expense; while, by sowing a large plantation at first, the extra-expense of seed alone would nearly counterbalance that of planting, besides other disadvantages, such as the young plants being thrown out by the frost, particularly the pine tribe, and the loss of the growth of a year or two, which may be saved by planting stout plants." Stout oak plants of from 3 to 5 ft. high, with very little pruning either of the roots or tops, are what Mr. Hosie recommends. Pruning at an early age has very little effect on the future form of the tree, for what is the leading shoot at first planting, very seldom remains so.

"To form handsome trees in extensive woods, and without retarding their growth, in my judgment, pruning with a large knife, seven or eight years after they are planted, when they begin to grow vigorously, is the best way. The pruning of all the lateral branches, great and small, up to a certain height, as is practised by some, I think a bad plan; it is not the way to form handsome trees, and in general gives such a check to their growth, that they are some years before they recover. It is very doubtful to me, if the pine tribe ever should be pruned at all, unless in taking off the dead boughs; but, if it is necessary to prune the live branches, they should not be cut too close to the stem at first, but left as snags, and cut close afterwards, when the sap is gone."

"The object of thinning coppice stools, is to leave such strong shoots, that none of the others that may afterwards spring from the same stool will ever be able to contend with them."

"It often happens, particularly at the first cutting of an oak coppice, that a considerable number of the stools do not shoot the first year, and sometimes not even for two or three years afterwards, and these generally the healthiest of them." A remedy for this is, "to remove the earth from the roots a little way round the stem immediately after cutting." It is of great consequence to cut the stems low; "for, as the young shoots generally spring from between the angles of the large roots or fangs, so the lower down they come the better; for, when they spring from the root itself, they pro-

duce the most luxuriant wood." This is agreeable to the experience of Menteth, and to the law of nature as to the shooting of ligneous plants. (p. 245.)

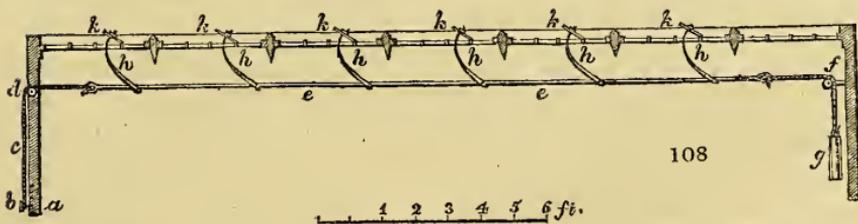
"As to what is called dressing the stools, I have every reason to think it is quite useless; it is no doubt meant to prevent that part from rotting, which it will not do. In general, the part of the stool near the surface, or what is above ground, will decay long before next cutting, although, in some very few cases, where it is left high, and the shoots spring from the top, it may in some measure be preserved, although in an unsound state; but I by no means think it a disadvantage for that part of the stool that is above ground to rot soon, as in that case the new shoots will be sure to come from the roots."

Oak Mr. Hosie considers by far the best tree for hedge-rows; and the best effect, and at the same time the least injury to the hedge and the corn crops, is produced by planting them irregularly. When planted regularly, they have a tendency to stagnate the air. Oak plants for a young hedge should be 3 ft. high or so, and planted along with it; for an old hedge, 6 or 7 ft. in height; so that their tops may be beyond the reach of cattle.

8. *Account of an improved mode of ventilating Hot-houses.* By Mr. John Tweedie, Gardener at Eglinton Castle.

Instead of giving air at the top of the roof by letting down sliding sashes, Mr. Tweedie raises up by a sympathetic movement two or three panes in a small tin frame, which he calls a hatch.

In the longitudinal section of a roof ventilated in this way (fig. 108.), the ventilators (*k*) are shown in a half open state,



and the cord, rod, or jack line (*e*), to which the lever (*h*) is attached, is shown balanced at one end by a weight (*g*), and fastened at the other by a movable hand-pin (*b*). In one of the upright styles or door-posts (*a*), in the end of the house, are pierced several sockets at 6 in. distance. "Into these sockets, an iron hand-pin (*b*) is introduced, regulating the

whole apparatus, by being moved upwards or downwards, from socket to socket by the hand, according to the various degrees of air-vent wanted. This iron pin is fixed to a cord or chain (*c*), passing through the style (*a*), over a pulley (*d*), which cord or chain is fixed to a rod or chain (*ee*), having an axle joint at the junction of each lever. The rod or chain, when the hand-pin (*b*) is moved up or down, moves horizontally between a pulley (*d*), and another pulley (*f*), fixed to the corresponding style at the other end of the house, by the action of a weight (*g*), attached to the end of the rod by a cord or chain passing over the second pulley (*f*). This horizontal rod or chain (*ee*), in its motion, thus produced by a weight (*g*), operates at every joint, as already mentioned, on bent levers (*h*), which, being attached to hatches (*k*), lift them or lower them so as to admit or exclude the air, as circumstances may require. The upper end of the lever is fastened to the hatches by screw-nuts, in order that, by unscrewing them, the sashes may be freed from the levers, and removed at pleasure for repair. The hatches occupy the place of two, three, or four panes lengthwise at the top of the sash, proportioned to the dimensions of the house, and are hinged upon one of the astragals, projecting both at the sides and the ends, to exclude the wet."

In various descriptions of hot-houses, this mode of ventilating may be found worth adopting; it will certainly be found cheaper than sliding sashes, and air may be given or taken away in far less time; but a still better mode of ventilation is that of Mr. Atkinson already described. (Vol. II. p. 200.) One advantage of Mr. Tweedie's plan is, that it may be applied with facility to hot-houses already existing; but where new houses are to be built, we should decidedly prefer Mr. Atkinson's to every other.

9. *Queries relative to the Sowing, instead of Planting, of Forest Trees.* By Messrs. Bishop, Beattie, and Mitchell.

Some speculations on the taproot, and the danger of destroying it in transplanting forest trees, which appeared in the *Caledonian Society's Memoirs* (vol. ii. p. 416), and which these three gardeners, who rank among the most intelligent and experienced in Scotland, consider as "strange lights apt to mislead the unwary," have led to these queries, which are as follows:—

"1. Has it been ascertained by accurate experiments, that the taproots in timber trees have a general tendency to pro-

mote their vigour and growth, after the third and fourth year of their age?

“ 2. Can instances be pointed out, to prove the advantage of raising timber, by sowing seeds where the trees are to remain, in preference to planting the same extent of ground with young trees, two or three years old, a year or two later, seeing the practice of sowing muirs and waste lands with seeds of the Scotch fir and larch has been long since attempted in Scotland, but without the expected success?

“ 3. What proofs can be adduced to contradict the results of experiments made in Dean Forest, and ordered to be printed by the House of Commons in the year 1812, from which it appears, that the transplanting of oak trees, in particular, was followed by an excess of growth, far superior to that of others which were never transplanted, the cases of both being perfectly similar?

“ 4. Wherefore should not the transplanting of trees, or stopping of the taproot at a proper age, encourage more the growth of roots in a horizontal direction, which have always a freer range to procure nourishment, and are more likely to be benefited by the influence of the sun and rains, than those which strike perpendicularly into a sterile subsoil, and which are the soonest broken by violent winds, when the tree attains much height, as is very observable in larch, and fir trees blown over, and which in many cases occasions the rot in such trees, which begins in the root, and proceeds upwards?”

The Council (April 5th, 1827) recommend these queries as the subjects of communications founded on experience, for which medals will be awarded, according to the merits of such reports.

10. *Account of a simple and effectual Method of destroying the Scaly Insect.* By Mr. W. Beattie, C.M.H.S., Gardener to the Earl of Mansfield at Scone.

Mr. Beattie found that neither chamber-lie, nor soap-suds with the addition of soda, nor Mr. Scougall's clay paint, would destroy these insects; but he thought of trying boiling water, which he found an effectual remedy. On a mild day in February, a Green Gage plum tree was unnailed from the wall, and with a painter's soft brush washed all over with boiling water, at least as nearly to boiling as it could be carried a short distance in a small water-pot. No injury was found to be done to the tree, while the scaly insect was entirely destroyed. The following winter, the whole of the trees infested were treated in a similar manner, and the insect completely

got rid of. A very intelligent friend of Mr. Beattie's washed trees with boiling water with the garden engine in frosty weather, and the trees sustained no injury. Mr. Beattie tried boiling water on trees in the peach houses infested with the white bug, and found it completely successful. He therefore considers the efficacy and safety of this simple application as completely established.

II. *Remarks on the Locust Tree recommended by Mr. Cobbett, with Notices of other more desirable Forest and Ornamental Trees.* By Thomas Blaikie, Esq. C.M.H.S. and C.M.C.H.S.

Mr. Cobbett's locust is the *Robinia Pseud-Acacia*, and he affirms that "no man in America will dare to say that he ever saw a bit of the wood of this tree in a decayed state." Mr. Blaikie, however, has seen it in a rotten state in France; and he adds that in that country the *Robinia* is very apt to be injured by the wind, and that a tree with a straight stem of 20 ft. is seldom to be met with; he therefore advises gentlemen not to destroy "the villanous Scotch pine and the infamous elm, and plant nothing but locust," as Cobbett recommends.

"In the year 1807, M. François de Neufchateau published a little book, entitled, *Lettre sur le Robinia connu sous le nom impropre de Faux Acacia*. In this book he speaks with enthusiasm of the Acacia, recommends the planting of it in all soils and situations, and even the making hedges of it; and he enlarges on the many uses the wood can be applied to. This high character enticed many people to plant Acacias both in the gardens about Paris and in many avenues; so that abundance of seeds of the Acacia could be procured within a few leagues of Paris. Most of those I have seen are bushy, low, or broken trees, often disfigured, and not comparable to either elm or oak, or any of our common forest trees. The branches are covered with strong prickles, so that where wood is wanted (which is a great article in this country), the woodmen exclaim against that of this tree, as they cannot handle it without danger. Few people, therefore, at present think of planting the locust tree."

Some plantations of Acacias in the park of Guiscard, of fifty years' growth, are for the most part disfigured, the branches split or broken, and lying upon the other trees. Locust trees could not serve to shelter a country seat in a northern climate. The small roots of *R. Pseud-Acacia*, *viscosa*, *hispida*, and *spectabilis* are sweet, and resemble in taste and smell the liquorice root.

Notwithstanding these observations of Mr. Blaikie, the rapid growth of the *Acacia* when young, or when cut down to the ground, renders it a very profitable tree as underwood; for the purposes of hop-poles, fencing, or firewood.

The white oak is recommended by Mr. Cobbett as very tough and flexible, being employed in America for whip-handles. Mr. Blaikie mentions that the whip-handles of the coachmen about Paris are made of the *Céltis austrâlis*, and are also very tough. They are known by the name of *Perpignans*, being procured from that quarter. The *Plátanus* Mr. Blaikie mentions as growing to an amazing size when planted in a moist soil. Several at Troyes, in Champagne, have clean straight trunks of 100 ft., and magnificent heads. The timber of the *Plátanus* was proved, by the unfortunate M. de Malesherbes, about forty years ago, to be upwards of twice as durable as that of the elm.

12. *On scraping off the old Bark of Fruit Trees, and on the Difference between the Effect of early and late Pruning.* By Mr. Thomas Thomson.

Mr. Thomson thinks that trees do not decay so much from want of fibrous roots to imbibe nourishment, as from the compression of the alburnum by the indurated outer bark: hence the advantage of scraping it off in old trees, while removing it from young trees does harm. Mr. Thomson has practised scraping off the outer bark of old trees for upwards of twenty years. The best season is the spring and autumn; and, after the operation, the trunk and branches are painted over with a paint made of dried clay, pounded into a fine powder, and mixed with water.

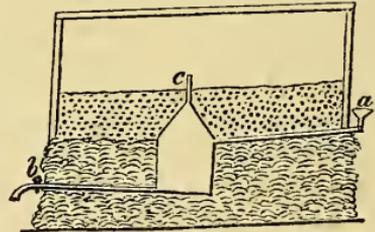
The following observations show the importance of attending to the period of pruning trees, accordingly as it may be desirable to make them push early and vigorously, or to retard and weaken their shoots, or retard their blossoms, so as to protect them from spring frosts: — “Having employed a hedger to cut over a strong, healthy thorn hedge, that enclosed a plantation of considerable extent, he had cut over a large portion of it early in autumn, but, being called off to some other duties, the remainder was cut over in the winter and spring following. The whole was cut at $2\frac{1}{2}$ ft. from the ground, and all done by the same persons. I happened to go, in the latter end of the summer, to view the plantation, having thinned it out the preceding autumn, when I was much struck with the unequal growth of the hedge. At first I imputed it to something in the soil, but, on examining it more minutely, I found

that it was owing to the different seasons of cutting; for the part that was cut in autumn had made shoots 4 ft. in length, while that which had been cut in winter had made very few shoots, and few of them more than a foot in length. The part that was cut in the spring was little inferior to what was done in the autumn. A marked lesson how cautious one ought to be as to the season at which they prune the more delicate sorts of fruit trees."

13. *On the Raising of Seedling Ranunculuses, with an Account of some fine ones exhibited to the Society on the 22d of June, 1826.* By Mr. John Waterston, of Paisley.

The seed was gathered about the end of July, and kept in the seed-vessel, with the stems attached, till the March following. It may be sown either about the beginning or middle of that month. It was sown in boxes in a mixture of auricula mould and fresh sandy loam, and before covering with earth well watered: it was then covered with about $1\frac{1}{2}$ in. of the same mould, very finely sifted. The boxes were put in a bed of half-spent tanner's bark, covered with a frame of two lights, and the following very ingenious mode was adopted of supplying heat, when that of fermentation failed:— A tin vessel, of the capacity of 6 or 7 gallons (*fig.* 109.), was buried in the bed, so that its top was about 8 in. under the surface of the soil.

In cold evenings this vessel was filled with hot water by means of the funnel and pipe (*a*), which was found to keep up a temperature nearly equal to that during the day. When the vessel is to be refilled with hot water, the



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cold is withdrawn by the cock and pipe (*b*), and there is a small pipe (*c*), from the top of the vessel, to admit the escape of air in filling. A good many of the seeds were eaten by the larvæ of insects; and, to prevent this, it is recommended that compost heaps should be covered at the beginning of autumn, when most insects are laying their eggs. [A plan that well merits adoption.] During the first year the plants require to be kept in a regular state as to moisture, and shaded from the sun. When the leaves wither the roots are carefully lifted, and kept in a dry place till the ensuing February, when they are again planted 1 in. deep in fine soil, and many of them flower in the following July. A list is given of the flowers exhibited, which were considered very fine.

14. *Account of a Method of cultivating the Grape Vine.* By Mr. Ninian Niven.

The method is to grow and fruit the plants in pots, the pots plunged in a bed of leaves or tan in a flued pit, and the shoots trained on a trellis under the roof. During the first and second year a crop of melons may be obtained on the leaves or tan. After the vines have been fruited two or three years, they may be thrown away, and their place supplied by young plants, which will bear larger bunches and berries. The great advantage of this plan is its economy; and time may be also said to be gained by the production of a crop of melons the first year. If leaves are used instead of tan, the vines may be turned out of the pots at each end of the pit, and their shoots led along the trellis to the ends opposite.

15. *On mulching and watering Fruit Tree Borders.* By Mr. James Smith, Gardener at Hopetoun House.

Mr. Smith recommends what, we think, is in general too little attended to, "very moderate cropping of fruit tree borders, and keeping the vegetables at some distance from the wall." After the wall trees at Hopetoun House have received their winter dressing, the borders are dugged over, and laid up in a rough state, so as to retain the moisture which falls during winter. Planks for walking on are laid along the bottom of the wall, and well-rotted hot-bed dung is spread on the border, about four inches thick, beginning at the base of the wall, and extending outwards about eight feet. "This mulching remains till the dry weather of summer is past, when it is removed, and the surface of the ground is hoed and raked smooth, to reflect the rays of the sun, and to promote the maturity of the fruit, and the ripening of the flower buds of the following season."

"The principal use of mulching is the prevention or diminution of evaporation. The moisture upon which fruit trees, in dry years, subsist, is solely the produce of the winter and spring rain, as must be known to every one who has observed to how small a depth the summer showers penetrate exposed and hardened soils. The case is even worse where there are crops of vegetables, as they extract the sap which is in the ground, and disperse the slight rains before they reach the earth. I have seen a fruit-border so exhausted and parched, by a crop of early peas or cauliflower, as to be scarcely capable of supporting any thing before the damps of autumn had restored it to somewhat of its proper tone. It is evident, that whatever prevents an excessive escape of moisture by evaporation, must prove very beneficial."

“ In the course of the summer, the borders are frequently watered over the dung. This is generally done pretty freely, and, in very dry seasons, large quantities are applied. From what I have already said, this will, perhaps, be thought superfluous, as it may seem that the water will not subside far into the soil. But this is not the case; for the soil below the dung is soft, and comparatively damp, and therefore does not resist the fluid. But, even upon the supposition that the water does not sink far into the ground, the practice must be beneficial, since, by this means, the evaporation is confined, in a great measure, to the surface of the dung; whereas, were the dung to become dry, it must arise from the soil below.

“ My belief of the utility of mulching and watering, does not rest on theoretical considerations merely: it has been amply confirmed by the experience of the last season (1826). In many gardens, apricots were very diminutive: here we had an uncommonly abundant crop; and, notwithstanding the drought, the single fruit were, perhaps, one third larger than those for which I obtained the Society’s medal in 1825. I found the same treatment equally beneficial when applied to the finer pears, such as the Brown Beurrée, Gansel’s Bergamotte, Crassane, &c.

“ I am fully satisfied that the *mildew* on peach trees may be prevented, or in a great measure kept under, by seasonable and copious waterings, in the months of July and August. It is stated by Mr. Harrison, that this disease is induced by the roots being in a dry condition, and the juices consequently stagnant, while the air is charged with moisture. My own experience completely coincides with that of this ingenious horticulturist. I have no doubt that, whatever be the original cause of mildew, that its ravages are greatly accelerated by the circumstances mentioned. I do not mean to be understood to say that waterings, however copious, will remove the disease when fairly established, but unquestionably they are an excellent preventive. The best method of applying water to the roots of peach as well as other fruit trees, is over dung, since the mulching prevents the water from battering the soil, and running off during the operation.

“ The practice of mulching and watering may appear expensive and laborious, but it is amply compensated by the improvement of the fruit. Watering is doubtless laborious in those gardens which are not properly furnished with water-pipes. Being fortunate at Hopetoun House garden in this respect, I find it an easy matter; indeed, a single boy frequently performs the operation. As the water is poured upon the

mulching, it can be done at any period of the day, when it is not required for any other purpose."

16. *Notice of some Forest and Ornamental Trees which deserve the Attention of Scottish Cultivators.* By Gilbert Laing Meason, Esq.

M. André Michaux noted to Mr. Laing Meason the following trees and shrubs, as deserving the attention of gentlemen in Scotland:—

Bétula papyræa, the paper or true Canadian Canoe Birch. A tree of rapid growth, excellent timber, large, and highly ornamental.

Fráxinus americana, White American Ash. Quicker in growth than the common ash; but the young wood apt to be injured by the winters in Scotland.

Pínus larício, the Laricio or Corsican Pine (*Gard. Mag.*, vol. i. p. 79.), found also in the Pyrenees. "It is a very handsome tree, assuming more the habit of a deciduous forest tree than of the pine or fir class. The wood is said to be good, and the growth is quick."

Ilex chinénsis, Chinese Holly. Of rapid growth; leaves small, and without spines; well adapted for division hedges in flower-gardens.

Orme de Sibérie, or Siberian Elm. "This is an excellent fast-growing tree, possessing the quality of toughness in a degree superior, perhaps, to any other tree in Europe; at least, from repeated trials, it has been found in France to be one of the toughest and most elastic of woods. I have planted a few specimens, which thrive vigorously in a strong soil in Forfarshire. The tree grows to a considerable size, and is quite distinct from the *Ulmus pùmila*, which is often called Siberian Elm in our nurseries."

Bourgene de Canadie? "An evergreen that has proved itself in France to form an excellent hedge." We shall be much obliged to our correspondent M. Soulange-Bodin for the scientific names of this shrub and the preceding tree.

Júglans álba americana, White American Walnut. A fine large tree, of much quicker growth than the common walnut.

Tilleul argenté de Constantinople, Silvery Constantinople Lime. A fine tree, with delightfully smelling flowers; probably the *Tília argétea* of Waldstein and Kitaibel.

17. *Notice of the Hardy Fruits of Upper Canada.* By Mr. Thomas Blair.

The apples in the orchards are particularly fine: they are all raised from seed; and, though many of the trees produce

fruit fit only for cider, yet these are more valuable to the inhabitants than the finer sorts, as they can find a ready sale for the cider, which they could not do for the apples, were they ever so finely flavoured.

There are several fine healthy old fruit trees in Lower Canada; and among the apples, the Pomme grise, Bourassa, and Fameuse, esteemed French varieties.

“ I was informed that the Island of Montreal, about thirty years ago, was much famed for the quantity and excellent quality of its pears; but now there are very few of that fine fruit in the country, the old trees are fast disappearing, and the greater part of the young ones are in an unhealthy state; and no person could assign any cause for this general decay of their pear trees.”

“ Apple trees I have frequently seen in an unhealthy state, both in Upper Canada and the United States, where they had been planted on land that had been several years cleared, or in cultivation; whereas, on the contrary, when they are planted on ground newly cleared, and amongst the stumps and roots of forest trees, there they never refuse to grow, and that most luxuriantly; so that, in a few years, they become large trees much sooner than they would in the same space of time in Scotland. For that reason, most of the settlers that emigrate from Scotland to that country are led into an error: they generally commence raising apple trees from seed, and defer planting an orchard until the stumps and roots of the forest trees are nearly all decayed, and the land frequently ploughed; whereas, much time could be saved by planting the trees as soon as the land is cleared; and trees can be purchased at a moderate expense from small nurseries, which are now pretty general in the country.

“ The Kentish Cherry succeeds better in America than any other, and produces better-flavoured fruit than in Britain; it is chiefly propagated from suckers. Good crops of Blackhearts, Maydukes, and other varieties, are produced in Kentucky and Virginia, but the trees are much injured by the intense heat of the sun.

“ Peach trees succeed tolerably well in Lower Canada on walls, with a little protection from mats in winter. In Upper Canada, particularly on the Niagara river, they succeed very well as standards. They grow with great rapidity, but very little attention is paid to them. They are all raised from seeds, and many will produce blossoms, if not fruit, the third summer. A few are large and fine-flavoured fruit, and many tolerable.

“Quinces on the Niagara river produce generally a good crop. They are certainly a finer-flavoured fruit than those produced in England, being free from the disagreeable smell that the English quinces have, and are esteemed the best fruit for preserving in that country. The trees are remarkably dwarf, which I suspect is owing to the method they have in propagating them, which is altogether from cuttings, and these are generally branches of considerable size, and planted in the spring.”

18. *Hints on increasing the Warmth of Garden Walls, by painting them Black; with a Description of an improved Mode of constructing Subdivision Walls in Gardens, &c.* By Mr. John Henderson, Den Nursery, Brechin.

Painting walls black has been tried in several places, and the result has been better leaves, larger and more numerous fruit, and the destruction of the larvæ of insects on the wall. A cheap way of blackening a wall is first to paint it with boiling coal tar, and, when that is thoroughly dry, to paint over again with black oil paint: this would produce a jet black.

Old ragged walls may be improved by plastering them over, and attaching to them a wire trellis. “This is by no means a costly expedient; and on an old wall I lately had the operation performed as follows:—Before the plaster was put on, a number of nails were driven into the wall, about 3 ft. apart, in horizontal lines, which lines were about 9 in. asunder. After the plaster was dry, a wire of a proper thickness was fastened to the first nail, and from it drawn very tightly and twisted round the second, and so on with all the rest. The nails were then driven home, and the trellis was perfectly firm.”

The coping of walls need not project more than an inch or two: any shelter which the tree might require when in bloom can be supplied by movable coping boards, or netting or canvass placed against the wall.

Subdivision walls in gardens might be constructed of lath and plaster, and stand at an angle of 55°, sloping to the sun like the roof of a house. Mr. Henderson has been in the practice of training fruit trees on a sloping bank of earth, fronting the sun, and found them ripen ten days earlier than against a perpendicular wall of the same aspect. Such walls require to be sheltered with thin canvass both day and night till the fruit is set; “for it is probable that the position of this wall may be as cold at night as that of a standard tree: but this can never detract from its claims, since it is not so much the shelter of a

wall, as the reflection of the sun's rays upon it, which brings fruit to perfection. These walls might be erected in gardens in many different ways: they would look very well in front of a hedge, and the space underneath might be used as a mushroom house, a tool shed, or a storehouse for culinary roots during winter. Banks of earth might even be thrown up, and, after being paved with stone, and plastered, might be used as inclined walls. Steep terrace banks might also answer the same purpose."

In training fruit trees it should be a principal object to improve their climate; but the mode of training and pruning too generally in use at present is, in this respect, very defective. "By a constant cutting off of breast wood, especially in pear trees and the finer sorts of apples, and of course a continual provoking of the tree to push out more, the spurs become soon of an enormous length, and consequently the fruit they produce must hang at a considerable distance from the wall. Now, it can be proved, by applying a thermometer, that, at the distance of several inches from the wall, the air is not hotter than the general air of the garden; and hence the evil of which I complain. It is not, indeed, uncommon to see the spurs of an old tree standing out like the teeth of a rake, or the bristled face of a cut hedge: nor is it to be wondered at that the fruit of such trees should be always small, and never well flavoured."

Nothing can be of greater importance in the training of wall fruit trees than nailing their spurs close to the wall. "In my opinion, it is owing neither to age, nor deficiency of soil, that many trees bear such small trifling fruit, but to an injudicious mode of training and pruning; and, instead of complaining that the spurs of a tree are too old, I would consider it rather an advantage to have old spurs, since the fruit of old trees, and of old wood, is sooner ripe, and much higher flavoured than that of young ones, provided always that it can be made to grow equally near the walls.

"In order to prevent young trees from running into a number of rough unmanageable spurs, the leading branches should never be laid in closer than from one to two feet apart, and then the intermediate spaces may be filled with bearing spurs, which, I once more repeat, ought to be always closely nailed to the wall."

In a P.S., dated a year afterwards, Mr. Henderson informs us that he finds the difference of temperature between a sloping and perpendicular wall to be generally about 20°. Such walls might be framed of timber, plastered with Roman

cement, and tarred and painted. If vines were planted in boxes or confined beds, in the manner suggested by our correspondent F. N. B. (p. 145.), we have very little doubt that, with a little protection by canvass or woollen netting in spring and autumn, they would ripen their fruit even in Scotland. For the above excellent communication, the Caledonian Society voted Mr. Henderson the London Horticultural Society's medal for 1826.

ART. II. *Verhandlungen des Vereins zur Beförderung des Gartenbaues in den Königlich Preussischen Staaten. Transactions of the Society for the Advancement of Gardening in the Royal Prussian States. Part. II. completing Vol. I. Berlin. 4to. 1824. 7 plates.*

(Continued from p. 66.)

46. *Remarks on the Treatment of Cactus speciosus.* By Mr. Counsellor Fleischinger, of Berlin; with the Opinion of the Committee.

M. FLEISCHINGER had kept this plant for years in a hot-house without being able to throw it into bloom, till at last he placed it in the open air during summer, when it made shorter but much stronger shoots than it had ever made in the hot-house; and in a year and ten weeks after he commenced this treatment, he had several strong flowers. He began this practice in 1815, and continued it with success till 1823, the date of his paper.

47. *Some Remarks on the Gaps arising by the Death or stunted Growth of some Species of Trees in the Leaf-wood Plantations of the Natural Garden at Berlin.* By the Grand-Ducal Head-Gardener, M. Bosse, of Oldenburg; with the Opinion of the Committee.

The natural garden alluded to is a piece of ground laid out in the modern English style of landscape-gardening; and leaf-woods (*laubholzen*) include both deciduous and evergreen trees with broad leaves, in contradistinction to needle-leaved woods (*nadelholzen*), which are composed chiefly of the pine and fir tribe. Mr. Bosse states that gaps among bushes are not readily filled up by inserting new plants, however large, and that a much better mode is to lay down the branches of the adjoining bushes on all sides, or of such as are strongest, or are preferable in point of beauty or utility. In cases where the adjoining plants do not root readily from layers, or do not grow freely, the introduction of new plants must be resorted to;

and for this purpose he recommends such trees as grow rapidly on an indifferent soil, enumerating *Alnus incana*, *Salix daphnoides*, and some other *Salices*, *Carpinus Bétulus*, *Méspilus Oxyacantha*, *Spiræa opulifolia*, *Prunus Pádus*, *Hippòphaë rhamnoides*, *Vibúrnum Opulus*, *Córnus álba*, *Lonicèra Xylósteum*, *Rùbus odorátus*, *Acer rùbrum*, *Pseùdo-Plátanus*, and *campéstre*, *Bétula álba* and *nigra*, *Ulmus americàna*, and *Robínia Pseùd-Acàcia*.

In order to prevent the formation of gaps, and also to bring forth fine masses of foliage, it is necessary to avoid placing together sorts of trees or shrubs very much contrasted in form and modes of growth, thereby producing an unnatural diversity. Many gardeners anxiously endeavour so to intermix the German and North American trees, that no two individuals of the same sort may stand together. Such planters have not the future, but only the present, before their eyes: they do not reflect that such a party-coloured mixture can never produce a picturesque effect, and that nature, when untouched by the hand of art, always places together, in ever-varying numbers, forms and kinds suited to the inclination of the surface and the qualities of the soil.

48. *Culture and Use of the Tetragònia expànsa, or New Zealand Spinach.* By M. Otto, Director of the Gardener's School, and Inspector of the Botanic Garden.

Sow the seeds in a hot-bed, and plant them out in mild weather; gather and dress as common spinach.

49. *Extract from the Transactions of the Society at their Meeting held on September 7. 1823.*

The Countess of Reden, of Buchwald, in Silesia, has sent fifty copies of M. Thouin's pamphlet, *On Laying out and Managing Nurseries of Fruit Trees*, which are at the disposal of the Society at about 3*d.* each.

(To be continued.)

ART. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since October last, with some Account of those considered the most interesting.*

BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers. 3*s.* 6*d.* coloured; 3*s.* plain.

No. XI. for November, contains

2777 to 2783.—*Barbacènia* (M. de Barbacem, a govern. in Brazil) purpureus; 6 and 1, and *Hæmodòræa*. A very rare plant with carex-like leaves

and lively purple flowers, which promises "to be a most valuable and interesting addition to our stoves." Twelve species of *Barbacènia* are known to MM. Spix and Martius; the present one differs from any of these, and is believed to be the first that has been cultivated. "The seeds were gathered from a bundle of Brazilian moss, by the Hon. and Rev. W. Herbert of Spofforth; and some young plants being sent to Lord Milton's collection at Wentworth House, they were there brought to flower under Mr. Cooper's (*Gard. Mag.*, vol. ii. p. 420.) judicious management, when a beautiful specimen was communicated to Dr. Hooker in the month of August, 1827."—*Heliánthus pubescens*. A perennial sunflower from Illinois, perfectly hardy, growing 8 ft. high, and deserving a place in every shrubbery. — *Trifolium alpèstre*. — *Omalánthus (homalos, smooth, anthos, flower)*; *Monœcia Monadélphia*, and *Euphorbiæææ*. A smooth shrub, with rhombéo-ovate acuminate leaves. From New Holland, to Dr. Graham, in 1824. Kept in the stove at Edinburgh, but probably fit for the green-house or cold-pit. — *Oxalis bipunctàta*. "Perhaps only a luxuriant state of *Oxalis violæææ*." — *Cerástium Biebersteinii*, Bieberstein's Mouse-ear Chickweed. From the Taurian Alps. — *Ibèris Tenoreàna*, Tenore's Candy-tuft. From the Neapolitan territory; and "an equally desirable plant for the garden, and especially for rockwork, with the *I. nàna*."

No. XII. for December, contains

2784 to 2790. — *Caméllia reticulàta*. Quarto size. — *Nicotiàna noctiflora*, Night-flowering Tobacco. An annual from the Andes, with purple and white flowers of a powerful fragrance. — *Sisyrínchium chilèense*. — *Málva obtusifolia*. — *Ibèris nàna*. — *Maxillària racemòsa*; *Orchidæææ*. — *Trifolium olýmpicum*. As inadvertent omissions in this Number, the duration of *Trifolium*, propagation and culture of most of the species, and the natural order of *Sisyrínchium* and *Málva*, are omitted, while to *Caméllia*, and all the others, the natural order is given. We notice these omissions, hoping, at the same time, not to give offence, for no man values Dr. Hooker more highly than we do, but simply in confirmation of what we have stated in a subsequent page. (p. 327.) This number completes vol. i. of the new series, and is dedicated by Dr. Hooker to Robert Barclay, Esq., of Bury Hill, under whose auspices the first series of the *Botanical Magazine* was begun, forty years ago, by its original projector and editor, Mr. William Curtis.

Edwards's Botanical Register. Continued by John Lindley, F.L.S. In 8vo Numbers. 4s. coloured.

No. CLIII. for November, contains

1105 to 1109. — *Jacarànda tomentòsa*; 14 and 2, and *Bignoniæææ*. A handsome half-deciduous shrub, hitherto kept in the stove, but probably hardy enough for the conservatory, with purple flowers in June. — *Malachodéndron (malakos, soft, dendron, tree; leaves) ovàtum*. — *Ròsa Bánksiæ lùtea*, Lady Banks's Yellow Rose, the *Wong-mo-ne-he-vong* of the Chinese. From Canton, by the Horticultural Society's collector, Mr. John Damper Parks, in 1825. More prolific in flowers than the white variety, though less fragrant; rather more hardy; leaves of a deeper and richer green; flowers freely against a wall. "Strikes readily from cuttings, and will probably prove a good stock for budding other roses upon." Altogether a most desirable shrub. — *Tùlipa montàna*. A crimson tulip from the mountains of Persia, said to be distinct from any species previously described. — *Collinsia grandiflora (fig. 110. facing p. 322.)*; 14 and 2, and *Scrophularinæææ*. From the dry banks of the Colombia river, by Mr. Douglas, the Horticultural Society's collector. "One of the most beautiful hardy annuals with which we are acquainted, covering the ground with a carpet, as it were, of

blue, and purple, and white, during the months of June and July." — *Maurândia Barclaiàna*; 14 and 2, and Scrophularinææ. A beautiful climber from Mexico to Robert Barclay, Esq., in whose garden it attained the height of 6 ft. on some pea-sticks in the open border, flowering from July until it was destroyed by frost. — *Lupinus bicolor*. A pretty annual, not exceeding a foot in height. From the interior of the country, about the Colombia river, by Mr. Douglas, the indefatigable and singularly successful collector of the Horticultural Society.

No. CLIV. for December, contains

1110 to 1116. — *Gesneria Douglàsii*. An elegant deciduous herbaceous plant from Rio Janeiro, in 1824. Its flowers are brick-coloured, with brown spots; they appear in abundance for about two months, and the plant afterwards dies down to the root. "It requires the heat of the stove, and is propagated with great difficulty by its leaves. It was named, in a paper read before the Horticultural Society in October, 1826, and subsequently published in the *Transactions* of that body, in honour of its indefatigable and intelligent discoverer, to whose single efforts in examining the rich vegetation of the countries lying in the vicinity of the river Colombia, amidst difficulties and dangers that would have appalled a less ardent mind, our gardens are indebted for an immense store of new and beautiful hardy plants." — *Cyanella odoratissima*; *Asphodelææ*. A Cape bulb, with pink flowers in July and August, and of the usual culture. — *Sinningia guttata*; *Gesneriææ*. A herbaceous thick-stemmed plant from Brazil, with white flowers, spotted with red, appearing nearly all the summer. Damp stove; decayed vegetable earth; division of the roots. — *Brachystelma spatulatum*; *Asclepiadææ*. A tuberous-rooted fleshy-stalked plant, with singular-looking purplish flowers in June and July. Hot and dry stove; old rubbish; and kept free from damp when not in a growing state. — *Cotoneaster microphylla*. A beautiful evergreen prostrate shrub, about a foot high, from Nepal, "clothed with a deep glossy foliage, which no cold will impair, and when in blossom, in June, strewed with snow-white flowers, which, reposing on a rich couch of green, have so brilliant an appearance, that a poet would compare them to diamonds lying on a bed of emeralds. It is deserving of notice, that the peculiar flavour which, in *Drupacææ*, is attributed to the presence of prussic acid, is so strong in this plant, that, before flowering, it would be taken for a *Prunus*; a remarkable fact in a tribe of plants which are reputed to possess, exclusively, malic, instead of prussic acid." — *Acacia impressa*. — *Convolvulus albivēnus*. Stove; cuttings. "One of the most desirable of the convolvulus tribe." According to our ideas of what a botanical periodical ought to be, this number of the *Botanical Register* is more perfect than the corresponding one of the *Botanical Magazine*; but still we should greatly prefer, in both works, a regular set of heads, each commencing a paragraph, and, as subsequently suggested (p. 527.), each head introduced, whether there was any thing to say under it or not. These heads might be: 1. Systematic name and authority. 2. English name. 3. Synonyms, systematic and English, with the French and German names, or the name of the plant in its native country, if known. 4. Specific character. 5. Habit; as whether tree, shrub, herb, twiner, trailer, annual, &c. &c. 6. Native country, year of introduction, and habitation in a natural state. 7. Habitation in the garden. 8. Height. 9. Time of flowering. 10. Colour of the flower. 11. Propagation. 12. Soil and culture. 13. Popular character and miscellaneous information. We do not give these heads as the best; but merely throw them out as explanatory of our meaning for others to improve on. No man is more fit than Mr. Lindley to make the *Botanical Register* what it ought to be.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts. 5s. and 2s. 6d.

Part CXXVII. for November, contains

1261 to 1270.—*Cratægus spatulata*. A thorn from North America. It is surprising that this genus is so little cultivated in shrubberies. Messrs. Loddiges have upwards of sixty species and varieties in their arboretum, all of which are beautiful, and so obviously of the thorn kind, that the most superficial observer would never mistake them for any other tree. An acre laid out as a thorny would form an interesting episode to the general scenery of a pleasure-ground.—*Uvulària sessilifolia*.—*Pæonia móilis*.—*Chionánthus virgínica*. The seeds of this tree are two years before they vegetate.—*Mesembryánthemum incúrvum*.—*Pancrátium Amúncaes*.—*Campánula linifolia*.—*Spiræa bélla*. A beautiful hardy shrub from Nepal in 1821, with pink flowers in May.—*Mussænda glabra*.—*Erica eriocéphala* (*erion*, wool, *kephalc*, head; spike of flowers).

Part CXXVIII. for December, contains

1271 to 1280.—*Spiræa trilobata*. A beautiful hardy shrub from Siberia, in 1821.—*Alstrømèria Hookèri*. “We feel much pleasure in following Mr. Sweet in giving this plant a specific name; for who has merited so much from botanists as Dr. Hooker, by the number, elegance, and accuracy of his works.”—*Arètia pubéscens*. A minute and very pretty plant, lately from the Alps of Switzerland, rarely more than 1 in. high, with white flowers in June and July.—*Erica Plukenetiàna*.—*Caméllia sasánqua*. “The Chinese are said to mix the flowers with their tea, to increase its fragrance; but in a fresh state they are quite scentless.”—*Epidéndrum ellipticum*.—*Dillwýnia ericifolia*.—*Astrágalus aristatus*.—*Mesembryánthemum làcerum*.—*Æsculus flava*. A very ornamental tree.

Flora Australásica. By Robert Sweet, F.L.S. &c. Monthly. 3s. coloured; 2s. plain.

No. VI. for November, contains

21 to 24.—*Eudésmia* (*eu*, well, *desme*, a bundle; the stamens); *Myrtææ Myrtææ*. A handsome, upright, evergreen shrub, with beautiful bluish-white leaves with red edges; of the usual culture, and likely to succeed in the open air in our milder counties.—*Dryandra nervosa*; *Proteæææ*. A handsome, dwarf, bushy, evergreen shrub, from the south coast of New Holland to the Clapton nursery, by Mr. W. Baxter, the indefatigable collector of Francis Henchman, Esq. F.L.S. H.S. The usual culture.—*Kennèdia coccinea*. A weakly-growing, but very handsome, scarlet pea-flowered twiner, easily propagated by cuttings in sand, and likely to become one of our most splendid green-house climbers. (*fig.* 111. facing p. 322.)—*Acácia ornithóphora*. An upright evergreen shrub, resembling *A. armata*.

No. VII. for December, contains

25 to 28.—*Pittósporum* (*pitta*, resin or pitch, *sporon*, seed) *fúlvum*; *Goodenòviææ*. Dwarf spreading evergreen, with yellow flowers.—*Lechenaútiæa formósa*. A bushy, little, heath-like, suffrutescent plant, thickly clothed with small evergreen leaves, and producing solitary flowers of a bright scarlet tinged with orange.—*Håkea saligna*; *Proteæææ*. A handsome, upright, evergreen shrub, with white sweet-scented flowers, resembling those of the hawthorn.—*Eutáxia* (good order; leaves) *púngens*; *Leguminòsæ Papi lionæææ*. A small, evergreen, heath-like shrub, with long slender branches, thickly clothed with dark green leaves, the flowers and terminal spikes of a bright yellow and dark orange. All these plants are of the usual culture.

Geraniùcææ. By Robert Sweet, F.L.S. &c. Monthly. 3s. each.

Nos. XCV. and XCVI. for November and December, contain

377 to 384.—*Pelargòonium Leghkéckææ*, Mrs. Legh Keck's Stork's-bill.—

Pelargonium dilatatum, *campylosépalon* (*kampylos*, curved, *sepal*, calyx leaf), *Charlwoódi*, *exornatum*, *cartilagineum*, *crispum*, and *Barclayannum*.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In svo Numbers. Monthly. 5s. each.

No. LVII. for November, contains

225 to 228. — *Amphérèphis* (*amphi*, on all sides, *erepho*, to cover) *intermèdia*; *Compósitæ Carduææ Vernoniææ*. A half-hardy annual from Brazil, with globular tufts of purple flowers in autumn. Stove through the winter, and cuttings in spring. — *Argemòne grandiflora*. An annual, “a grand plant” from Mexico to “the superb collection of R. Barclay, Esq.,” with large white flowers, from July to the middle of October. — *Caragana frutésçens*; *Leguminosæ Papilionææ Lôtæ Galègæ*. (*fig. 112.*) A handsome bushy shrub, with yellow flowers in May; cultivated since 1752, but “still continues scarce, as do the other species of this genus, owing, principally, to their being so little known; the generality of gardeners not being sufficiently acquainted with plants, particularly hardy shrubs, to be enabled to select a pleasing variety, but fill their shrubberies with a great number of common things, of very few sorts, many of which are altogether useless, instead of selecting a pleasing variety, which would scarcely cost more, and would require no more care or trouble in cultivation.” — *Alstræmèria hirtèlla*; *Amaryllidææ*. A handsome half-hardy perennial, with tuberous roots resembling potatoes, from Mexico, raised by Mr. Sweet, from seeds given him by Mrs. Manners Sutton, the Archbishop of Canterbury’s lady. Green, red, and yellow flowers, from August to October. (See p. 298.)

No. LVIII. for December, contains

229 to 232. — *Gastrocárpha* (*gaster*, a belly, *karpnos*, chaff; receptacle) *runcinàta*; *Compósitæ Labiatiflóræ*. A handsome strong-growing annual, with white flowers, from Chile. — *Chelone ròsea*; *Scrophularinææ*. Two feet high, and very beautiful. — *Salpiglóssis stramínea*; *Solànææ*. Nearly allied to *Petúnia*, and of easy culture. — *Phlòx refléxa*; *Polemoniææ*. Dark lake (inclining to purple) flowers, and very handsome.

Cistinææ. By Robert Sweet, F.L.S. In svo, every alternate Month. 3s.

No. XV. for November, contains

57 to 60. — *Hudsonia tomentòsa*. A short, densely tufted, suffruticose plant, about a span high, from New Jersey, where it grows in white sand, with a small mixture of decayed vegetable soil. — *Helianthemum hyssopifòlium*. One of the strongest-growing species of true helianthemum. — *Cistus florentinus*. Shrubby, white flowers; half hardy, and cuttings. — *Helianthemum serpyllifòlium*. Yellow flowers. Found wild in Somersetshire. Cuttings and light sandy soil.

The Botanic Garden. By B. Maund. In small 4to. Large, 1s. 6d.; small, 1s.

Nos. XXXV. and XXXVI. for November and December, contain

Diáanthus Caryophýllus, *Claytonia virgínica*, *Láthyrus tuberòsus*, *Monárda dídyma*, *Scutellária Colúmnæ*, *Diáanthus deltoídes*, *Chrysánthemum coronàrium*.

The Florist’s Guide and Cultivator’s Directory, &c. By Robert Sweet, F.L.S. &c. In Monthly Numbers. 5s. coloured; 2s. plain.

Nos. V. and VI. for November and December, contain

17 to 24. — Styles’s Hero Pink, Burns the Poet’s *Ranunculus*, Don Miguel Tulip (*fig. 115.*), Franklin’s Queen of Hearts *Carnation* (*fig. 114.*), Hall’s Tarrara, and Hedge’s *Britannia Auricula*, Princess Charlotte’s *Cenotaph Tulip*, and *Nomia’s Ranunculus*.

112



Caragana frutescens

113



Kennedia coccinea

110



Collinsia grandiflora

113



Don Miguel

Tulip

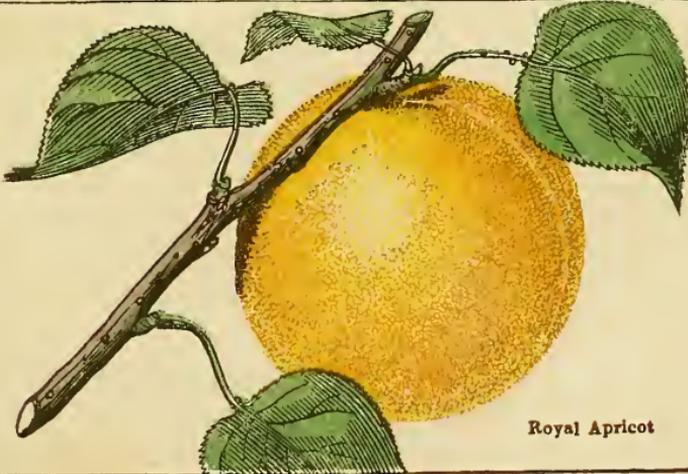
114



Queen of Hearts

Carnation

115



Royal Apricot



Medical Botany, &c. By John Stevenson, M.D., and James Morss Churchill, Esq., Surgeon. In Monthly Numbers. 3s. 6d.

No. XI. for November, contains

41 to 44.—*Hùmulus Lupulus*, the Hop, the tincture of which “frequently induces sleep, and quiets nervous irritation, without causing costiveness, or impairing, like opium, the tone of the stomach, and merely increasing primary disease.” — *Sinàpis álba* and *nigra*. “As substitutes for either the black or common mustard, most of the *Crucifere* may be used, especially the *Sinàpis arvensis*, *Myàgrum sativum*, *Sisýmbrium officinále*, the *Erýsimum*, *Lepídium*, *Turrítis*, *Brássica*, *Sinàpis orientális*, *chinénsis*, and *brassicàta*. The latter is commonly cultivated in China. The *Ráphanus Raphanístрум*, or wild radish, is said to be so complete a substitute, that the seeds are often separated in the process of cleaning grain by farmers, and sold to the mustard or oil-millers, who dispose of it as Durham mustard.” It may be useful in country places, where medicines are not at hand, to know that a large tea-spoonful of the powder of mustard seed, mixed in water, is a powerful incentive to vomiting. In cases of indigestion and habitual costiveness, a tea-spoonful of the whole seed, two or three times a day, has been found to restore the stomach and intestines to the regular performance of their functions; but the injudicious manner in which mustard has lately been lauded for this purpose, has led to the abuse of a useful remedy, and injured the mucous membrane of the stomach. “Whitehead’s ‘Essence of Mustard’ consists of oil of turpentine, camphor, and spirits of rosemary, to which is added a little flour of mustard. His ‘Essence of Mustard Pills’ are Balsam of Tolu, with resin!”

Amýgdalus communis, the Sweet and Bitter Almond. A native of China and most parts of Asia and Barbary. The sweet is much cultivated in the south of France, for the sake of its fruit. The fruit of the bitter variety is imported chiefly from Mogadore. Given in substance, it is exceedingly poisonous, producing vertigo, head-ache, &c., like laurel water. The kernel of the sweet almond contains a large proportion of oil, which is more pure and less rancid than olive oil. Hence its use in perfumery: Macassar oil being merely oil of almonds, coloured red with alkanet root; and Russia oil being the same thing, rendered milky by a small quantity of ammonia of potash, and scented with oil of roses. Hence, also, the use of this oil, or that of lavender, by draughtsmen, in tracing drawings on common letter-paper. The oil renders the paper quite transparent; and, after the tracing is taken, it may be completely evaporated by holding the paper a minute or two before a fire. The expressed oil of bitter almonds does not differ from that afforded by the sweet. The poisonous quality of bitter almonds is owing to their containing a considerable proportion of prussic acid.” The nostrums for eruptions and cutaneous diseases, sold under the title of Gowland’s Lotion, Milk of Roses, Caledonian Cream, Kalydor, &c., consist merely of a solution of the oxymuriate of mercury in almond emulsion, with a proportion of sugar of lead, or white oxide of bismuth. They are thus possessed of certain stimulant and repellent properties; and, though blunted in part by the medium in which they are involved, cannot fail to be highly active on the skin, and consequently injurious.”

Cápsicum (kápto, to bite; pungency of fruit) *ánnuum*, Annual Capsicum, or Guinea Pepper. A powerful stimulant; most advantageously given in atonic gout, in palsy, dropsy, and in the debilitated stages of fever. “All the species of *Cápsicum* yield a spice of the most pungent quality; but the well-known condiment sold under the name of Cayenne Pepper, is prepared from the fruit of the *Cápsicum baccàtum*, or Bird Pepper, which is a shrubby plant, of humble growth, not unlike the present species, but producing small ovate berries. These are gathered when ripe, are dried in the sun,

pounded, and mixed with salt. The composition is then put into stopped bottles, and is commonly known by the name of 'Cayan Butter.' A mixture of sliced cucumbers, eschalots, or onions, cut very small, a little lime juice or Madeira wine, with a few pods of bird pepper, well mashed and mixed with the liquor, seldom fails to excite the most languid appetite. In the West Indies, it is called a *man-dram*. A useful and elegant condiment is made, by dissolving common salt in a strong infusion of capsicum, previously strained, and afterwards allowing it to crystallise."

No. XII. for December, contains

Méntha viridis, *Pulègium*, and *Piperita*, used for distilling peppermint and pennyroyal water. — *Convólulus jalápa*, the root of which furnishes the well-known Jalap. — *Stýrax officinále*, which produces the fragrant balsam called Storax; and *Polýgonum bistórta*, the root of which is a powerful astringent, and is occasionally used in fevers.—The figures in this, as in the preceding numbers of *Medical Botany*, are beautifully coloured, and, if equalled, are not surpassed by those of any botanical periodical of the day.

Frost, John, Esq. F.A.S. F.L.S. F.H.S. of Emanuel College, Cambridge, Member of the Royal Institution of Great Britain, of the Royal Asiatic Society of Great Britain and Ireland, Secretary to the Royal Humane Society, Director of the Medico-Botanical Society of London, Honorary Member of the Medical Society of Baltimore, and Lecturer on Botany at St. Thomas's Hospital: An Oration delivered before the Medico-Botanical Society of London, at the commencement of their Eighth Session, Friday, 12th October, 1827. London. 4to, pp. 27.

This Society, which has now existed seven years, and contains among its officers some names of the highest respectability, was "instituted in consequence of the almost total neglect of the study of botany by the members of the medical profession." Botany, as a branch of science, Mr. Frost considers as having claims of the first importance on the attention of medical men. The object of the Medico-Botanical Society, therefore, is to show that the medical student ought to study plants scientifically; that the uses and effects of plants are imperfectly known, and that this defect ought to be remedied. A farther object is to promulgate such discoveries as are, from time to time, made with regard to the application of plants to the curing of diseases.

It is certain that medical men, in general, know very little of botany; and, from a letter to Mr. Frost, by Sir Anthony Carlisle, at once an eminent surgeon and able philosopher, given as a note to the Oration, it would appear that a knowledge of that science was calculated to render the study of medicine essential services. Sir A. Carlisle is "sanguine enough to believe that the vegetable kingdom comprises remedies for all our bodily disorders, short of those necessarily incurable alterations of structure in vital parts, which forbid all rational hope. Vegetable drugs possess the remarkable and, perhaps, the exclusive power of acting directly upon the brain and nerves: and, hence, it is probable that specific remedies for Tetanus, or even for Hydrophobia, may be yet concealed in plants; and, although their ultimate discovery may be accidental, the lately published *Materia Medica*, by Dr. Ainslie, brings to our view so much extensive research and varied learning, that we need not despair of success from professional enquiries." Mr. Frost deserves praise for his zeal and activity in the cause of medical botany; but, as he is a friend of ours, we shall also question his taste on the subject of adulation to certain exalted personages, who, but for their rank and fortune, would never have been heard of. Perhaps, however, this is the true way of catering for the power and influence of such persons; and nothing is to be effected without power.

The Pomological Magazine. In 8vo Numbers, Monthly. 4 figures. 5s. coloured; 3s. 6d. plain. Edited by two gentlemen intimately connected with the Horticultural Society.

We have before (p. 89.) announced this work, which is to contain "four coloured figures, one of which will be occasionally double, of the finest varieties of fruit cultivated in Great Britain. These will be accompanied by an accurate account of their history, and as full a description of their wood, flowers, leaves, and fruit, as may be necessary to enable the public to distinguish the varieties from each other."

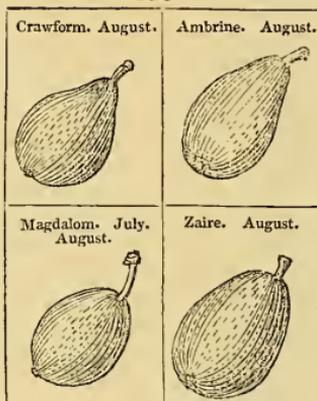
An advertisement states that, "as the object of the work is utility, the price must be low, and the figures in consequence relieved of all illustrations of a secondary character. The winter wood, the leaves, and the flowers, which are almost always as well understood from description as they can be from representation, will, therefore, be omitted or introduced as occasion or convenience may require; for it is notorious to all who are conversant with pomology, that, in works at present of the highest authority, these characters are universally consulted from the letter-press, and not from the plates. The introduction of them at all times would add considerably to the expense of the work, without any adequate increase of utility: they will, however, be added whenever any real advantage is likely to be derived from their representation; and in all such cases the public will be able to place implicit confidence in their accuracy." Of the two excuses for not giving "illustrations of a secondary character," that which is founded on "works at present of the highest authority" appears to us the less valid. If precedent is to go for much in science, a ready excuse will always be at hand for neglecting improvement. We deny that the winter wood, the leaves, and the flowers are almost always as well understood from description as from pictorial representation. If it is worth while that they should be understood, why should not delineation be as effective in their case as in that of fruits? Apples and peaches, for instance, are certainly as different in blossom as in fruit. However, after giving the subject more consideration than we had done at the time we made the remarks on the secondary illustrations referred to (p. 89.), we have come to a conclusion so different from what we anticipated, that we consider the question of secondary illustrations in the *Pomological Magazine* of no great consequence, convinced as we are that the plan of that work is by no means calculated to attain its professed objects.

The difficulty of distinguishing varieties of fruits of the same species from each other is acknowledged by every horticulturist. Some individuals who have cultivated, fruited, and studied extensive collections of apples, pears, or plums, may know at sight a considerable number of varieties: but, in general, only a very few sorts are known by one individual; and, in the great majority of cases, gentlemen's gardeners can speak with confidence regarding those sorts only which are under their care. The reason of this is, that the shades which distinguish varieties are so fleeting as not to be retained in memory, or only retained to a very limited extent. An apple may be distinguished from twenty other apples, all very much alike, when the whole twenty are placed together before the eye; but any one of the twenty taken apart, and delineated and described, however perfectly, will hardly present any marks sufficiently distinctive to be remembered, and by which it may be recognised with any degree of certainty. Those differences in plants which are called specific may be recognised from independent or absolute verbal description; but differences between fruits and flowers which are varieties of one species, can only be recognised with any degree of certainty by comparative ocular inspection, either of the objects themselves, or of delineations or models of them.

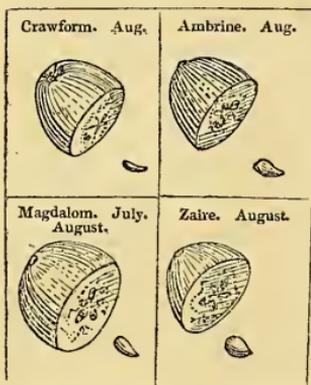
This being the case, it appears to us that the best mode of conveying a useful knowledge of the different varieties of fruits, or of florist's flowers, would be to give representations of the fruits or flowers in groups of such as bear the greatest resemblance to one another; and, if the different varieties were also distinguishable by the blossoms, leaves, buds, and wood, to give separate and corresponding representations of these. For this purpose a work in folio, or in a tabular form, would be better adapted than any other, as the greater the number that were brought together in one table or group, the more easy would be the comparison. To show how this might be done in the case of pears, for example, we may suppose the first table to consist of a sheet of paper 2 ft. square, and to be divided into squares of 2 in. each.

(fig. 116.) The number of squares on a table of that size will be one hundred and forty-four, and in these squares may be delineated the fruits, with their stalks, of one hundred and forty-four different sorts, the name being written above each, with the times of ripening and keeping.

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A second table, of the same number of squares, may contain sections of the fruits, and specimens of the seeds (fig. 117.), with the names, &c., as before.

A third table, composed of the same number of squares, may contain the blossoms, and state of the wood and leaf buds at blossoming time, of these one hundred and forty-four sorts, with their names in the same order, and in

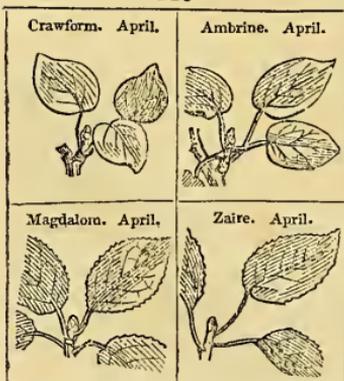
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similar squares. (fig. 118.)

A fourth table, of the same size, may consist of a similar number of squares, with

119



the front, back, and side views of a leaf or tuft of leaves in each square. (fig. 119.)

A fifth table, of the same size, may consist of one hundred and forty-four parallelograms, each 4 in. by 1 in., and each containing a specimen of the summer wood and leaves. (fig. 120.)

A sixth table may contain similar parallelograms for the winter wood, taken at Christmas, and the blossom buds, taken on

the 1st of March, when the blossom buds are considerably swelled. (fig. 121.)

A seventh table, in squares like the first, may contain an outline, on a small scale, of the general form taken by the tree when grown as a standard; or, if generally trained as an espalier or on a wall, it may be represented in miniature, and of a certain fixed age, say fifteen years, applicable to all the trees, by which their comparative rapidity of growth would be readily understood. (fig. 122.) This last table probably might not be published for some years after the other tables.

In the first six tables all the objects should be represented of their natural size. The subjects of the seventh table should all be of the same age, and diminished to the same scale. The letter-press description should be ample, and, to prevent it from being incomplete, or in any part neglected, the particulars of each fruit should be arranged under certain heads, which might be in italics; and which heads should never be omitted, even though nothing

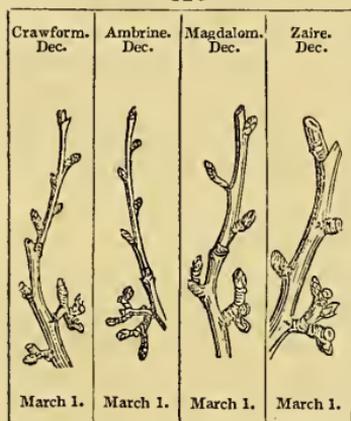
may be said under some of them, in order to prove to the reader that they have not been forgotten. These heads may be, 1. Name, synonyms, and reference to books and figures; 2. Origin and history; 3. Popular character of the fruit and tree; 4. Fruit and seeds described; 5. Time of ripening and keeping; 6. Flavour and use in the dessert or kitchen; 7. Blossoms; 8. Leaves; 9. Wood and buds; 10. Form of tree; 11. Peculiarities of growth and culture; 12. Comparative abundance or rarity in British and foreign gardens. For want of having a fixed number of heads of this sort, to recall to mind what is necessary to constitute a complete description and history, component items will unavoidably now and then escape notice. As a proof of this, we have only to refer to the *Botanical Magazine*, *Botanical Register*, and other botanical periodicals of the day, where, for want of such guides, the most useful particulars of the plants figured, such as time of flowering, mode of propagation, habitation in the garden, &c., are sometimes inadvertently omitted.

It appears to us that tables of the above description, even though not coloured, would enable a gardener to make out any particular variety of apple, pear, cherry, or plum, better than detached figures in an octavo volume, which cannot be brought together under one view: but, if such tables were coloured, we are persuaded they would surpass in usefulness any work on fruits that has hitherto appeared or been projected. Supposing

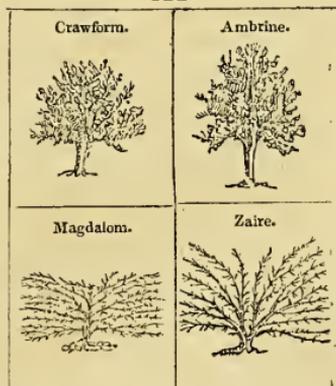
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121



122



a gardener to have a pear tree with ripe fruit, the name of which he wished to ascertain; first, he would compare an average specimen of the fruit, leaves, and young wood with tables 1. 4. and 5., and, having fixed on what he considered the sort, prove it by dissection and comparison with table 2. Next he would recur to tasting and comparing with the written description. At Christmas he would prove his name by the old wood, table 6.; in March by the leaf buds, blossom buds, and expanded blossoms, table 3.; and in June by the full-grown wood and young leaves, as in table 5.

With regard to the expense of such tables, we have ascertained from our engravers, Messrs. Vizetelly and Branston of Fleet Street, that they might be printed in colours, in Savage's manner (*Gard. Mag.*, vol. ii. p. 197.), at far less expense than they could be coloured by hand; and, though such coloured tables would not be so refined imitations of nature as drawings, they would come very near them, and probably be sufficient for every useful purpose. But, supposing them to be printed from copper or by the lithographic process, every person acquainted with the subject will allow that they could be produced a great deal cheaper than by the system of separate plates for each variety of fruit. We have before mentioned (*Gard. Mag.*, vol. ii. p. 197.) that similar tables, printed in colours, might be composed of florist's flowers, such as tulips, hyacinths, chrysanthemums, &c. An example, on a small scale, and therefore comparatively imperfect, has been given in a former page. (See the cuts facing p. 322.)

If it were desirable, it would be a very easy, and not an extravagant business, to produce models of tables 1. 2. and 6. Moulds, of the size of the tables, might turn out models in plaster of Paris; and these, when dressed and prepared, might probably be coloured on a large scale, by successive tints applied to the moulds, and transferred from them to the models, by returning the latter to their matrices. This, however, may perhaps be too speculative a subject to mention, without going into greater details than we have room for.

Supposing the Horticultural Society, or, what we consider the same thing, the "two gentlemen intimately connected with it" who edit the *Pomological Magazine*, were disposed to adopt the tabular method, then, as they have already a great number of drawings and models of the commoner fruits, they might begin, at any period of the year, by publishing tables 1. and 2.; and, as trees of all the sorts are in the Chiswick garden, tables 3. to 6. inclusive could be got from nature in the course of a year afterwards, and table 7. might stand over for the present. Having given tables of apples, pears, plums, cherries, peaches, nectarines, apricots, gooseberries, currants, raspberries, and strawberries, the four last of a smaller size, they might then take grapes and pine-apples on a larger size, and, lastly, the less common fruits, putting different species on a table. The probability is, that such tables would be purchased by every nurseryman, and be as common among gentlemen's gardeners as we hope a tabular *Gardener's Kalendar* now publishing by Mr. Ridgeway will be.

Having completed such tables, and greatly reduced the number of fruits, or rather of names of fruits, at present in cultivation in the nurseries, a *Pomological Magazine* might then be commenced, to bring into notice new objects, and to serve as a sort of perpetual appendix to the tables, as the *Gardener's Magazine* does to the *Encyclopædia of Gardening*. The use of such tables to the nurseryman and the country gardener would be immediately felt: but the plan of the magazine is such, that, even if it were executed, it could not supply the place of the tables; because the different varieties could never be properly compared together. The plan of giving the fruit, with the leaves, blossoms, wood, and other secondary illustrations, on the same plate, is less susceptible of perfection than that of giving each kind of illustration in a separate group; because it may often happen

that the winter wood and the blossom of spring have been forgotten at the proper times; and every one acquainted with the getting up of publications knows the difficulty of getting plates prepared, and the frequent imperfections that result from casual neglect. By giving each kind of secondary illustration by itself at a particular season, the greater simplicity of the objects might reasonably be argued to produce greater perfection and greater accuracy. The plan of publishing the different species of fruits, such as pine-apples, apricots, apples, and strawberries, as in No. I. of the *Pomological Magazine*, may be suitable enough for the miscellany of a magazine, but, in point of general utility, it is bad; because there are many persons, who would feel highly gratified in having a table or a book of apples and pears, who would feel little interest in pictures of pines or grapes. On the other hand, if such tables as we have described of all the principal fruits were once published, they would become standards of nomenclature and properties, to which new fruits described in a *Pomological Magazine* might be referred, in order to indicate their comparative character and merits. In publishing fruits or florist's flowers in a magazine, we should still adopt the system of squares, in order that those who chose it might cut out the squares and mount them as appendices to the tables to which they are referable.

It must be evident to any one who has seen No. I. of the *Pomological Magazine*, that, though there is less secondary illustration to each particular fruit than there would be in the tables, yet, for the sake of effect, there is necessarily more engraving and colouring to each fruit than the tables would require for the sake of utility. This circumstance, independently of every other, will ever render the plan of publishing each fruit on a separate plate more expensive than the tabular form; and if we take the first number of the *Pomological Magazine* as a specimen, and suppose that the hardy fruits are to be reduced to an average of 144 of each of the kinds before enumerated, this will give 1440 sorts, which, at four sorts for 5s. or 3s. 6d., amount to 95*l.* or 66*l.* 10s. By the tabular method, printed in Savage's manner, we have ascertained that table 1., of 144 sorts, supposing a sale of 1500, might be given for 1*l.*, and the other tables for 10s. each. Of course, tables of gooseberries, strawberries, &c., would be smaller and cheaper.

Next to publishing such tables, the Horticultural Society would do most good by publishing a select descriptive list of fruits, and selling to every nurseryman plants or grafts of these sorts, to propagate from for the public. Two great and increasing evils the public expect the Horticultural Society to lessen; first, the actual number of fruits in cultivation; and, secondly, the numerous names by which one fruit is known or disguised in different parts of the country, and even in the same nursery.

We have thrown out these hints for others to improve on, and we shall be happy to have the opinion of those of our readers who have attended to this subject. We shall only add that, since the above was written, we have had an opportunity, through the kindness of Mr. Forsyth, of looking over all the works on fruits which have been published in Europe, and even all the editions of these works, from the *Pomona* of Batty Langley, in 1729, and the *Pomologia* of Johann Herman Knoop, in 1758, to Hooker's *Pomona Londinensis*, in 1818; and these works have served to confirm our judgment in the view we have taken. It is remarkable that Langley and Knoop have, to a certain extent, anticipated our system, by giving, in folio plates, collections of fruits ranged together according to the time of ripening; and Langley has, in some of his plates, given collections of wood and of leaves. A number of botanical authors of the same age, as Morrison, Barrelier, and Gesner, applied the same principle to the figuring of plants; and we shall hereafter show how this practice may be imitated by the moderns with advantage. In the progress of science, the first step and the

last are generally right; the first is in the road of nature from instinctive impulse, the latter from the dictates of reason and experience.

Nos. I. and II. for November and December, contain

1. *The Wave-leaved Pine*, from the Bristol nursery, but of unknown origin; distinguished by its flaccid leaves, but in other respects not materially different from the common pine.

2. *The Royal Apricot*, raised a few years ago in the Royal Garden of the Luxembourg, and pronounced in the *Bon Jardinier* to be even superior to the Moor-Park, their Abricot Pêche, and ripening from a week to ten days earlier (*fig. 115. facing p. 322.*)

3. *The Sugar-loaf Pippin*; *Dolgoi Squoznoi, Russ.* (*i. e.* long and transparent); and *Dymond of Exeter's Hutchins's early Seedling*. A summer apple from Russia, and also from Exeter. "At the period of the year when this matures, there is scarcely any apple which possesses the same good qualities. But after having been gathered a week or ten days, the flesh becomes soft and mealy."

4. *Sweet Cone Strawberry*, raised by T. A. Knight, Esq., in 1817, from the Old Pine impregnated by the Old Black. A moderate bearer, flesh firm, red, very rich, and high-flavoured.

5. *The Oslin Apple*, said to have been brought from France to Scotland by the monks of Arbroath. Delicious; "the best, except the Kerry Pippin, of all the early autumn apples; grows by cuttings.

6. *The Mims Plum*. A seedling from the Blue Perdrigon, in size and figure approaching the *Magnum Bonum*. "A pleasant dessert plum, but its great excellence is as a pie-fruit." Succeeds well as a standard.

7. *The Grove-End Scarlet Strawberry*, raised in the garden of W. Atkinson, Esq., at Grove-End, Paddington, in 1820. One of the earliest and best of the scarlet strawberries. Forces well, and bears carriage securely.

8. *The Barnet Raspberry*. A seedling raised by a nurseryman named Cornwall, at Barnet, in Hertfordshire. Distinguished from the Red Antwerp by its branching canes, and long, slender, reddish prickles. Very prolific, and ripens early, but does not bear carriage well.

The drawings and descriptions are very well executed, and though plants of the eight fruits described could be purchased at a nursery for less than their representations on paper, yet the publication may certainly be considered as moderate in price.

The following note is from an experienced orchardist:—

The stalks of fruit, I consider, should be carefully designated in the *Pomological Magazine*. In my orchard, it is wonderful to see how a long-stalked apple will ride out an equinoctial gale, when the shorter are all blown down. This is an essential difference in late-ripening fruit, as to relative value.—*W. R. Y.*

The following is from a highly valued correspondent (see p. 371.):—

The *Pomological Magazine* appears to me to be on too expensive a plan to insure a general sale: 5s. for four plates of fruit is much too dear. Why not have chosen the small quarto size, like *Loddiges' Cabinet*, and given ten plates for 5s., as they have done, instead of four; or the quarto size of the *Society's Transactions*, with four or six figures on each plate; for, at the rate of four fruits a month, it will take nearly eighty years to go through the *Horticultural Catalogue* of 3825 sorts, supposing them all to be distinct. But perhaps it is intended to be made a profitable concern, as well as a scientific one. By the by, let me ask, is it published to aid the funds of the Society, or for private benefit? If for the latter, I should not consider it very respectful to the Society at large, as most probably the greater part of the specimens will come from the Horticultural Society's Garden; however, this is a matter that does not concern the public, who want certainly a good, useful,

and reasonably priced work on fruits. In the letter-press, the language should be as plain as possible, to convey a correct description of the fruit; such words, therefore, as roundish, cordate, cucullate, auricled, &c., should give place to English words, which are equally expressive. The plates and letter-press should be numbered at bottom and not paged, like *Poiteau and Turpin's Duhamel*, to enable purchasers to arrange the different classes of fruits together.

Sections of the fruit should be given; for, frequently, the internal structure affords many discriminative marks, as the stones in apricots, peaches, and nectarines, the cells and kernels in apples and pears, the seeds in grapes, the flesh in cherries, &c.

The plan in the *Nouveau Duhamel* seems to be very good. Take, for instance, apples. Plate 1. contains, 1. The flower; 2. The petal separate; 3. Calyx, stamina, and pistil; 4. Calyx and pistil, viewed singly; 5. The fruit cut horizontally, to show the cells; 6. A small branch with leaves and fruit; 7. The entire fruit; 8. A kernel or seed separate; 9. A branch, with flowers and leaves. Other plates follow, containing five or six varieties, figured in each plate, according to their size, &c.—*M. H. Nov. 20. 1827.*

Fleming's British Farmer's Magazine, exclusively devoted to Agriculture and Rural Affairs. Quarterly. 4s.

No. V. for November, contains

Original Communications.—Lord Althorp's improved Short-horned Cow Io, with an engraving by T. Landseer.—The Origin of Moss, by W. Ayton, Esq., of Hamilton; showing that moss earth is "an immense collection of the crops of aquatic vegetables, which have grown, in successive generations, on the surface, in humid situations, and in a low temperature, more or less in a state of putrefaction. Moss earth is not found in warm climates. Cold and moisture, to a certain extent, are the parents of moss plants, and these form moss earth; and the depth of the strata is always in proportion to the degree of humidity in a cold climate."—On the present State of some of the improved Breeds of Cattle in this Kingdom, by the Reverend Henry Berry; controversial. (See *Gard. Mag.*, vol. ii. p. 456., and vol. iii. p. 75.)—Cause and Cure of the Smut in Wheat, the Turnip Fly, Wire Worm, &c., by W. Farey; founded on Dr. Pew's experiments, noticed *Gard. Mag.*, vol. ii. p. 255, and recommending Dr. Pew's cure, lime, "together with keeping the land in good farming condition."—Distresses of 1825, 1826, and 1827, by Mr. Simon Grey; in which the author argues, contrary to most political economists, that money is a "mere measure, and not a regulator, of value and prices; and, consequently, that the alleged over-issues of British currency by the country bankers and others formed no cause of the late distress."

On Prize-fed Oxen; in which the writer justifies cattle shows, &c. on the general principle of inducing farmers to mix with the world, and thus become acquainted with improvements which they never otherwise would have heard of.—Steeped Barley as Horse Food, by Verus; in which that veteran agriculturist (*Gard. Mag.*, vol. i. p. 259.) contends that barley is not so nourishing as oats, and that, consequently, a greater bulk being required, the saving is not so great as was alleged in a preceding paper on the same subject.—On the Weed Self-heal, *Prunella* (or Brunella, from the German *die Braune*, a disease in the jaws and throat, which this plant is said to cure) vulgaris; in which the frequent appearance of this weed among clover is accounted for from the circumstances of both plants ripening their seeds at the same time, and from both seeds resembling each other; that of clover, however, being kidney-shaped, and rather larger than the seeds of self-heal. The seeds of the dodder, *Cuscuta europæa*;

as already noticed (p. 208.), are very common in Dutch clover-seed; but like those of self-heal, may be taken out by a fine sieve. — Agriculture of Ampthill, &c.; in which the excellent plough and harrow of Finlayson are strongly recommended. — On Poor Laws; the object of the writer is to lessen the expenses of finding the settlements of paupers. — On Smut in Grain; the author considers Smut as an infectious disease, that may be communicated to the grains of healthy wheat by contact, and eradicated from wheat altogether, by using quicklime, without the addition of acids, to neutralise the lime, or of oils or fatty substances, to form a kind of soap; in short, wash with clean water, skim off the smut, then pour over the sound grain a wash of newly burnt lime and water, similar to that used for white-washing walls, and lastly dry the heap with powdered quicklime. On Prize-fed Oxen; in which the writer argues that the modern exhibitions of fat cattle are of no advantage to agriculture. "In olden times," he says, "the fattening of cattle was not so general, and the art of procuring them nutritious food during winter more difficult than it now is. In those times, too, it was customary to give cattle plain food, grass and hay only; consequently, beef was seldom, perhaps never, met with too rich in quality, and the fattest ox was then justly deemed the best: hence the propriety of first establishing fat cattle exhibitions, and awarding a premium to the owner of the fattest ox. But at present, when cattle food has become more diversified in character, and almost every circumstance affecting the fattening system has undergone a change, the ancient mode of estimating the value of beef, and of awarding premiums for fattened cattle, ceases to be applicable, and its continuance may be instanced as one of the many melancholy proofs which the world affords of the force of habit, and slavish adoration of the wisdom of our ancestors."

Pernicious Customs; viz. bridling up the heads of horses, and lacing up the ankles of their drivers blamed. — Profits of planting; Mr. Withers's calculations (p. 202.) not too high, and confirmed by Menteach's *Forester's Guide*. — Answers to queries, and a Life of John Cockburn, Esq. of Ormiston, conclude the first department.

Reviews. — Henderson's Practical Grazier. Menteach's Reports on Woods and Plantations. Withers's Profit and Loss View of planting One Acre.

Agricultural Intelligence — containing a great variety of matter interesting to farmers; but we limit our notices to what affects agriculture as a science, and to what is likely to be interesting to gardeners. The Lincolnshire Agricultural Society has given a prize of ten guineas to one man, for having had seventeen children (ten living), and been forty years in the service of one master; and another of five guineas, for twenty-five children gotten (ten living), and a service of forty-one years. These premiums seem to have been well merited by the length of service; but, as to the children, there is something revolting in rewarding persons for calling twice as many beings into existence as they were able to nourish and bring up. Premiums for early marriages and large families may be very suitable for new countries like America. — Stings from nettles may be cured by rubbing with dock leaves.

Sporting Intelligence — highly interesting in its way.

As this number concludes the first volume, it is accompanied by a title-page, and a dedication to T. W. Coke, Esq. M.P., universally acknowledged "as the distinguished patron of British agriculture for more than half a century." We are happy to see the *Farmer's Magazine* increasing in interest and in circulation.

Watkins, Thomas, many years foreman with Mr. Grange, of Hackney, and now with W. Knight, Esq., Highbury Park: The Art of promoting the

Growth of the Cucumber and Melon ; in a series of Directions for the best Means to be adopted in bringing them to a complete state of perfection. London. 8vo, pp. 84. 7s. Wright, Haymarket.

We can safely recommend this little work to such amateurs as are their own gardeners : they will find the directions plain, concise, and well adapted to the end proposed ; viz. ample crops of cucumbers and melons, both at the earliest and latest seasons at which these fruits are grown.

Anon. : Circle of the Seasons, and Perpetual Key to the Calendar and Almanack ; to which is added, the Circle of the Hours, and the History of the Days of the Week : being a Compendious Illustration of the History, Antiquities, and Natural Phenomena of each Day of the Year. London. 12mo.

“ The Circle of the Seasons is intended for the daily instruction and amusement chiefly of young persons, particularly those who are fond of the study of botany and the natural sciences in general. It is, in fact, a compendious illustration of the history and phenomena of each day in the year ; and each page, containing one day, may be divided into three separate parts or subjects. In the first, the saints and festivals of the day are recorded, together with short notices of each, so as to form a useful key to the Calendar and Almanack. In the second follows the natural history of each day, containing a list of the plants which, on an average, begin to flower or to fade ; the birds which arrive or begin to sing ; and other natural phenomena. And, lastly, we have added such descriptive poetry as relates to the above two subjects, in order to afford a pleasing recreation to those who are disposed for a little daily exercise of this sort, and to illustrate the foregoing [religious] history and natural history of the day.”

“ The work has been compiled with great labour and attention to accuracy ; and it is hoped, and fairly presumed, since a vast quantity of useful and agreeable information has been got together, and rendered easy of attainment by the mode of its arrangement, that both pleasure and profit may be gained by its daily perusal.”

We approve of, and admire this little work, with the exception of that part of it, perhaps about one fifth of each page, which is occupied with the names of Catholic saints and martyrs. We cannot conceive the utility of inserting upwards of 1000 names, with scarcely a tithe of which, as a well-informed Catholic authorises us to state, any useful ideas can be associated. Perhaps the author may venerate them merely as names of antiquity ; if so, all that we can say is, that we differ from him in taste.

We should have preferred the names and short biographies of men of science, art, or literature ; or even the names of appropriate dessert or culinary fare ; or the operations and products of agriculture and gardening ; or, indeed, any sort of useful information. To those, however, who, like the author, find “ something very pleasing in the periodical return of festive days, and the various rites and ceremonies connected with them,” the work will be, what it is intended to be, instructive and amusing.

We can readily sympathise with the feeling for Catholicism, not only as the most ancient and venerable variety of Christianity, but as that the best calculated, by its external forms, for taking full possession of the mind.

Treating this subject as a matter of taste, a highly artificial style of religion may be compared to a highly artificial style of art, and when a preference is given to the first, the Catholic style will be preferred to the Protestant manner, on the same principle that florid Gothic architecture, and the landscape-gardening of Le Notre, will be preferred to the Grecian or the English styles of these arts. Every style, both of thinking and building is

good, and to be admired, when considered relatively to the circumstances which called them forth; that is, historically, or with reference to the state of the human mind at the time.

FRANCE.

Vibert, M., Cultivator of Roses at Chenevières-sur-Marne: Du Ver Blanc, exposé de ses Ravages et de la Necessité de le détruire sous la forme du Hanneton; suivi d'une Notice sur le Charançon gris et celui de la Livèche. On the White Worm, showing its Ravages and the Necessity of destroying it while in the Cockchaffer state; followed by a Notice on the Grey Weevil [*Curculio cineræus*] and the Lovage Weevil [*C. ligustici*]. Paris. Pamph. 8vo, pp. 101.

The above pamphlet, accompanied by the following letter, was sent us by Mr. Calvert, the well-known cultivator of roses at Rouen:—

Dear Sir, I send you a new publication on a subject that I think of the utmost importance to horticulture, and, indeed, agriculture. I have for the last two or three years been a great sufferer from the grub upon which the author treats, namely, the larva of the cockchaffer. I had made some remarks, and intended to have transmitted them to you, but M. Vibert has anticipated me. I can bear witness to the truth of the insect's devastations, and this year the garden of M. Soulange-Bodin has also greatly suffered from it. The dry summer has much assisted and increased the devastation. M. Soulange-Bodin has proposed to give 400 fr., and entreated other cultivators to join him in offering a reward to any person who can find the means of destroying the larva. I was sorry to see, when last in London, that the devastation has also begun in England; for two years ago I saw nearly the whole of Mr. Colville's new nursery, near Roehampton, destroyed by them. I have myself lost near 50,000 rose trees, and this year dahlias and all kinds of plants have more or less suffered. I think M. Vibert has omitted to give a very important fact, and one, in my opinion, which is the most likely to lead to a mode of destroying them. The insect lays its eggs about June, and, in six weeks, they produce a very small maggot, and, as soon as they get strength, they approach to within an inch or less of the surface of the earth. In my opinion that is the best time to destroy them in the ground. I have tried a solution of arsenic and water, and succeeded, but my experiment was not on a large scale. I think some remedy might be found. The great difficulty to overcome is, not to destroy the plants in destroying the insect. Many attempts have been made, but they always injured vegetation. I trust you will, in your excellent Magazine, entreat every gardener's attention to the insect; and indeed chemists, in trying to destroy it without injuring vegetation, will find a scope for their talents. He who succeeds in conquering this European locust will render a great service, not only to agriculture and horticulture, but to society; indeed it will be an act of humanity to the peasantry of this country, as I have seen many poor and industrious families ruined by this pest to vegetation. I shall be very happy to afford farther information in answer to any enquiries that may be made by any person in his endeavours to destroy them. I have the honour to remain, &c. — *A. C. Calvert. Trianon Nursery, near Rouen, October 18. 1827.*

We first sent M. Vibert's pamphlet to Mr. Swainson, who furnished the article on the subject which we have published by itself, and, subsequently, to our able and experienced contributor, Mr. Main, who supplied what follows:—

M. Vibert, after forty years' occupation of a garden, during the last six of which he has been annoyed by the grub of the cockchaffer to a ruinous extent, is resolved to leave a nursery which he can no longer cultivate to

advantage. An account of this surrender, and the cause of it, he thinks, may be serviceable to both gardeners and farmers, and therefore has published it to draw attention to the subject. He says he is not a naturalist; but, by dear experience, he knows, perhaps, more of the history of this insect, than those who can prosecute its study free from apprehension of its ravages.

He describes the May bug, which appears to be the *Scarabæus melolóntha* (see p. 295.), through all the stages of its growth. The perfect insect comes forth about the end of April, continues visible about six weeks, though he thinks that, individually, they do not live above twenty-five, and perhaps no more than fifteen days: Buffon says eight, but it is certain they live longer. In ascending from their dormitories they are sometimes arrested within an inch or two of the surface by rain or cold. They couple in a few days after their appearance, the female dying soon after she has laid her eggs, the male dying soon after *accouplement*. A part only of the embryos of eggs are fecundated; many eggs remain unhatched. Some think they lay from fifty to one hundred eggs, but our author could never find above thirty or thirty-five. In laying, the female makes a hole in light soil, and especially where there are dung droppings, of six or seven inches in depth, which costs her an hour's work; lays chiefly in the night, though sometimes in the day; impossible to tell how long she is laying her quantity. Thinks the eggs hatch in about three weeks; has found, on the 10th of July, the young grub above half an inch long; thinks that during the two first weeks of their existence they do not live on the roots of plants, but on particles of decomposed vegetables, though they begin to be destructive in less than two months. Their ravages, however, do not appear till the autumn; at the end of October they are about half an inch in length, and as thick as a little goosequill; their size differs according to the time at which the eggs are laid. This difference of size is observable even to the end of their second year; they descend about 2 ft. into the earth in the month of November, where they make a smooth round hole, and in which they lie stiff and curled up during winter. This hole they leave about the 10th of April, and rise to the surface of the ground; though without taking nourishment, they become larger in size during their rest. Throughout the summer of this year they are inconceivably destructive, and in the autumn return to their dormitories, having acquired four fifths of their size. In the spring they remount for the second time, and begin the third and last year of their existence; their voracity increases during the short time they have to live, as for two months and a half their depredations are terrible.

Some time before they descend for the last time, their colour becomes a dull yellow, especially about the tail; and, during their life, they several times cast their skin or slough, and some of them perish while undergoing this change. Towards the 15th of June they begin to descend to a greater depth in the soil; where, after having lived in the form of grubs for the space of two years, which include three summers, they are changed into the chrysalis state.

It is rather difficult to fix the time of their change from the chrysalis to the perfect state, but M. Vibert conjectures that it is towards the end of February; but their under-ground history is involved in obscurity, because, in our labours of trenching and digging, we often find perfect insects in October and throughout the winter months, of their full size and natural colour. These must be either retarded or premature changes, and, as they are against the general laws of nature, deserve the attention of naturalists.

Buffon has led us into error by saying that these grubs live three or four years; by which, probably, he means their whole existence from the egg to the perfect state. M. Vibert divides their existence thus: —

As active devouring grubs	-	-	-	14 months.
As inactive and fasting grubs	-	-	-	10
				—
Existence as grubs	-	-	-	24
Existence in a state of chrysalis	-	-	-	8
Existence as May bugs in the egg, 20 days; under } ground, 20 days; and above ground, 80 days, - }				4
				—

Total period of their existence, 36 months.

So that the greater part of their existence being in the grub state, a war of extermination should be carried on against them while in that state. The female chooses dunghills, compost heaps, ground lately moved and open to the sun and air, to deposit her eggs; rejects shady woods, underwoods, and strong clayey ground. The most shady parts of *M. Vibert's* garden escaped, when the more open were infested. He found them equally numerous on a naked fallow as among crops; that they eat any vegetable substance, dead or alive, devouring the very hooks used in layering plants. Grass, herbs, shrubs, and trees are equally their prey, and, what is most strange, they are equally fat and healthy where they have nothing, as when in the midst of plenty! *M. Vibert* has noticed three other sorts of grubs, which he thinks belong to the beetle tribe, but is uncertain which they are. The depredations of the perfect insect are upon high rather than low growths; but the damage done by them is not to be compared with the damage they do in their grub state. In 1825 their ravages began, but were not so much felt as in the following year, for in that year whole acres of lucerne, strawberries, &c., were totally destroyed.

As means of destruction, *M. Vibert* thinks the Roman lettuce a better bait than the strawberry, which has been recommended; and digging, with a view to gathering them, should be done in damp weather, for, on the weather becoming dry, the grubs descend below the reach of the spade.

From *M. Vibert's* book it is evident that the "white worm," Turk, or miller grub, which he describes, is the larva of the *Scarabæus melolontha*. The only other beetle which has similar habits is the *Scarabæus solstitialis*, or hoary beetle. The latter is the smaller of the two, and, in some seasons, equally plentiful. [Mr. Swainson, it will be observed (p. 295.), thinks it may be the rose beetle.] In England both these species are the principal food of rooks, jackdaws, crows, and sparrows. Rooks easily find them when near the surface by the smell, and dig them up with great dexterity.

Premiums to those who catch them, and forming heaps of dung, or stubble which has been trampled for some time by cattle, to attract the females in their breeding season, are the only means which are practicable to destroy them. A compost of bog earth and rotten dung, frequently turned, and to which poultry should have access, would be an excellent trap for them; but probably the best of all traps is a heap or ridge of the siftings of tan, after it has been rotted in the hot-house. — *J. M.*

We have had three large and fourteen small grubs collected: half of them we laid down on a gravel walk, and watered with lime water, of the strength used for destroying worms, without succeeding in killing them; the other half we buried in a pot of earth, and watered with lime water of double the usual strength, that is, at the rate of two quarts of powdered lime to two gallons of water, and found them at first apparently killed, but, on examining the pot after an interval of three days, they appeared in as great vigour as before the lime was applied. We then tried half of them with tobacco water, and half of them with salt and water: both mixtures killed them; but salt and water, of a sufficient strength for that purpose, would destroy vegetation, and tobacco water would be much too expensive.

We fear, therefore, that the grubs must be left to the crows and rooks, and the perfect insect gathered by hand. In England this might form a parochial occupation for the aged poor of both sexes, and for children, at so much a score. We shall be most happy if our French readers derive any useful information from what we have been able to collect. — *Cond.*

Chateauxvieux, M. Lullin de, Author of Letters on Italy, &c. :

1. Lettre à M. Pictet, sur la Ferme Expérimentale de Coppet. Paris. Pamph. 8vo, pp. 59.
2. Réunion Agricole, dans la Ferme Expérimentale de Coppet, le Vendredi, Sept. 29. 1826. Paris. Pamph.

Mémoires d'Agriculture, d'Economie rurale et domestique, publiés par la Société Royale et Centrale d'Agriculture. Paris. 8vo, 1 vol. pp. 452. 2 pls.

This volume contains biographical notices of two deceased members; reports on a machine for separating clover seed; on veterinary medicine; on manures; on the translation of books on agriculture, calculated for the improvement of France; on cider; on the blindness of horses; on the national forests; on the shepherd Samson, who received a medal for the care taken of his flock; on the improvements made by Comte Hendelet; on the experimental farm of M. Demerson; on Gruyère cheese; on fallows; on the Hainault scythe; and on the preservation of grain.

GERMANY.

Voght, Baron von, a Proprietor and Cultivator at Flotbec on the Elbe, near Hamburg: *Landwirthschaftlicher Schriften.* A Collection of Papers on Rural Economy. Hamburg. 8vo, pp. 364.

We have already (*Gard Mag.*, vol. i. p. 441.) noticed an ingenious work of this author: the present is a relation of experiments in the language of his peculiar statistics; and we would recommend both volumes to our contemporary, Mr. Fleming, as affording valuable materials for his magazine. We understand the establishment at Flotbec well merits inspection, and we recommend a visit there to our countrymen passing through Hamburg.

Thaer, M., of Möglin, in Prussia, a well known and justly celebrated practical Agriculturist, Author of numerous Works: *Quelques éclaircissemens, &c.* Remarks on the Agricultural Statistics of the Baron de Voght. Hamburg. Pamph. 8vo.

M. Thaer and the Baron de Voght are intimate friends, and the object of the present pamphlet is to propose some improvements on the technical phraseology adopted by the latter; such as activity of the soil (*thätigkeit*) for power of the soil (*erdvermögen*), &c.

Walter's Allgemeines Teutscher Gartenbuch, &c. Walter's German Gardener, or Popular and Practical Instructions relative to the Laying out, Management, and Culture of Gardens of Ornament, Orchards, and Kitchen-gardens. Leipzic. 8vo, 3d edit. 3 pls. 3 flor. 36 kr.

ITALY.

N. N., a Professor in the Academy of Bologna: *L'art di riparare dai Calori estivi le Abitazioni e le Persone.* On the Art of preserving Houses and Persons from the great Heats of Summer. Bologna. 8vo, pp. 50.

Large and lofty apartments, so contrived as to admit, by internal openings, of a continual circulation of air, and with few and small windows, so as to exclude light and the sun; thick walls and double roofs; blue or purple glass in the windows, as being less capable of penetration by heat

porches and verandas; and the shade of trees, are recommended as the ordinary means of producing a cool house. The extraordinary are external walls with interstices of at least a foot in width, which may be filled with snow and salt, or powdered ice and salt, or watered frequently. Through such vacuities spiral tubes may be passed, with one opening to the open air, and the others in the chamber to be cooled; the effect of which will be the entrance of a current of air, cooled in its passage through that part of the pipe which is contained in the vacuity, as steam is cooled to water by passing through the worm of a still. The use of pots of flowers in rooms is approved of, because they produce oxygen gas, and absorb insalubrious gases. The author regrets that modern architects in Italy have left off the grave style prevalent in the time of Leo X., and adopted "a *bizarre* construction, Sarrasin, French, and even Russian," disgraceful to his country.

To exclude excessive heat from the person, he recommends the thinnest linen or cotton stuffs that can be procured, put on as loosely as possible.

Elenco degli Alberi principali che possono servire all' Ornamento dei Giardini, &c. Nomenclature of the principal Trees and Shrubs used in Ornamental Gardens, with Notices of their Culture. Turin. 8vo.

In his introduction the author endeavours to prove that Italy was the first to display the irregular or English style of gardening (see *Encyc. of Gard.*, § 78.), and the advantages to public morals and taste that would attend a more general cultivation of gardens among all classes of society. To facilitate this cultivation is the grand object of his work.

Bonafous, M. Mathieu, Director of the Experimental Garden of the Royal and Central Agricultural Society of Turin: *Osservazioni ed Esperienze Agrarie*. Observations and Experiments in Agriculture. Turin. 8vo.

After some remarks on the utility of experimental farms, follow some observations on different varieties of wheat; on the hill or dry rice of China; on the potato; and the Jerusalem artichoke. The chief obstacle to the culture of the potato in Piedmont is the necessity of cooking it, fuel being there extremely dear.

Sette, Vincent: *Memoria storico-naturale sull' Arrossimento, &c.* Notice respecting the Red Colour which appeared on different kinds of Food in 1819, in the province of Padua. Venice. 8vo, pp. 63.

The heat and moisture of the summer of 1819 was favourable to the growth of *Býssus botryoides*, which appeared on bread, meat, and especially on dough, paste, and pastry.

Lomeni, Dr. Ignace, and G. Silvestri: *Amministrazione economica della Foglia de' Gelsi nella Coltivazione de' Bachi da Seta*. On the Economical Application of Mulberry Leaves in rearing the Silk Worm. Milan. 8vo, pp. 96.

An ounce of the eggs of the insects will consume 1589 French pounds of leaves, and produce 151 lbs. 4 oz. of cocoons; that is, about 13 lbs. of leaves will give about 1 lb. of raw silk.

POLAND.

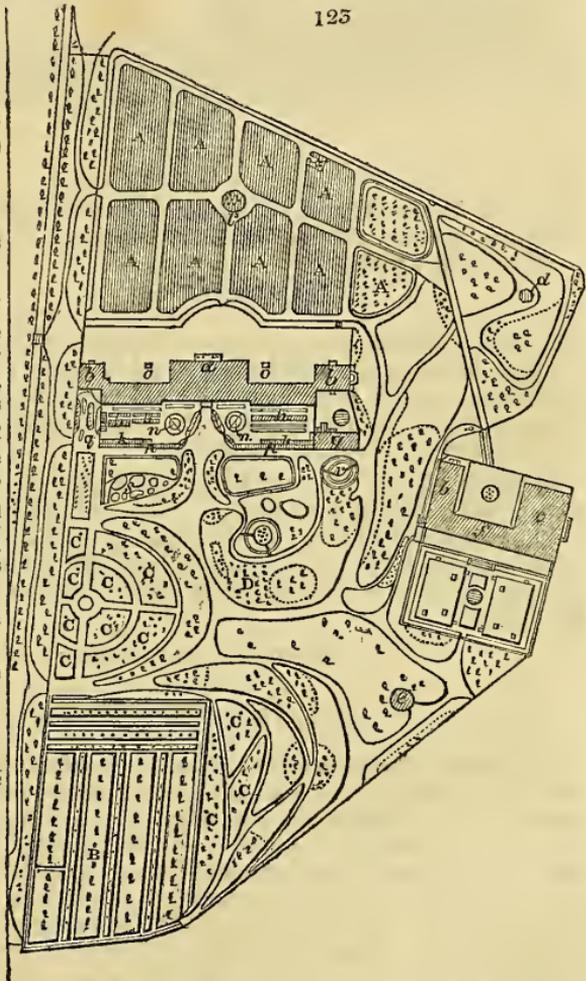
Schubert, M., C.M.H.S., Professor of Botany and Director of the Botanic Garden of the University of Warsaw: *Spis Roslin Ogródu Botanicznego Krolewskiego-Warszawskiego Uniwersytetu*. Catalogue of Plants in the Botanic Garden of the University of Warsaw. Warsaw. 8vo, pp. 580. 2 pl.

The first edition of this work, in 1820, contained 5000 species; the present, which is dated 1824, contains about 10,000. The scientific name,

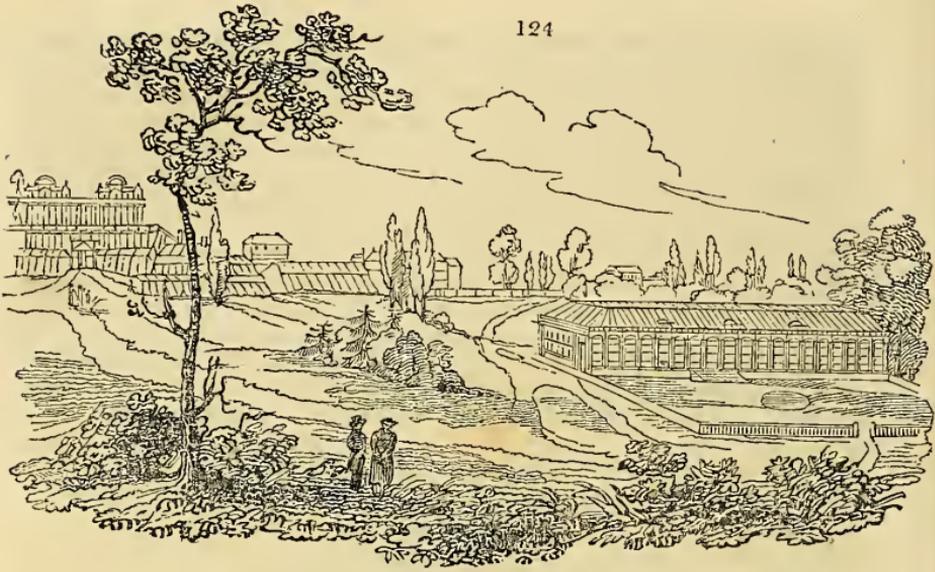
authority, habitation in the garden, native country, and synonyms are given, but not the Polish names. The species are arranged according to the natural system, commencing with the Acotyledones. Each species is designated by signs, indicating that it is annual, of two years' duration, perennial, woody, with accumbent cotyledons, incumbent cotyledons, conduplicate cotyledons, spiral cotyledons, or biplicate cotyledons. In the first class, Acotyledones, are only six species of *Lycopodium* and two of *Bernhardia*. In the second, Monocotyledones, are chiefly hardy species, and a few palms and Cape bulbs. The great majority of species, both of Monocotyledones and Dicotyledones, are hardy herbaceous annuals and perennials. If so many species as 10,000 are actually in this garden, it must be one of the richest on the Continent, which M. Schubert in his preface says it is. He is in correspondence with the principal gardens in Germany, and has no greater happiness than in giving and receiving, so as to extend the number of interesting or useful plants, and promote the study of vegetable nature.

An engraved plan is given (*fig. 125.*) which displays

- A, Botanical nursery.
- B, Orchard.
- C, Nursery of forest trees and shrubs.
- D, Vineyard.
- a, Astronomical observatory.
- b, Dwelling-houses of the professors and gardeners.
- c, Theatre, in which were formerly acted plays for the Polish court, the king living chiefly at Lazenki, or the Bath, (*Enc. of Gard.*, § 281., and *fig. 25.*)
- d, Small chapel in an old gravel pit, formerly used as a burying-ground to the barracks of the Royal Guard.
- e, Reservoir of water.
- f, Green-houses, and a vinery.
- g, Fig-house.
- h, Brick-built pits with flues.
- i, Hot-bed frames.
- k, Sheds.
- l, Dial and compass.
- m, Domestic offices.
- n, Summer station for the green-house plants.
- oo, Pumps.
- p, Shrubbery.
- q, Stations for plants.
- r, Evergreen shrubs.
- s, Compost ground.



A view of the garden (*fig. 124.*) shows the ancient green-house (*a*), observatory (*b*), and modern plant-houses (*c*), as conspicuous objects. Of the surface of the situation we have a perfect recollection, and know it to be very much varied; the soil is light, sandy, and gravelly; the surrounding scenery the most agreeable in the neighbourhood of Warsaw.



RUSSIA.

Zigra, J. H., Member of the Imperial Academy and Economical Society of Petersburg: *Nordischer Blumenfreund*. *The Florist of the North*. Riga. 8vo, 1 pl.

WEST INDIES.

La Sagra, Don Ramon de, Professor of Natural History in the University of Cuba: *Informe sobre el Estado actual de Jardin y de la Cátedra de Botánica aplicada á la Agricultura, &c.* Information respecting the present State of the Garden, and the Professorship of Botany applied to Agriculture. Havanna. 8vo, pp. 25.

Professor Ramon de la Sagra is assembling all the indigenous plants of Cuba, besides a number of rare plants of other countries, in his garden; and he invites the directors of the principal botanic gardens of Europe to make exchanges with him. He proposes also to translate Decandolle's *Essai sur les Propriétés Médicales des Plantes* into Spanish, for the benefit of the island.

 ART. IV. *Literary Notices.*

A TABULAR Gardener's Calendar will be ready in a few days for publication, to be called the *Gardener's Remembrancer, and Apiarian's Monthly Calendar*. It will display, at one view, the work required to be done in the flower-garden, shrubbery, kitchen, and fruit-garden, green-house, nursery, &c. On the back of the sheet will be a Vegetable and Seed Directory, denoting the proper times for depositing, and how to sow and manage the various crops, &c. It will, in fact, be clear and concise, instructions on every point required in gardening, and the management of bees. Ridgeway. [This is rather a happy idea, and, if judiciously realised, will be well received.]

Universal History of Plants. — Since this Magazine was commenced, we have received various applications and hints respecting a new edition, in 8vo, of *Miller's Dictionary*. In allusion to some of these suggestions, we have (p. 209.) expressed our hope that this Dictionary will never again

appear in an alphabetical form; and, after a good deal of consideration on the subject, and having had some experiments made on printing plants and insects in colours, we have come to the resolution of commencing a work under the title of *A Universal History of Plants*, to serve as a substitute for *Martyn's Miller's Dictionary*, and to contain all the improvements which the present state of botany, gardening, and agriculture admits of. We shall have ample and varied assistance in the different departments of the work, so as to give it every perfection of which it is susceptible; and, till a more ample prospectus, and the first part of the work, appear, the following outline is submitted:—

1. The arrangement will be according to the natural system, and all the plants hitherto described will be included; their botanical characters, natural and artificial history, comprising their geography, culture, uses, application in the arts, &c. &c., given.

2. Coloured figures, printed in the manner of the first three figures facing p. 522., will be given, of one or more species of every genus described, of all the most important species, and of all the natives of Britain. Coloured figures will also be given of a number of the principal florist's flowers, and of a selection of the best hardy and exotic fruits, executed in the style of *figs. 113, 114, and 115.*, facing p. 522., and agreeably to our theory of the best plan of figuring and describing fruits in p. 526–529., as modified by our correspondent M. H., p. 550.

3. The work will appear in parts, quarterly, under the following modifications: 1. In quarto, the letter-press and corresponding plates together; 2. The letter-press by itself, for one class of purchasers, and the plates by themselves, with short descriptions, for another class of purchasers; 3. The letter-press and the plates of the plants of Europe, under the title of *History of the Indigenous Plants of Europe*, together and separately; 4. In octavo, the letter-press and the plates of the plants of Britain, under the title of *History of the Indigenous Plants of Britain*, together and separately. This mode of publishing will accommodate every class of purchasers: the gardener, who will take the letter-press only of the first modification, and which will not cost him more than the present price of *Miller's Dictionary*; and to the clergy, medical men, and ladies resident in the country, *The Plants of Britain*, their figures, and history, will be of particular interest.

4. The whole will be stereotyped, so that there cannot soon be a second edition; but, when the work is completed, a perpetual supplement will be commenced, on a plan that will end in including all the plants of the world, so given as to admit of any species of classification.

5. The great advantage of the whole of this plan to the public, will result from the coloured figures being printed from blocks of wood, instead of being engravings coloured by hand; by this, and the quarto size of the plates, the figures of from 6 to 24 plants, or 6 to 24 florist's flowers, or 6 to 24 fruits, according to their size, or as they may admit of reduction, may be afforded for little more than what is charged for one plant, florist's flower, or fruit, in any of the principal botanical publications of the day. It is true, the figures will not be so perfect as those coloured by hand, but we may refer to the cut facing p. 522., in proof of their sufficiency for every useful purpose.

Magazine of Natural History.—Our correspondent S. (Manchester, Oct. 14th), and other readers and friends, are informed that the plan of this work is completed, and that its publication in quarterly numbers, with figures of plants, animals, and minerals, printed in colours, will shortly be announced. In the mean time, communications on zoology, botany, mineralogy, geology, and meteorology, of a popular description, may be addressed, free of postage, "To the Editor of the Magazine of Natural History," at Messrs. Longman, Rees, & Co.'s, Paternoster Row. A detailed prospectus will appear with the first number.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

SUGAR from Beet Root.—At a dinner recently given by the town of Amiens to the King of France, there was placed on the table, opposite His Majesty, an immense column composed of sugar, manufactured from the beet root, at Franvillers, near Amiens. The column consisted of four different qualities of refined sugar, and crystals of raw sugar formed the pedestal. The manufacture of sugar from beet-root seems to be making great advances in France. (*Newsp.*)

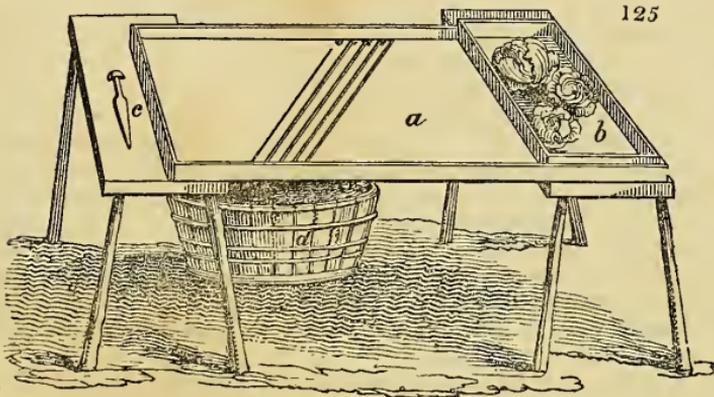
Knowledge for the Poor.—A work is announced by the Baron Charles Dupin, which in many respects will correspond to our *Library of Useful Knowledge*. It is to be entitled the *Petit Producteur*, and is to consist of a collection of works containing the notions which may be spread with most advantage to themselves among persons of very moderate income. Works which contain what is most interesting to the cultivator, the manufacturer, the mechanic, the tradesman, and the simple workman or labourer, are to be given in separate series. The whole work is to be in volumes, in 18mo, with many wood-cuts, and sold at 75 cents. each volume. Subscriptions are received chez Bachelier, libraire, Quai des Augustins, & chez Delaunay, au Palais-Royal.

GERMANY.

Sauerkraut, &c.—Sir, I beg leave to send you an account of the manner in which Sauerkraut is prepared in Germany, which I had lately an opportunity of seeing at the house of a friend. The cabbages of which it is made are very large, and perfectly white. The first process of preparing them is, to scoop out the interior part of the stalk with an iron instrument or scoop; they are then cut into small shreds by a wooden machine, composed of a flat board or tray, which has a ledge on two sides, to steady a box or frame, into which the cabbages are put. In the middle of the board are four flat pieces of steel, similar to the steel part of a spokeshave, placed in an oblique direction, and the near edge of each being a little raised up, with small spaces between each, to let the shreds fall down into a tub placed underneath to receive them. The cabbages are then put into the box before described, which is pushed backwards and forwards, when the cabbages being cut by the steel, fall in small shreds into a tub placed below. A barrel stands ready by to receive them when cut, the sides of which are first washed with vinegar. A man stands on a chair by the barrel, with clean wooden shoes on, whose business it is to salt and prepare them, which is done in the following manner:—The man first takes as much of the cut cabbage as covers about four inches above the bottom; he next strews upon it two handfuls of salt, one handful of unground pepper, and

a small quantity of salad oil ; he then gets into the barrel, and treads it down with his wooden shoes, till it is well mixed and compact. He next takes another layer of cabbage, and puts salt and pepper on it as before, and treads it again, and so goes on till the barrel is filled. A board is then placed on it, and upon the board some very heavy weights are put ; and it remains so ten or fifteen days, when it partially ferments, and a great deal of water swims on the surface : it is then put into the cellar for use. The men who prepare sauerkraut are Tyrolese, and carry their machine, which has not been invented more than ten or twelve years, on their backs, from house to house.

In the annexed sketch (*fig. 125.*), *a* is the cutting-tray, *b* the box into which the cabbages are put, *c* the scoop, *d* the tub into which the shreds fall. I am, &c. — *W. B. S. Aix-la-Chapelle, Nov. 5. 1827.*



To the preceding account from your young correspondent, I add a few general observations. Few things in the domestic economy of the Germans strike an English resident more, than the preparation, far exceeding that in his own country, which they make for the winter consumption of vegetables. Sauerkraut is a kind of food, of which every family stores up, in proportion to its size, one or more large casks ; and, at this time of the year (October and November), the market-places are crowded with huge white pyramids of cabbages (all heart) for sale ; and, in every court and yard into which an accidental peep is obtained, is seen the bustle of preparing them for use, and the baskets of shredded cabbage, which in that state resemble mountains of green-tinged froth, or syllabub. *Kidneybeans* are another vegetable of which, at an earlier period of the year, the Germans store up large quantities for winter consumption ; a circumstance which accounts for the number of acres of this plant, which at first excite the traveller's surprise, cultivated in the open fields, in the neighbourhood even of towns not very large. Of the quantity of kidneybeans thus stored in inns and large families, an idea may be formed from the following fact :— During two days that we spent, in the latter end of August, at the Trierische Hof, the principal hotel at Coblenz, from eight to ten women were constantly employed in the yard (as they probably had been before our arrival, and continued to be after our departure,) in trimming and slicing [the pods of] kidneybeans, of which, besides a large basketful next to each, there stood another in the midst of the circle that would have filled a good-sized cart. The beans thus prepared are plunged into hot water for a few minutes, then drained, and closely packed with salt in jars or barrels.

In a similar manner are stored, in October, considerable quantities of the leaf-stalks, and dried ribs of the leaves of young turnips (after the thin part

of the leaf has been stripped off), and a portion of the bulb, all cut into lengths of about an inch.

Without this provision of sauerkraut, kidneybeans, and turnips, added to an ample stock of potatoes, onions, carrots (kept in sand), &c., all deposited in the spacious cellars with which every decent house is provided; and, moreover, abundance of apples, pears, and quinces, both fresh and dried (by being pared, cut into slices, and hung on strings near a fire); a German family would think itself ill fortified against the approach of winter, and would relish very badly being put, at this season, on the short and unvaried English commons of potatoes, with an occasional change of borecole or Savoy cabbage. In fact, no German conceives he has dined tolerably, at any season, without having eaten of three or four kinds of vegetables. To decide which is the *best* system, the German or the English, would require a long discussion; but two points seem clear: first, that the adoption of the varied German vegetable fare in England, would lead to a great extension of its horticulture; and secondly, that the English cannot fairly determine how far they would prefer the German system until they have tried it. Many English residents in Germany are as loud as the natives in the praise of sauerkraut when properly cooked, which is every thing. For these reasons, it might be worth while for some of our horticultural societies to procure from the foreign ones, full and precise directions for preparing and storing their winter vegetables, and then offer premiums for the most successful imitation of the practice at home, giving a fair trial to sauerkraut, salted kidneybeans, &c., by having them served at their anniversary dinners, cooked in the most approved foreign modes, as there seems no good ground why vegetables preserved and cooked in new ways should not be tasted and decided on at such dinners, as well as fruits grown or kept by new processes. (*Note of a Friend.*)

Turnip Cabbage. — It is surprising that this valuable vegetable (the *Kohl-Rabi* of the Germans, *Chou-Rave* of the French), of which large quantities are regularly sold the whole summer in the German markets, is not more cultivated in England, as it is little inferior to cauliflower; and yet, from its requiring less care and room, can be grown at a price so much lower, that a given weight of cauliflower, in the market of Aix-la-Chapelle, costs five or six times as much as the same weight of kohl-rabi. The mode of cooking, however, makes all the difference. Half-boiled, in the English way, it would be little thought of; but when cut, as in Germany, into small oblong pieces, and thoroughly and slowly boiled, or rather stewed, it forms an excellent dish. The average diameter of the *bulb* (applying this term, for want of one more appropriate, to the globular enlargement into which this variety of the cabbage tribe expands, just above the ground,) is from 3 to 4 inches, but it is often grown much larger. One purchased in the market of Aix-la-Chapelle, in October last, measured 18 inches in circumference, and weighed (exclusively of leaves and root) 4 lbs. 9 oz. Prussian weight. It could not be estimated to have cost more than one half-penny English; and having been cooked separately, by way of experiment, made a large dish, more than enough for five persons, at dinner, though no other vegetable was eaten, as it was preferred to all the rest at the table. (*Ibid.*)

DENMARK.

The Gardening at Sorgenfrie has for a number of years been but very indifferent, and it is now just the same as before, and perhaps worse than that of Syon House was in 1824–26.

One of the first places for horticulture in this country is, without exception, *the Royal Gardens of Rosenburgh*, under the superintendence of

the royal gardener, P. Lindegaard, Esq. ; and no place in this country can in any respect come near to it in cultivation and forcing. Every plant M. Lindegaard has under his care looks remarkably well ; but the principal objects of attraction are the vines. One instance may be mentioned : — In 1822 M. Lindegaard planted three plants in front of a large orangery, 160 ft. long, viz. two plants of Chasselas de Fontainebleau, and one of the Parsley-leaved Grape. All of them showed fruit the first summer. In 1825, he says, one plant had 14½ lbs. weight of fruit, the second 14 lbs., and third 10 lbs. weight. In 1825 M. Lindegaard planted four plants more ; and now the whole front of the orangery is covered with vines, except the windows : five plants of Chasselas de Fontainebleau, here named White Van der Lahn ; one plant of the Parsley-leaved, and one plant of the Blue Cluster, here named Early Leipziger, and in France Madeleine hâtive. Each plant has produced upwards of one hundred fine large bunches this year, which will be ripe in the course of a month. The wood for next year is as thick as one's finger, and so is that of every grape vine in this garden. The extensive walls in the garden are covered with grapes and peaches ; and most of the grapes will ripen this year on the open wall, without any glass covering whatever. The peaches on the walls begin now to ripen : fine apricots have been gathered this year, almost in bushels, from the walls. The peaches here are deserving of the same praise as the grapes ; the trees are as fine as any I have ever seen in England, covered with abundance of fruit, and beautiful bearing wood for the next year. M. Lindegaard has published a book on the cultivation of grapes in Denmark (*Encyc. of Gard.*, p. 1115.), and, if you think it worth notice, I will translate it and send it to you in a future letter. There are several old vine plants by the walls upwards of a century old, and still in a flourishing state. M. Lindegaard cultivates sixteen sorts of grapes in his garden.

Among the pine-apple plants M. Lindegaard has got the New Providence, the Blood, some Havannah, and, I believe, the Black Antigua ; and, considering the bad construction of his houses and pits, the fruits are good.

In the month of July I saw a bed of Keen's Seedling Strawberry in this garden, remarkably fine, covered with large fruit, and equal to any thing I ever saw. To get perfect young strawberry plants, lay out the runners when the fruit is gathered, on one side of the alleys ; loosen the mould where they are to be laid, and add a little fresh mould to it ; fasten them down with carnation hooks, and supply them with water : in a couple of weeks you will have fine plants. But M. Lindegaard has written upon this subject to the Horticultural Society, and you will find more there about it. He cut a melon last week of the Grand Mogul, weighing 18 lbs.

Mushrooms and sea-kale are not yet cultivated in this country. I understand sea-kale is not liked in the kitchen ; but its culture is unknown here, and it is of no use to introduce new methods, or new eatable plants, if they are not accepted. Rhubarb is only grown in the botanic garden among the hardy plants, in order to have it in the collection.

The *Coreopsis tinctoria*, here *C. bicolor*, is quite as plentiful as in England. M. Lindegaard has got a good stock of plants of *Primula sinensis* ; but the fine tribe of Camellias are wanted very much, with the exception of some plants of the double white, red, and single red ; and very little more than a couple of dozen of these plants will perhaps be the whole stock in the country. I have not yet seen a Camellia with the nurserymen about Copenhagen. Most of the New Holland plants are unknown. The *Epacris grandiflora* is one of the very rarest of New Holland plants. I have not seen it here, but am told a plant of it is in the botanic garden.

I would have sent you the *Hortus Hafniensis*, but on enquiring of M. Holböll, the most celebrated botanist and botanical cultivator of Denmark, he told me that this book is out of print at present; but another edition will soon be published, which I shall send you as early as possible. I saw, in the month of July, a beautiful show of carnations by M. Holböll, the finest collection in this country, and not inferior to Mr. Hogg's of Paddington; but this gentleman has for a number of years cultivated carnations and auriculas, in his leisure hours, to a very superior degree of perfection.

The fruit and vegetable market has been well supplied every day this summer, and things sold at a very low price. The harvest was remarkably fine, but the summer was the best that has occurred for a long time, and indeed as good as any body could wish for. Not a pine-apple has been seen on the table this year; but M. Lindegaard will have some ripe fruit about the middle of this month, which will be the earliest and finest in the country. I am, dear sir, &c.—*J. P. Petersen. Copenhagen, Sept. 3. 1827.*

NORTH AMERICA.

Horticulture in and about New York. — Sir, In company with a friend, I spent the greater part of the summer of 1826, in the vicinity of New York; and I take the liberty of sending you a few remarks on the present state of horticulture in and about that city, with the hope that they may serve to amuse, if not instruct, the readers of your valuable Magazine. From its locality, its resources, and the proverbially enterprising character of its inhabitants, the state of New York seems destined to take the lead in America, in this delightful science, as it already does in agriculture and commerce.

Shortly after our arrival in the city we attended a meeting of the Horticultural Society there; and had the honour to be introduced to Doctor Hosack, the President; a name not unknown in the records of botanical writers. The business of this Society is conducted much on the same principles as they are in this country, and their by-laws and regulations seem to have been founded on those of the Linnean Society of London. In addition to the usual officers, they have a Lecturer on Botany and Vegetable Physiology, the celebrated Doctor Mitchill, no less known for his acquirements in the arts and sciences, than for the simplicity and urbanity of his manners. I will here remark that a professorship of this nature, where the young gardener might receive lectures on botany, would, in my opinion, be of great utility in this country. I leave the hint with you, well knowing that, if you concur in my idea of the subject, you will improve it. It was pleasing to me to observe that, though the Society contained among its members men eminent for their rank and talents, as well as practical gardeners, there was the greatest unanimity; and though one member, on leaving the meeting, would retire to discuss laws, and the rights of nations, in the senate, and another to his more humble avocations in the garden, there was none of that distant and reserved air, which is so much in fashion among our great men, when meeting with those whom they have been taught to consider their inferiors. By this cordial junction of wealth, rank, and practical skill, much has been done for the science of gardening, and more may be justly expected.

In and about the city are several public parks and gardens, most of which are yet in a state of infancy; but they appear to have been selected judiciously, and with some regard to the health and convenience of the majority of the inhabitants.

Saint John's Park, in the western section of the city, is of considerable extent, and has lately been thrown open to the inhabitants; it is tastefully

and very judiciously planted with the ornamental trees and shrubs indigenous to the country.

Of market-gardens there are abundance, and the markets were amply stocked with the choicest fruits and vegetables; of peaches, in particular, there was a great plenty, and fine fruit were selling in the market at 75 cents. (about 3s. English) the peck. It was a novelty to us, to see in the market-gardens and in the pleasure-grounds of gentlemen, *Standard Peach Trees* bending under the weight of this delicious fruit; and, with the exception of the gardens of Charles Hall, Esq., and the market-grounds of Mr. Shaw, we did not notice any walls appropriated to the ripening of this fruit. In the markets, and at the exhibitions of the Horticultural Society, we saw some peaches of an extraordinary size, in particular one called Hoyte's Lemon Clingstone and the Morrisina Pound Peach; a single fruit of the latter weighed 14½ oz. We should not, ourselves, perhaps have given credence to this statement merely on hearsay evidence, but we *saw* the fruit weighed, and — but the old proverb is somewhat musty. A new apple, a seedling from the celebrated Newtown Pippin, is spoken very highly of: it is called Ortley, in honour, as I am informed, of one of the American generals in their struggle for independence. I believe trees of these fruits are to be found in our Society's garden; and the public will probably be enabled to obtain them from some one or other among the favoured nurserymen.

We paid a visit to the *Linnean Garden* at Flushing, which contains a numerous and extensive collection of hardy fruits, a very fine assortment of herbaceous plants, and a choice selection of Botany Bay and New Holland plants.

At the *New York nursery*, under the superintendence of Mr. Floy, there is a good collection of green-house plants, and the greatest variety of American trees and shrubs I recollect to have seen at any one establishment.

The nursery of Mr. Hogg at Bloomingdale, and that of Mr. Wilson, at Greenwich, are newly established, but fast rising to eminence; the former for its fine collection of beautifully grown exotics, and the latter for its extensive variety of fruit trees. Too much praise cannot be given to the curators of the Linnean Garden for the neatness and regularity which are manifested at their establishment.

The number of private gardens in and about the city is large, but they are not, in general, carried to that extent which so justly distinguishes those of our own country; nor can it be expected. The United States is emphatically a new world, her political existence scarcely exceeding half a century; and I question if any other nation has, in the same period of time, made as much progress in this delightful science.

Since my return, I have been repeatedly asked, by gardeners and others, my opinion as to emigrating and settling in this new world. Giving advice, I know from experience, is a thankless task; but the few following remarks may be useful to those who are determined on leaving their native land. Gold is not scattered about the streets in America as is imagined by some, nor is that country altogether a barren wilderness as is imagined by others. The industrious man will find plenty of employment, and get better paid for it than in this country, but a fortune is not to be acquired there any more than here without industry and perseverance. Clothing is dearer, but provisions of all kinds are much cheaper. The climate of the middle states is much similar to our own. In New York the winters are more severe, but the summers are much warmer. The government is pure and economical; taxation is but small; and the rights of the poor man and the rich are equally respected.

In conclusion, I will observe that I visited America with feelings somewhat prejudiced, and have returned with all my prejudices removed, and

am, as an Englishman, proud to think that this people, who are fast treading upon our heels in every useful art and science, are descended, in a great measure, from the same ancestors as ourselves. I am, Sir, &c. — *Viator. Kensington, October 4. 1827.*

Mr. Prince's Nursery Establishment.—Sir, In one of the late numbers of your Magazine (vol. ii. p. 90.) is a communication from Mr. William Prince, nurseryman, of Long Island, "Corresponding Member of the Horticultural Society of London, of the Linnæan Society of Paris, of the Imperial Society of the Georgifili at Florence, &c. &c.!" giving a statement of his establishment, which, being materially erroneous, I deem it proper to correct.

Mr. Prince states his nurseries as "much more extensive than any, or than all others combined, in America." Had he confined his remarks to this country, where such assertions are daily made in his advertisements and other publications, and where the latitude of expression he unfortunately allows himself, is fully known, the present communication would not have been addressed to you: but when such assertions are made in Europe, where the same facilities of testing the accuracy of his statements do not exist, and through the medium of a work so ably conducted and widely circulated as the Gardener's Magazine, it is no longer a merit to be silent; but, on the contrary, it becomes the duty of those engaged in the same profession to correct the error, as a portion of the business in which they are engaged consists in the exportation of American plants and seeds.

According to Mr. Prince's communication to you, his nurseries are thirty-two acres in extent. From what I now have to state, you can form some estimate of the degree of credit proper to give to the assertion of their being "*much more extensive than all others combined, in America.*"

The nurseries and gardens of D. and C. Landreth, near Philadelphia, cover a space of upwards of forty acres, and have been in full operation for many years. The collection of foreign plants is very extensive, and embraces many of the most beautiful productions of Europe, Asia, and Africa, together with an immense number of those most highly esteemed plants indigenous to North and South America.

In fruits it has always been more the object of the proprietors to select from the bulk of each kind those most worthy of cultivation, than to extend the list with reference more to number than to merit, as has been the case with others; therefore, in intrinsic worth, the selection of fruits they cultivate is not surpassed by any in the country. Extensive arrangements exist for procuring further valuable additions, and the proprietors annually receive vast accessions from abroad.

The gardens situated near Philadelphia, founded by the late venerable John Bartram, seem also to have escaped the recollection of Mr. Prince, when addressing you his communication. This establishment, undoubtedly the most ancient of any at present flourishing in the United States (having been commenced upwards of a hundred years ago), for so many years conducted by the venerable founder, subsequently by his son, author of *Travels in Florida*, and brother, and now by Robert Carr, Esq., is of very considerable extent. In American plants, if we include those which are herbaceous, it most indisputably takes the lead, more than six acres being devoted to their culture. Compared to this establishment, Mr. Prince's may be justly termed in infancy; for though he pompously declares its foundation to be "about the middle of the last century," of the truth of which, from its former insignificance, we are unable to acquaint ourselves, yet it is a fact most undeniable, that, fifteen years ago, it was in many respects third rate to others in this country. Still, in defiance of these facts, your own pages show how unblushingly he claims the superiority over all others.

I have now the original orders before me for nearly three hundred kinds of plants and seeds, ordered by Mr. Prince from one of the before-mentioned nurseries within the space of a few months, which, at the moment of ordering, were published in Mr. Prince's catalogue as in his possession. When it is considered that only single (specimen) plants were ordered, is it not fair to conclude that not one of them were in his collection?

From this single circumstance, you can judge of the character of the catalogues he annually distributes. His catalogues may be indeed voluminous, but not so his collection.

Other facts could be adduced to show the extreme hallucination of the man, but it would be dwelling too long on the follies of a fellow-labourer in the vineyard. For the exposition of error this will suffice, whilst the writer will be unmindful of any reply it may elicit, truth needing no defence. — *A Philadelphia Nurseryman. Philadelphia, Sept. 20. 1827.*

The writer of the above letter having given us a reference in London, we feel no hesitation in publishing his remarks, however much we may regret displeasing Mr. Prince, and risking the loss of his future good services. Our plan, in cases of this sort, is as follows: — If Mr. A. B., or any body else, make use of our pages as a medium to puff himself up, we shall let him do so; but then Mr. A. B. must consider, at the same time, that our pages are equally open to Mr. C. D., or any body else, to puff him down. We adopt this line of conduct on the general principle of liberty and impartiality, and because we know no more certain way of arriving at the truth in any subject than letting every one that has any thing to say about it, especially if they can say it well, push their arguments as far as they will go. The Editor of a Magazine is not to be considered as sitting in judgment on the opinions of his correspondents, but rather as presiding among them to preserve order, and give every one an opportunity of being fairly heard. As to the right and wrong on any subject, every one must judge for himself; it shall not be our blame if our readers will not exercise their thinking faculties. — *Cond.*

Hygeia, near Cincinnati, in the State of Ohio. — Mr. Bullock, founder and proprietor of the museum in Piccadilly, a man of an active, intelligent, and liberal mind, who has been engaged in various pursuits in both hemispheres, has lately made a journey in North America. Mr. Bullock was "so pleased with the country in the neighbourhood of Cincinnati, and convinced of its eligibility, in every respect, for the residence of persons of limited property, that he purchased an extensive estate with a handsome house there, within a mile of the city, to which he is about to retire with his family. The spot is so beautiful and salubrious, and affords such facilities for the erection of pleasurable dwellings, with gardens to them, that, on his arrival in England, with a survey of the estate, he engaged Mr. John B. Papworth, the architect, to lay out the most beautiful part of it as a town of retirement, to be called Hygeia. This will enable persons desirous of establishing themselves in this abundant and delightful country, to do so at a very moderate expense. Mr. Bullock returns to this estate immediately, and application may be made to Mr. Papworth, 10, Caroline Street, Bedford Square, where the plan and model of the spot may be seen." Persons in the country may procure further information by purchasing Mr. Bullock's *Sketch of a Journey through the Western States of North America*, 12mo, 5s., which contains a description of Cincinnati, and a large plan of Hygeia, very cleverly arranged by Mr. Papworth, at once a literary man, an architect, and a landscape-gardener. There could not be a better situation for an able-bodied horticulturist who can command 500*l.*, and who has, or is likely to have, fifteen or twenty healthy children.

ART. II. *Domestic Notices.*

ENGLAND.

IVY on Timber Trees. — I am far from thinking ivy a friendly companion to a flourishing tree, and it may have escaped the notice of those who have the management of trees, that cutting ivy down to the ground, in order to prevent it from injuring the tree, is not so good a way as cutting it off as high as a man can reach, and then pulling it down and leaving it prostrate on the ground. The reason is, the sap in the latter case is directed to its extremities, while, in the former, it would be employed in forming fresh and stronger shoots at the root of the tree. I allude to such trees as may have dry, large, straight boles, which are fine objects when not disfigured by ivy. I do not mean to say that ivy should be prevented from covering wretched-looking trees; it being in such cases a pleasing appendage. I do not consider ivy a parasitical plant, but it must hurt young growing timber, by compressing its trunk. The plantations I have the care of have been for some years left to themselves, and last winter I began dismantling them; but I think it more prudent to defer doing it extensively till spring, when all danger from the frost getting to the bole is over; for trees thickly covered with ivy, when too suddenly exposed in extreme frosts, are very often injured. — *Hortulanus.*

Preparing the Soil, previously to planting. — In a very intelligent article on the subject of planting, in the *Quarterly Review* for October, attributed to Sir Walter Scott, the following passage occurs: — “It may be some comfort to know, that as far as we have observed, the difference betwixt the growth of plantations, where the ground has been prepared, or otherwise, supposing the soil alike, and plants put in with equal care, seems to disappear within the first ten or twelve years. It is only in its earliest days that the plant enjoys the benefit of having its roots placed amongst earth which has been rendered loose and penetrable: at a certain period the fibres reach the subsoil, which the spade or plough has not disturbed, and thus the final growth of the tree which has enjoyed this advantage is often not greater than that of its neighbour, upon which no such indulgences were ever bestowed.”

The writer here only states his own experience, which is that, “as far as he has observed, the effect of preparing the ground disappears in ten or twelve years.” It is reasonable to suppose that much of the effect of preparing the surface soil will depend on the nature of the subsoil. Where the subsoil is good and deep, the advantages of preparing the surface will be immense, by giving the roots strength to penetrate into it so much sooner, and so much more effectually than would otherwise be the case. But even where the subsoil is bad, preparing the surface soil will enable the plants to make a more effectual use of it, and the sooner to supply, in the form of leaves and decayed spray, nourishment for themselves. Supposing both these advantages denied, there will remain a third, viz. that if in any given soil and situation a tree can only attain a certain size, whether the soil be prepared or unprepared, it is allowed, even by the writer in the *Review*, that the tree in the prepared soil will attain that size sooner. This alone will, we believe, in most cases be found a sufficient compensation for the expense of preparing the soil.

The Scotch Pine. — In the same *Review* the following passage occurs: — “Such Firs [Pines], therefore, as are ultimately designed to remain as principal trees, ought to be of this kind [the red pine], though it may probably cost the planter some trouble to procure the seed from the Highlands. The ordinary fir is an inferior variety, brought from Canada not more than half

a century ago. Being very prolific, the nursery-gardeners found it easy to raise it in immense quantities; and thus, though a mean-looking tree, and producing wood of little comparative value, it has superseded the natural plant of the country, and is called, *par excellence*, the Scotch Fir." (p. 580.)

Mr. David Don, the librarian of the Linnean Society, whose late father, the celebrated botanist of Forfar, paid great attention to the different varieties of Scotch Pine, and wrote on the subject in the *Transactions of the Highland Society of Scotland*, knows nothing of what is asserted by the reviewer. We have written to Sir Walter Scott, and to Mr. Reid of Aberdeen, who raises more Scotch pines from seed than any man in Scotland, but this must necessarily go to press before we can receive an answer from either of these gentlemen.

Law of Succession in Timber Trees.—That which I would observe to you from the wood at Wooton, is that where goodly oaks grew, and were cut down by my grandfather almost a hundred years since, is now altogether beech; and where my brother has extirpated the beech, there rises birch. Under the beech spring up innumerable hollies, which, growing thick and close together in one of the woods next the meadow, is a *viretum* all the year long, which is a very beautiful sight when the leaves of the taller trees are fallen. (*Letter from John Evelyn, Esq., to John Aubrey, Esq., in Aubrey's Surrey*, vol. i.)

The Cow Cabbage, Brassica oleracea var. arboræscens.—I enclose a few seeds of an arborescent cabbage, introduced from La Vendée by the celebrated Comte de Puyssaye, which promises to be an important acquisition to agriculture. I have seen it growing in the garden of my friend Admiral Brooming here to the height of 8 ft. In La Vendée, I am told, it attains an altitude of from 12 to 16, or even more feet. Being a native of a warmer climate, it should be planted in a warm and sheltered situation; sixty plants are said to afford sufficient provender for one cow for a year, and as the side shoots only are to be used, it lasts four years without fresh planting. A square of 60 ft. will contain 256 plants, 4 ft. apart, or sixteen more than four cows require for a year's provender, without the aid of other food. I shall be glad to hear the report of its success from those to whom you may communicate the seed.—*W. Hamilton. Oxford Place, Plymouth, Oct. 12.*

The number of seeds were about three dozen, six of which we have sent to John Thomas Brookes, Esq., of Flitwick House, near Ampthill (p. 246.); six to John Braddick, Esq., of Boughton Mount, near Maidstone; six to Mr. Thompson, of Welbeck gardens; six to Mr. Bisset, of Methven Castle gardens; six to Mr. Gorrie, of Annat gardens; and six to Mr. Barnet, of the Caledonian Horticultural Society's garden, Edinburgh; and we shall be glad to learn the success which these cultivators may have in raising plants, and their opinion as to their utility in agriculture.—*Cond.*

Large Cabbage.—Mr. Robert Lane, of Mottram St. Andrew, near Macclesfield, sowed an onion bed in March last: among the seed was a stray cabbage seed of the Scotch kind; without being hoed, or any care taken of it, it grew to an enormous size, and being cut in October, was found to be of the extraordinary weight of 25 lbs. (*Macclesfield Herald.*)

Immense Cabbage.—Mr. James Elliott, of Saltash, has cut from his garden a cabbage, which measured 5 ft. in circumference, and weighed 60 lbs. When growing, it occupied 15 ft. of ground. (*Plymouth Journal.*)

A Swedish Turnip was pulled in October last, by Mr. Whillington, of Send, in the county of Surrey, which measured more than one yard in circumference, and weighed 21 lbs. It was sown in July. The same gentleman had also, on the 26th of October, some strawberries in blossom in the open air, and some nearly ripe. (*London Packet.*)

Potatoes.—Several sent to the editor of the Scotsman, weighed from 10 to 12 lbs. each; one plant in the garden of Mr. T. Cartwright, of Clifton,

Worcestershire, produced ninety-four tubers, all sound, and of good size; one potato cut into twenty-one sets, produced 117 lbs., or upwards of two bushels, a bushel weighing half a cwt. (*Newsp.*)

Several large Gourds have been sent us, and notices of the weight of others: out of about twenty specimens, the largest we have seen or heard of is a Mammoth Gourd in the window of Messrs Noble and Goude, seeds-men, Fleet Street. It was raised in the garden of Henry Hoare, Esq., Mitcham Grove, Surrey, weighs 159 lbs., and measures 7 ft. 4 in. round. The second largest was grown in the garden of W. H. Bracebridge, Esq., at Wellesbourne, by Mr. G. Braithwaite, and weighed 145 lbs.; and the third in the garden of John Cresswell, Esq., Beacon Hill, Exmouth, Devonshire, and weighed 156 lbs. — *Cond.*

A Hydrangea is now growing in the garden at Amroth Castle in the county of Pembroke, belonging to David Dick, Esq., of Glenshill, which measures $55\frac{1}{2}$ feet in circumference, and displays 852 handsome flowers. (*Warwick Chronicle*, Sept.)

A Hydrangea in the pleasure-ground of the Earl of Ashburnham, Ashburnham Place, Sussex, last summer produced the extraordinary number of 1072 bunches of flowers. The plant is about 30 ft. in circumference, and about 5 ft. in height. — *B. Battle. Sussex, Dec. 1. 1827.*

A great quantity of Seeds from the Straits of Magellan have been lately received by Mr. Mackay of the Clapton nursery. From these he has already raised the celebrated Winter Bark, *Drimia Wintèri Dec.*, and *Wintèra aromática Willd.* Many of the plants raised are expected to prove hardy. (*Sweet's Flora Australasica.*)

The Four first-rate Polyanthuses cultivated in Lancashire are the Bang all Europe (21s.), Princess Royal (10s.), Earl of Ollerton (10s.), and Black Stranger (5s.). The two first were shown at Manchester last spring, and were considered to surpass every thing before exhibited. — *M. S. July, 1827.*

My Arracácha plants are doing well, and seem sufficiently hardy for our climate; two of them have flowered. Next spring I shall try them in the open ground, and hope in a couple of years to have roots enough to supply a few of those, whose agricultural enterprise and public spirit lead them to take an interest in the introduction of new and valuable articles for cultivation. — *William Hamilton. Oxford Place, Plymouth, Oct. 12.*

A botanical garden at Manchester is in contemplation by the Floral and Horticultural Society at that town. — *S. Manchester, Oct. 14.*

Myrrh. — A reward of 25*l.*, or a gold medal of equal value, has been offered by the Medico-Botanical Society, for an accurate description of the plant yielding the myrrh, which is supposed to be merely the produce of the *Amyris Kátaf.* (*Newsp.*)

The Powder of Horsechestnuts being mixed with a third of flour, is found to make better paste than that made from flour only. (*Mech. Mag.*, viii. p. 223.) We are glad to observe that these nuts can be applied to some useful purpose, and hope some country shoemaker or bookbinder will take the hint. — *Cond.*

Burnet, Potèrium sanguisorba, so much used by the French and Italians in their salads, is of so cheering and exhilarating a quality, that it has passed into a proverb in Italy, that no salad can be good without it. (*Evelyn.*)

Pine-apples at Shugborough. — Our pines here this season have been very fine. I have cut upwards of 300 within the last twelve months. The Anson, or Otaheite, is an admirable pine; I have cut a great quantity of them this season, weighing generally from $6\frac{1}{2}$ to $7\frac{1}{2}$ lbs. I did not fruit many of the New Providence this season, but what I did were uncommonly fine; in August I cut five of the following weights: one of $12\frac{1}{4}$ lbs., two of $11\frac{1}{4}$ lbs., one of $10\frac{1}{2}$ lbs., and one of $10\frac{1}{4}$ lbs.; the united weights of which were $55\frac{1}{2}$ lbs. avoirdupois. — *W. M. Murtrie. Shugborough, Nov. 23. 1827.*

The Grape Vines, for my new trellis, now well established, are the Black Raisin, West St. Peter's, Black Damascus, grafted on the St. Petersburg (as in a communication to the Gardener's Magazine by Mr. Oldaker), besides Black Muscadell, Syrian, and Black Hamburgh. I intend to procure the Tottenham Park new White Muscat Grape vine also, and am informed 58s. are now demanded for it. — C. Hale Jessop. Cheltenham, September, 1827.

Late-flowering Roses.—Specimens of the following sorts, finely in bloom, were sent us by Mr. Donald, of the Woking nursery, on the 22d of October:—Four Seasons, Monthly White Cluster, Monthly Red Cluster, Musk Cluster, New double Musk, Fraser's new Black China Musk, White Noisette, Blush China, Barclay's new Purple China, Scarlet China, Dwarf small-flowered China, Tea-scented China, and Yellow China.

Coe's Golden Drop Apple.—Sir, I beg to submit to you a few specimens of an apple raised from the seed of the Old Nonpareil, about twenty years since, by Mr. Coe, of Bury St. Edmund's, Suffolk, and called by him Coe's Golden Drop Apple. As a dessert apple for the months of February, March, and April, I think it is scarcely equalled; like most apples it has ripened rather prematurely both this season and last, but it always retains its poignancy and juice. Quite late in the spring it shrivels, and is then very delicious. The above-named gentleman is the same who raised that excellent fruit, Coe's Golden Drop Plum; he was a correspondent of ours, and sent cuttings here both of the apple and plum, as soon as their respective good qualities were ascertained. The plum is now well known, but the apple not so well, owing, I suppose, to the multiplicity of sorts of good apples dividing the palm of merit with the very good sorts. We have cultivated it rather extensively here, and now feel so convinced of its good qualities as regards bearing and keeping, that I am induced to ask your opinion of its merits in respect to flavour. The trees grow remarkably vigorous, handsome, and free from canker. I also send two or three of a pear which I found in some old gardens in the neighbourhood; it does well for deficient seasons, as it always bears, and is one of the hardiest trees possible. In average seasons it keeps till February. I should feel obliged by its name. I am, Sir, &c. — T. Rivers, jun. Sawbridgeworth, Hertfordshire, December 7. 1827.

The apples are handsome, and very well flavoured; the pears melting and juicy, and we should suppose allied to the Brown Beurrée.—*Cond.*

The best Standard Pear.—I have made my mind up as to the best autumn standard pear, which is the *Forme de Marie Louise*; I received it from M. van Mons. Lest it should be confounded with the *Marie Louise*, which is not so good a standard pear in our climate, I should mention that the wood of the *Forme de Marie Louise* is stronger than that of the *Marie Louise*; the tree, altogether, is more vigorous; very hardy; falls early into fruit; and is an exceeding great bearer. The fruit is larger, and of a more russety colour than that of the *Marie Louise*, and, in my opinion, of a much higher flavour; it is melting, and continues in eating till the first week of December, being fully six weeks from the time it first comes to table.

The best new wall pear that I have yet tasted for the present season is the *Bonne Malinoise*, or *Neilis d'Hiver*, for they are both the same; its season is just gone by.

The following pears I consider as unfit for our climate:—*Beurrée Drée*; *Decandolle*; *Colmar Van Mons*; and *Francis II.* Accept this information as an earnest of what I will do when I can. My dear Sir, yours, &c.—*John Braddick. Boughton Mount, December 6.*

Mulberries and Walnuts.—One of the characteristics of the present age is the quickness with which productions are obtained, for which formerly we were obliged to wait many years. A friend of mine, who has not planted

his garden more than two years, has already gathered mulberries and walnuts; the latter are from considerable trees, which had borne in the nursery before removal, and which were obtained from Harrison and Co. of Brompton; the former are from standard trees from Buchanan's nursery, Camberwell, which contains by far the largest plants of this tree in the trade; many of them have borne fruit for two or three years, and when removed to a private garden with care, will bear the first year. — *A. S. August 20.*

Removing large Fruit Trees. — Sir, As much diversity of opinion has for a great while prevailed respecting the removing of large fruit trees, at least after they have attained a considerable size, I herewith transmit you four fruit from a Gansell Bergamot Pear, as part of the produce of a tree that was removed by me about seven years since. It was at that time about fifteen years old, in a very unhealthy state, and growing as a standard tree. When I removed it, I divested it of all its branches, leaving it a bare pole. I then planted it against an east wall, with no preparation but that of puddling the soil well when planted. The third year after planting, it produced 40 fruit as fine as those now sent; the next year, 150; the next year 100, most of them larger than the present four; and this year it has produced 60 of a similar size, and is still in a thriving condition. I may, perhaps, at a future time, trouble you with some remarks on the pruning of pear trees. I am, Sir, &c. — *Wm. Moore. Green-Street House, East Ham, Oct. 20.*

Chloride of Lime, it is said, will destroy insects on trees, and prevent effluvia from arising from vegetables or other matter in a state of decomposition. It was used in France to preserve the bodies of those unfortunate persons who had destroyed themselves, until owned by their friends. A body, if washed with the preparation, will keep for weeks without alteration or offensive odour. Timber washed with it will be preserved from the effects of damp and confined air, and it would also prevent the spread of dry-rot, and destroy insects on plants. (*Newsp.*)

SCOTLAND.

Fall of Leaves. — An article on this subject, translated from a paper by Professor Vaucher in the *Memoirs of the Natural History Society* at Geneva, is given in Brewster's *Journal* for October 1826, which appears to us to account for the phenomena of the fall of the leaf in a more satisfactory manner than any preceding theory. According to Professor Vaucher, every leaf consists of a distinct system of fibres, which have only a temporary continuity and union with the shoot, kept up by a kind of adhesive substance, which, when the purposes of the leaf to the parent plant are served, is dried up or dissolved. "This adhesive substance is probably formed by some portion of the parenchyma interposed between the two systems of fibres. While this parenchyma is under the influence of the vegetable action, the adhesion is maintained; when this action ceases, the union is dissolved, and the leaf falls." The reasonableness and truth of this theory, as far as respects dicotyledonous plants, becomes more obvious by reflecting on the difference between the decay of leaves and the decay of tendrils. The leaves of palms, grasses, bulbs, and other Monocotyledonæ, in a strict sense, cannot be said ever to drop from the plants. Dr. Brewster judiciously observes, that M. Vaucher is the first who has directed botanists to the organic structure at the base of the petiole; and he adds, that a similar arrangement probably prevails in the other parts of plants which successively drop off, and the connection of whose vessels with those of the stem, though necessarily intimate, is merely temporary. A new field is thus opened for botanical research.

Grapes ripened in the open Air. — There is at present to be seen in a small garden adjoining the property of George Fenton, Esq., sheriff-sub-

stitute, Elgin, at present possessed by Alexander Denoon, weaver, a vine containing at least one hundred clusters of grapes, some of which have already ripened, and both bunches and berries are, generally, of a good size. This vine grows against the end of a house fronting the south; and this is the second crop that has come to perfection on it in the open air. Last season there were between thirty and forty clusters which came to full maturity, equally good with any that come from England. There is also a fig tree in the same garden, which has, during last season and the present, carried figs fully ripe. (*Scotsman*, Oct.)

Two Crops of Potatoes in one Season. — We were shown, the other day, a specimen of a second crop of potatoes raised by Mr. Bell, farmer, Heath Hall, which were certainly very fair in point of size, and are said to be superior in point of quality. The first crop was planted on the 12th of April, and finally raised on the 12th of July, sets of an earlier variety having been used than what is customary in extensive fields. The produce was abundant, and, by competing with the early crops grown in gardens, the proprietor realised more by his potatoes than if he had allowed them longer time to grow. The moment the ground was cleared, the plough was put in motion, and the whole dunged and planted a second time. This occurred on the 14th July, and on the 23d current a second crop was raised, larger and in better condition than the first. The land, of course, from the dung used, is still in such heart that an excellent crop of wheat may be expected to follow. The dropping nature of the season has certainly favoured Mr. Bell's experiment; but what he has done others may do, and he deserves credit for the example he has set in a very useful kind of husbandry. (*Dunfries Courier*, October.)

Large Potatoes. — Mr. J. Thomson has politely sent to our office two potatoes of the common red variety, grown in his grounds at Roseburn, the one weighing 2 lbs., and the other, which he takes for the average of the plot, weighing 26 oz. (*Scotsman*, Oct. 31.)

An undescribed Shrub, which supplies wholesome and limpid Water, has been discovered in our new Indian countries, from whose stem, when divided, there issues a copious vegetable spring of limpid and wholesome water. (*Brewster's Journal*, Oct. 1827.)

IRELAND.

Small Farms are rapidly melting away on the Marquess of Lansdowne's property in Queen's county. The farm houses are constructed upon an excellent plan, such as promises comfort, and gives temptation to cleanliness, a desideratum in the rural life of Ireland; and munificent allowances are granted by this nobleman out of the landlord's rent, towards insuring a sufficient incitement to the tenant's interest, and an inducement to seek after the enjoyment of comfort. (*Dublin Correspondent*.)

A mushroom of the remarkable size of 11 in. in diameter, and 6 in. in height, was found on a gentleman's estate in the county of Cork; it weighed 6 oz. We understand it is to be preserved and sent to the Museum of Edinburgh. (*Dundee Cour.*, Aug. 3.)

Thirty Thousand Mulberry Trees are now growing on the estate of Lord Kingston, in the county of Cork, who has already sent a quantity of raw silk to the market. (*Newspaper*.)

A Selection of Names of hardy Fruit Trees is just published, in one sheet or table, by Mr. Edward Lindsay, nurseryman, Belfast. It is accompanied by an engraving, representing the mode of training dwarfs and standards. Gentlemen in Ireland might write for it to be sent by post. When a second edition is called for, we would recommend Mr. Lindsay to compare the spelling of the names with that of the Horticultural Society's catalogue.

ART. III. Horticultural Society and Garden.

Oct. 2. — Exhibited. Double Dahlias. Late Ranunculuses, from Mr. Henry Groom, F.H.S., of Walworth. White French Cucumber and Patisson Gourds. Red Celery and Apples unnamed, from Josias Baker, Esq. Primley Nuts and Paignton Marigold Apples. An orange resembling the Orange de Grasse of Risso, from the Hon. Mrs. Dymoke. *Cratægus odoratissima*, a collection of Apples, and true old Autumn Bergamotte and Carter's Beurrée Pears, from Mr. Thomas Gibbs, F.H.S. Black Hamburg Grapes. Early Spanish and Scarlet-fleshed Melons, grown in the open air, by Mr. John Wells, of Airsford Hill, Sussex. Peaches from a standard tree, from Mr. C. Hale Jessop, nurseryman, at Cheltenham. A collection of Apples and Pears from Mr. Hugh Ronalds, F.H.S. Five sorts of Apples and ten sorts of Pears, from Mr. James Smith, F.H.S., of Hopetoun House. A branch of a Swan's Egg Pear. Seventeen sorts of Pears and thirty-nine sorts of Apples, from Mr. John George Fuller, F.H.S. Fifteen sorts of Apples. Seedling Apples, from Mr. George Forder, of Winchester. Fifteen sorts of Apples, from Mr. Joseph Kirke, F.H.S.

Also, from the Garden of the Society. Fifteen sorts of Apples, Catherine and Sanguinole Peaches, Blacksmith's White Cluster Grape, Flowers of Double Dahlias, and *Vaccinium padifolium caucæum*.

Oct. 16. — Exhibited. Flowers of the Wheat-ear Carnation, Royal Muscadine Grapes, specimens of the Verlainé Pear, and seventeen sorts of Apples, from Mr. Joseph Kirke, F.H.S. Flowers of *Heliánthus tomentosus*, *Stèvia* sp.? from Mexico, and *Solànum angulàtum*; also, specimens of Apples and Pears, from Robert Barclay, Esq. F.H.S. Late Ranunculuses, from Mr. Henry Groom, F.H.S. Water Melons, from W. Pitt, Esq., of Kingston, near Dorchester, Dorsetshire. White Nice Grapes. Verdelho and Malvoisie Grapes. Doyenné Dorée Pear, and Kirke's Scarlet admirable Apple. Two Seedling Apples, from Mr. Thomas Moffatt, F.H.S. Apples from John Moxon, Esq. F.H.S., called the Newtown Pippin, an indifferent soft apple, and not the Newtown. Thirty-three sorts of apples from Mr. Thomas Gibbs, F.H.S. Ashmead's Kernel Apple. Burge's George IV. Apple.

Also, from the Garden of the Society. Flowers of Double Dahlias, five sorts of Tomatos, nine sorts of Celery, Pitmaston White Cluster Grape, Duchesse d'Angoulême and Gilgil Pear, and nine sorts of Apples.

Nov. 6. — Read. Description of a new mode of constructing Hot-houses, by Mr. W. Deykes, of Knightsbridge. On the cultivation of the Horseradish, as practised in Denmark and Germany, in a letter to the Secretary, by Mr. Jens Peter Petersen.

Exhibited. A candle made of the wax of *Myrica cerifera*, and flax from the fibre of a species of Aloe, from John Campbell Lees, Esq. C.M.H.S. Potiron Jaune Gourd, weighing 136 lbs., from John Creswell, Esq. F.H.S. Solid Red Celery. Three sorts of Potatoes, three sorts of Pears, and thirty-six sorts of Apples, from Mr. John Haythorn, C.M.H.S. A new Seedling Pear from Nunnholm Garden, and eight sorts of Apples from William Grierson, Esq. Secretary to the Dumfries and Galloway Horticultural Society. Uvedale's St. Germain Pear, weighing 2 lbs., from Nathaniel Gosling, Esq. F.H.S. Eighty-six sorts of Apples from Mr. Thomas Gibbs, F.H.S. Two varieties of Seedling Apples, from Miss Nottidge, of Wandsworth. Specimens of the Alfreton Apple.

Also, from the Garden of the Society. Flowers of twenty-two sorts of Chrysanthemums, and several sorts of Double Dahlias; two sorts of Caroons, viz. the Red and Spanish; Chinese Quince; Snow Pear of China; four sorts of Pears, and four sorts of Apples.

Nov. 20. — *Read.* Remarks on the proper Elevation of Forcing-houses, by Frederick Bourne, Esq. F.H.S.

Exhibited. Fine curled Parsley, from Mr. Samuel Knevet, F.H.S. Chrysanthemums, from the garden of Sir Thomas Dyke Acland, Bart. F.H.S., sent by Mr. William Craggs, the gardener. Double Dahlias, and a collection of Apples from Mr. James Young, F.H.S. A hybrid Romana Melon, and five sorts of Seedling Apples, from Mr. Charles Harrison, F.H.S. Malvoisie and Verdelho Grapes, from Daniel Edward Stephens, Esq. F.H.S. Twenty-one sorts of Pears, and eight sorts of Apples, from Monsieur Louis Claude Noisette, C.M.H.S. Swan's Egg Pears. Four sorts of Apples, from Sir George Stewart Mackenzie, Bart. F.H.S. Ashmead's Kernel Apple. Kentish Giant Apple. Twenty sorts of Apples, from the garden of the Earl of Powis, F.H.S.; and Apples from Mr. Alexander Duncan, gardener to the Marchioness of Londonderry.

Also, from the Garden of the Society. Flowers of forty-five sorts of Chrysanthemums.

The Chiswick Fête, in Reply to Philo-Olitorum. (p. 231.)—Sir, As you have repeatedly asserted that your pages are open to every one choosing to express his opinion on the subjects connected with your valuable publication, I trust I do not draw too liberally upon your indulgence if I presume to expect you will give insertion to the following sentiments, called forth by what I consider the illiberal, and, certainly, very violent, letter of your correspondent, Philo-Olitorum.

As I am aware you will not allow your respectable work to become the medium of senseless, unserviceable controversy, so I am most unwilling to be thought to encourage such a prostitution of it, yet there is that in the spirit of your correspondent's epistle which I think ought not to have a place in your columns unanswered; and, as you have assimilated yourself to the character of a jolly innkeeper, bound to serve all customers, provided their outward bearing will stand scrutiny, I cannot help thinking that, in your character of mine host, you have come in for a greater share of abuse (as sometimes happens to a *good-natured* landlord when he chances to receive a *choleric* guest) than you calculated upon or deserved.

I do not attempt to criticise Philo-Olitorum by piece-meal, his letter being too long for my leisure or your patience; I shall only begin where he is so hard upon *you*; so, in courtesy, you are bound to support me, which, by the way, I beg and pray for.

After being very, very severe on you for allowing that the Horticultural Fête, if frequently repeated in the course of the season, would be reprehensible, but that, once a year, it was not only harmless, but by calling in the influence of the fashionable world, as an auxiliary support to such an institution, it might be useful, he charges you with such impetuosity, such a torrent of words, "huddling sentence upon sentence with such impassable conveyance upon you" as Shakspeare has it, that some of your country readers, your lovers, and admirers, were really fearful you would sink under so furious an attack; and their commiseration was excited accordingly. There were others who thought they saw farther into the reason of your silence, and that you were only, like a *canny Scotchman*, *joukin' to let the jaw gae by*. After bearing you down thus arbitrarily, he takes a position (one would imagine, he thought he had you prostrate, and his foot upon your breast), and triumphantly exclaims, show me when science ever flourished under the auspices of fashion? Now, really, I know no way so good for getting you on your feet again, as by soberly asking your violent antagonist, when did science ever flourish independent of its influence? And now, having restored you to the position proper to a biped (from which it is a shame you should have been reduced, even in idea), I hope I will not thereby come in for the *reddin' stroke*, which is always, and

often with justice, deprecated as the worst blow in the fight, but I will risk all consequences, and, as I have adopted your quarrel, I will continue it on my own account, and, perhaps, in my zeal (for there is no saying how far one may go, when the blood's up) carry it farther than you will thank me for. But as I have now brought serious business upon myself, I must meet it with becoming gravity if I can.

Philo-Olitorum considers that the Horticultural Society ought to be entirely independent of the aid and influence of the fashionable world; that it cannot exist under its auspices. Now I cannot, for my life, conceive what sort of thing or monster he has conjured up in his imagination, under the idea of the fashionable world, that has such a withering influence in its aspect, that science cannot exist under it. Is it not the generally received opinion, that the fashionable world is composed of the rank, wealth, and talent of the country? If that be allowed, I would like to know what art or science can flourish without its immediate patronage. But I insist, particularly, that its countenance is so essential to the *flourishing* of horticulture, that it is only second to the sun in its effects upon it. Without its powerful cooperation, we gardeners would only be an undistinguished set of ditchers and delvers, even the very grubs would despise us, and eat their meal in comfort and security! When Philo argues that because the Society is supported by funds (voluntary subscriptions, be it remembered) amply adequate for all its purposes, it has all it wants, he puts me in mind of the poet's celebrated lines on the ascent of ambition, so well known. "Lowliness is young Ambition's ladder," &c. &c.; but before the Horticultural Society can maintain its footing upon the "utmost round," — "look in the clouds," &c. as he would have it, some rich Philo-Olitorum must "die and endow it." In short, my opinion entirely coincides with Mr. Loudon's, that opening the Society's garden once a year for the admission of the fashionable world *cannot* be detrimental (far less derogatory) to the interest of the Society, or horticulture in general. Horticulture is like a fair lady, but as I am in some dread of Philo's sort of negative admission of gardeners having a right to be gallant *sometimes*, and as I would not wish to offend even his sense of propriety by the most *distant* allusion, I will say, like Virtue, the more she is seen and known, the better her fine qualities are appreciated, and, of consequence, the more generally beloved.

I would add no more, as I am afraid of being accused of trifling with your valuable time, but candour obliges one to take notice of the sweeping condemnation of the conduct and management of the Council of the Horticultural Society your correspondent indulges in. Surely it cannot be merited altogether. It has a difficult business in hand, and although it may have committed some errors, yet I really have my doubts whether the matter would be mended if Philo-Olitorum were made President, and had the appointing of the Council to boot. The Council is chosen from amongst what are considered the most enlightened of the members; from the very nature of the business, being purely or in a great degree experimental, it must be allowed a discretionary power. Now, in horticulture, there is such variety of methods, so much scope for taste, and such a conflict of opinions regarding what is best for every thing, or any thing, that it is almost impossible that any Council, however chosen, can give universal satisfaction. Nor is it to be expected that it should give explanations for every thing undertaken, which in many cases, perhaps, can only be justified by the results, to every angry expostulator who chooses (on the strength of being a Fellow, I suppose) to demand them. Such a compliance would only tend to embarrassment. As it is to be presumed the Council will always be composed of men the likeliest to forward the objects of the Society, I think experience alone will enable it to compass its great and complicated

views to the satisfaction of the candid. It would be endless and useless to undertake to satisfy men whose gall appears to be ever on the overflow. With one more apology for this too long letter, I remain, Sir, your most obedient servant, — *Olior.* November 25. 1827.

ART. IV. *Provincial Horticultural Societies.*

Ross Horticultural Society. — The fifteenth show of this institution took place on the 10th of October, being the last for this year. At twelve o'clock the subscribers held their Annual Meeting at the Swan Hotel, Whaley Armitage, Esq. in the chair, (in the absence of the Society's chairman, Sir H. Hoskyns, Bart.,) when the present committee, treasurer, and secretary were reelected for the ensuing year. At two o'clock the show room was thrown open, and to its close was filled by a most fashionable and numerous attendance of subscribers and their friends, notwithstanding the very unfavourable state of the weather. The officers fully expected an unusual display of Pomona's treasures, and suitable arrangements were made the previous day for the supply, but at an early hour the arrivals filled the allotted spaces, and it became necessary to have three large tables, these soon became so filled, that a row of fruit plates was placed on benches the length of the room. The number of plates of fruit amounted to nearly 600. Our worthy county member, Sir J. G. Cottrell, Bart., was the largest contributor: Sir John produced 55 specimens; J. Collins, Esq. 47; John Cooke, Esq. 38; many other subscribers furnished 20 specimens, and a great many about a dozen. The whole display of fruits afforded a rich and interesting treat, and every one admitted that it surpassed their most sanguine expectations. The stage dedicated to Flora ranged the top of the room, crowning Pomona's rich banquet. The upper part was filled with green-house plants, and underneath 380 of the Society's bottles sparkled with double dahlias of surpassing richness in colouring and beauty. On this stage were 36 seedling double flowers, and to some of them prizes were most deservedly awarded. Most of the bottles contained two and three flowers of each variety, which produced the best effect. The out-door grapes were very fine, and above twenty plates were exhibited for prizes. The evening's sale of fruits, not removed by exhibitors, produced the extraordinary sum of 8*l.* 3*s.* 11*d.* The total number of specimens ticketed and entered into the Society's books amounted to 998. Numerous prizes were awarded. (*Hereford Journal*, October 17.)

The Horticultural Garden at Warwick is about two acres in extent, and is the property of — Brookhouse, Esq. Until within these two years he had it in his own possession as a private kitchen-garden. He then let it to Mr. Barnes, who had left his situation as serving gardener. Mr. Barnes has since styled it the Horticultural Garden. He has two fruiting pineries and pits, and very pretty peach-house. — *G. B. Wellesburne*, Oct. 20.

The British Florist's Gazette and British Fruiter. — Sir, I am a constant reader of your interesting repository, and I am glad to find it has such extensive circulation. But I am like some others, I want it more in my *own way*. I am a florist, and those articles which relate to the culture of flowers are the most interesting to me. A similar hint has been given you by one of your Suffolk friends, who requested you to publish the accounts of fruit and flower shows. You replied, let the Societies be at the expense of printing, and the accounts shall be annexed to the Gardener's Magazine Now, Sir, this does not appear to us an eligible plan. But we propose that you find paper and printing, and we will find materials and money.

We have, for some years past, had a *Florist's Gazette*, published at Manchester. But, being published in the country, we found it difficult to obtain it. We want one published in town, entitled *The British Florist's Gazette*. Let one portion of it be allotted to *new flowers* going out, and other interesting particulars. If you were to issue proposals for such a work in your Magazine, and request the Florists' Societies to contribute to it, *post paid*, you would have plenty of materials, which you might easily arrange for the press. Let it be published on the 1st of September, or 1st of October; and, we think, where you sell one Gardener's Magazine, you would sell *four British Florist's Gazettes*. But we are aware this would satisfy only one half of the non-contents; to please the other half you must publish a similar work, entitled *The British Fruiterery*. We have no doubt of their having a very extensive circulation. Your country friends will feel obliged if you will give the subject your serious consideration.—*Floristicus. November 29.*

We have no objection whatever to publish a *British Florist's Gazette*, and *The British Fruiterery*, once a year; say on the 1st of October, though we very much doubt their paying for paper and print. Why are those which were published at Manchester discontinued? However, as so much has been said to us on this subject, we hereby invite all Flower and Fruit Societies to send us, *post paid*, plainly written and correctly spelt accounts of their transactions, and what they would wish published, together with a notice of the number of copies they will take of one or both works, and we shall at any rate run the risk of a commencement on the 1st of October next.—*Cond.*

Distribution of Premiums.—Sir, Permit me to draw your attention to some points in the practice of Provincial Horticultural Societies, which I, in common with a number of my brethren who are practical men, think require reformation.

Much has been said respecting the laborious and responsible situation of gardeners, compared with that of some other servants in a gentleman's family; but what adds greatly to the pain, and, I may say, often constitutes the degradation, of the gardener, is the practice of many of their employers, who are members of these societies, who receive the prizes that are in reality gained by their gardeners. You have very truly stated (*Gard. Mag.*, vol. ii. p. 238.) that there is not a more effectual way than this for a gentleman to keep down the spirit of his gardener, and I am now suffering this degradation. The intention of these societies is good, but their management bad. Are they not supported by gardeners to a considerable extent, and does not the practical man pay subscription as well as his master? More than this, I can aver that nine times out of ten he buys, at his own expense, the plant that produces the flower or fruit for which his master claims the prize. Such treatment, Sir, has been my lot; and I feel that it is not to be endured, that those who have had the care, anxiety, and toil have not the reward also. I admit it may be argued that every servant's exertions are the property of his master; but permit me to ask such of your readers as argue in that strain, whether they can reconcile to their own minds, the taking of a reward for an action which they never performed, or for a degree or kind of merit which they do not possess? I am sure there are many of my brother gardeners who feel on this subject in the same way as your obedient servant.—*A Complaining Gardener. August 8.*

We can very well sympathise with this correspondent, who, if he were as good a writer as he is a gardener, would probably render some of the sort of masters to which he alludes a little more attentive to the feelings of those who are under them. We have already expressed our ideas on the subject. (*Gard. Mag.*, vol. ii. p. 237.)

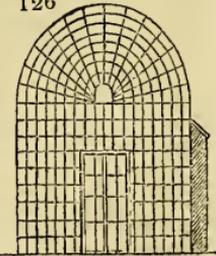
ART. V. *Covent Garden Market.*

THE supply of culinary vegetables and hardy fruits continues to be more than usually abundant. Excellent white broccoli brings from 6*d.* to 3*s.* 6*d.* per bunch. Onions from 1*s.* 6*d.* to 2*s.* per bushel. The very best onions that can be purchased do not bring more than 2*s.* 6*d.* per bushel, while the best kidney potatoes bring 4*s.*; and the best Scotch, sent up from Leith, 3*s.* per bushel. There have been large importations of Newtown Pippins, some in excellent condition, and some nearly rotten in the barrels; the price of the best 12*s.* per bushel. Best Nonpareils and Golden Pippins 15*s.* per bushel. Good Reinettes, and other kitchen apples, 5*s.* 6*d.* to 7*s.* per bushel. Chaumontelle pears, 9*s.* to 18*s.* per bushel. Colmars, and other choice sorts, 10*s.* to 20*s.* per half sieve. Quinces sell at from 1*s.* 6*d.* to 2*s.* per bushel. Medlars have been very scarce this season. Dutch grapes, of the Frankenthal, or Hamburg variety, have been sent over in such quantities every week during the autumn, as to have materially lowered the profit of the market-gardeners. There are still some in the market of very good quality, at 5*s.* per lb. Pine-apples have been very abundant and reasonable, and there are now more than can be sold of inferior and small pines, which are offered at 5*s.* per lb. — *J. G. December 8.*

ART. VI. *Calls at Suburban Gardens.*

THE Villa of Joseph Wilson, Esq., on Clapham Common. — The house is large and commodious; the grounds consist of a few acres chiefly in grass, but with a small kitchen-garden and shrubbery, the latter more selectly planted than usual; and chiefly, as we were informed, by Messrs. Ball and Brookes, of Ball's Pond nursery. Though only finished about four years, the evergreen and American shrubs have thriven astonishingly. *Ligustrum lucidum* deserves to be mentioned as an evergreen shrub formerly kept in the green-house, but now found to be as hardy as *arbutus* or *laurustinus*. It has fine, broad, ovate, pointed, shining, deep green leaves, and large racemes of white flowers, which, as the trees grow older, will no doubt be succeeded by berries. There is a good collection of shrubs in the American ground; abundance of *Magnolia grandiflora*, in its different varieties; several of *M. conspicua* and *tripétala*, and handsome plants of *Thomsoniana* and *glauca*: but the grand feature of this place is a conservatory lately erected. It is a parallelogram about 50 ft. long, 20 ft. wide, and 20 ft. high. There is upright glass to the height of 12 ft. on three sides; the remainder is like a wall. The roof is a vault composed of two segments, so as to raise it rather higher than a semicircle, in order to throw off

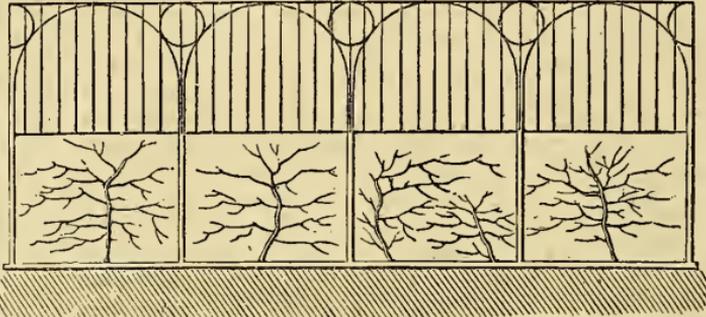
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the water from the centre: but, at the same time, these curves are so united, as to form at a distance what appears to a general observer but a semicircle; and, to a more correct eye, a section similar to that of the broad end of an egg, or what botanists would call ovate. (*fig.* 126.) The floor is paved, and the whole is heated by steam-pipes concealed beneath the pavement. The only thing we could not approve of in the architecture of this house, was a row of props (*fig.* 127.) to the arched roof, running along its centre.

Any support given to an arch but the abutments is at least superfluous. There could be no occasion for any such support here, in point of strength or stability; and the effect in the interior of the house is as bad as can well be conceived.

Were these props, and a low stage which is connected with them, entirely swept away, this house would be greatly improved.



There are a very neat plant stove of the usual construction, most substantially and elegantly executed, and furnished with a select collection of plants, a small green-house adjoining, and a complete little work-shed; the whole, including the furnaces, flues, and steam apparatus, very neatly executed, and kept in the highest order by Mr. Gunner the gardener.

The Villa of John Allnut, Esq., is situated on the opposite side of the common. It struck us as a confused ill-kept place; but the gardener, Mr. Curtis, is noted for growing camellias. We saw some very good pine plants, and a number of large camellias, very handsomely grown, and in fine foliage. They were placed in the open air, completely shaded by high trees; and the soil they were in was chiefly yellow loam, with a little dung and peat. They are preserved through the winter in vineries.

A small Villa near Tooting.— We called here and found that the gardens and grounds had been lately renovated, and a large green-house erected. We could not approve of the taste displayed, but highly applauded the substantial and neat manner in which every thing was executed, apparently without limitation of expense. A good deal of stained glass was employed in both the front and ends of the green-house, which, in our opinion, is quite unsuitable to that description of building. A gravel walk round five or six acres of grass was conducted in that formal serpentine manner that is seldom to be seen, except in town gardens of the lowest class. The clumps and patches which accompanied it on the open side, were not harmonised with it, or so formed as to give an apparent reason for the different turns of the walk; but the plants in these dug patches were of select sorts, and planted in peat earth. The whole was in the highest keeping; and the worms had recently been destroyed by thousands, under the direction of Mr. M'Dougal.

Nothing could be more complete than the stable-yard at this place. The stable and coach-house were kept as clean as parlours. As a finish to the litter of each particular horse, it was surrounded by a border of plaited straw, a display of neatness on the part of the grooms not very frequently to be met with. We were much gratified by this, and similar traits of neatness, and by the kindness and condescension of the master in showing us every thing himself. The interior of the house was suitable to the exterior.

Messrs. Rollison's Nursery at Tooting is celebrated for the culture of heaths; the plants were just placed in the houses, and looked remarkably green and healthy, and between fifty and sixty sorts were in flower. They are small, and in small pots, and placed on stages very near the glass, where they enjoy abundance of light and air. The nursery here is not extensive,

but is kept in very neat order : there is an abundant supply of water, which rises some feet above the surface, and which was obtained by boring to the chalky stratum. The ground for raising fruit trees and shrubs being at a distance, we did not go to see it.

Cobbett's Nursery, Kensington, Feb. 7.—Some of our readers having requested us to give an account of this garden, we called there with a gentleman who was about to purchase some trees. We found the veteran writer sitting in his garden-house, by a wood fire made in one of his cast-iron American stoves, a table beside him covered with newspapers, and a few books behind on a shelf. The garden contains about four acres of deep sandy loam, admirably adapted for raising seedling trees, and almost the whole of it is so occupied. The sorts are as follow; the particulars respecting them are taken from the *Register* for December 1825:—

Locust, Robinia Pseud-Acacia. Recommended to be grown for pins for ship-building, and for hop-poles; also for fuel and hedges. The duration of locust is said to surpass that of all other timber; it grows faster than the ash, and while a pole of the latter tree lasts only three years, a locust pole will last twenty or thirty. At Earl's Court, near Kensington, a plantation was made, fifteen years ago, of locusts, Scotch pines, sycamores, limes, Spanish chestnuts, beeches, ashes, and oaks, and measured in October last. It was found that the locust grew faster than any other tree, in the proportion of 27 to 22; and faster than the average of these trees in the proportion of 27 to 18. It is acknowledged, however, that the locust is not a tree to thrive to a great age; and two old specimens in Mr. Cobbett's garden, in the most favourable soil and situation, are striking proofs that it is not a tree to produce a great bulk of timber.

White Oak, Quercus álba. Recommended as producing tough, durable, and light timber, fit for implements of husbandry, and coach-making. In Loddiges' collection, this oak appears a more tender tree than the common species.—*Black Oak, Quercus nígra, or tinctòria.* Valuable on account of its bark, which makes the fine yellow dye called quercitron; grows fast, and on poor soil.—*Black Walnut, Jùglans nígra.* Used as knees in ship-building in America.—*Hickory Nut, Jùglans squamòsa.* Wood hard and tough, but not durable.—*Persimon, Diospýros virginiana.* Wood so excellent for poles and shafts, that Michaux calls it the American lance-wood.—*White Ash, Fráxinus americana.* Grows faster, and is better timber than the common ash. The fastness of its growth will be doubted by most British gardeners who have had it in their shrubberies.—*Tulip Tree, Liriodéndron tulipífera.* A tree of very quick growth, and the timber is as useful as the deal, and more ornamental.

Occidental Plane, Plátanus occidentális. "This is to a certainty the largest tree in the world, and the wood far from being of no value." "There ought to be a forest, or, at least, a thousand or two of acres of these trees in England, to provide blocks for the navy. How is it that this tree, and also the tulip tree, both of which push up so in America, are seldom worth looking at here? Because there they come from seed, and here they come from layers. That is the cause, and the sole cause. A layer is not a tree, but the branch of a tree; and it always will be a branch, and grow like a branch, with a broad head, and a constant inclination to make big limbs. It will be crooked, and every way misshapen. It never will get to the height or the size of the seedling tree; and will not, at the end of ten years from the start, be a quarter part of the size of the seedling."

Honey Locust, Gledítschia triacánthos. Not so fast-growing as the other locust, but its timber is "as good in nature." "With a little pains the plants would make the most beautiful hedge in the world, armed with thorns that even a fox-hunter would not dare to face."

Catálpa syringifolia, grows to the height of 40 feet in America; but not above seven or eight in England, because they are "raised from layers and not from seed." Next to the *Magnolia grandiflora*, it is "unquestionably the finest and most magnificent flowering tree that we know any thing about." It will grow almost in any soil, and "produce you a gate-post to last two or three lifetimes." The wood is of a deep yellow, and, "probably, as durable as that of the locust."

Hibiscus Althæa-frutex grows 20 feet high in America, "where such a thing as a layer was never heard of;" here it "makes no figure," and "seldom blows." (!) "A hedge of these althæas is one of the most beautiful things I ever saw in my life." They grow fast, and will make a hedge in a short time.

Besides the above forest trees and shrubs, Mr. Cobbett propagates 38 sorts of American apples, which he severally describes and recommends. The Newtown Pippin, Rhode Island Greening, and Fall Pippin, he says, are decidedly the best in point of flavour and keeping; while the Mammoth is the largest of all the apples in America, weighs from one to two pounds, and is chiefly used for pies and sauce. There are three sizes of these trees, which are sold at 1s. 5d., 2s., and 5s. a tree; those only one year grafted are 9d. each. Keens' Seedling Strawberry is the only remaining article sold by Mr. Cobbett, for which he charges 2s. 6d. per hundred.

The prices of these trees are considerably higher than those of the nurserymen. The insinuation that althæas, catalpas, and tulip trees are generally raised by layers, &c., is incorrect.

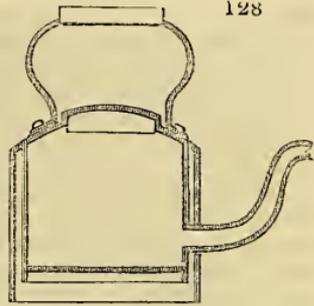
The *Plátanus* is generally raised by layers, but not always; there are trees in England from sixty to eighty feet high; for instance, at Syon House, and in Chelsea garden. Mr. Cobbett has adopted an opinion, which Mr. Knight has been principally instrumental in propagating; viz. that, in general, layers and cuttings will not produce plants equally strong with those raised from seeds. With every respect for the opinion of so eminent a physiologist as Mr. Knight, we feel obliged to differ from him on this subject. We cannot here go into details, but we may shortly state that we believe as perfect and durable a plant may be obtained from a bud as from a seed. That plants equal to seedlings are not always so obtained is owing to the want of proper treatment. Strike a cutting of an oak, another of a larch, and raise an oak and a larch from seed, under the same circumstances of soil and situation; after seven years the seedlings will be handsome young trees, and the cuttings, perhaps, dwarf stunted bushes; but cut the oak over by the surface, and bend down to the ground all the branches of the larch, and you will find strong shoots proceed from the root of both; leave only one shoot to each stool or root, and you will soon have as handsome, vigorous, and durable trees, as if they had been raised from seed. We do not deny, however, that the same object is attained sooner by raising from seed. Such is our opinion, founded on observation and analogy; but we should like to know the ideas of others of more experience than ourselves on the subject; for example, of Mr. Gorrie, of Messrs. Bishop, Beattie, and Mitchell (p. 306), Mr. Sinclair, "A Denbighshire Gardener," and especially Mr. R. of A., (p. 351.) whom we suspect to be of Mr. Cobbett's opinion.

Tree Seeds and Grafts. Mr. Cobbett imports these from America in casks, packed with sand; the locust and catalpa seeds in their pods. We measured a pod of the latter near 18 inches long, containing perfectly fresh seeds.

Such is the nursery of Mr. Cobbett, and the articles grown in it; and while all the same sorts of trees, with the exception of a few varieties of the apples, are growing old in the nurseries, from being but little asked for, Mr. Cobbett cannot raise a sufficiency of seedlings to supply the demand.

ART. VII. *Hints for Experiments.*

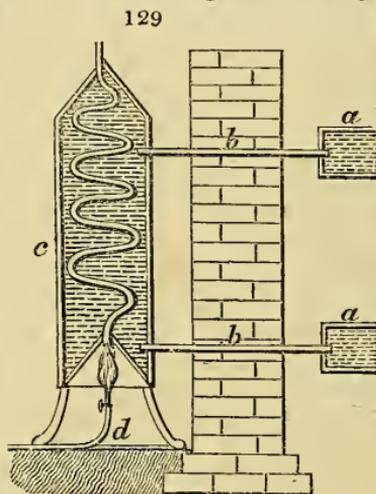
HEATING Pits and Frames by Gordon's Kettle.—In Gordon's kettle (*fig. 128.*), which is heated by a lamp, or by a jet of gas, the heat accumulates between the outer coat and the inner vessel, which contains the water, and by this means boils the water in half the time required by a common kettle. Might not steam be generated in this way at an easy rate, and made to heat a cistern of water, even though at some distance from it; or, might not a system of circulating hot water in a hot-bed or pit be contrived with a Gordon kettle and a set of tin pipes? Or, in a green-house where there are no flues, might not a lamp, or a jet of gas, be kept burning night and day, under a cistern of water, which would give out its heat in cold nights in proportion to the degree of cold, and would never become too hot in the daytime? I know that heating frames and green-houses by lamps has been tried both in France and England, without ever having come much into use; but I think if a mass of heat, if I may so speak, were accumulated in a body of water, either circulating in pipes, or at rest in a covered cistern, the effect would be quite different.—*Zig-zag, September 30. 1827.*



Heating Water by burning Gas.—One advantage of heating hot-houses by hot water is, that they can hardly ever be overheated. The heat of the water need never exceed 150° , and, supposing the temperature of the air of a hot-house in which a cistern heated to that extent is placed to be 80° or 90° , water parts with its heat so slowly that the air of the house would not be greatly increased in temperature for a long time, especially with the ordinary extent of glass roof. It follows, as we think, that where the artificial heat of a hot-house is to be communicated to its atmosphere by means of a large reservoir of water, it would not signify much whether that water were heated during the day or during the night, or whether the waste, however irregular it might be, was made up by an irregular supply, or a supply perfectly constant and regular. Admitting the latter plan to be a good one, then, in all situations where gas pipes are laid for the supply of lamps, a jet of gas might be burned night and day under or within the reservoir, and thus furnaces and flues entirely dispensed with. Perhaps the way of procuring most heat from a jet of gas would be to cause the smoke and heat of the flame to ascend through the water in a spiral tube (*fig. 129. p. 366.*), similar to the worm pipe used in distilling. If cisterns, so heated, were found to give out their heat too rapidly in the daytime, they might be cased with boards, with a vacuity of 6 in. between the cistern and the boards. This case and vacuity would prevent the escape of the heat when it was not wanted, and the boards might be removed or opened in different degrees (they might open and close like Venetian window-blinds) in the evenings, according to the estimated coldness of the approaching night. In the case of green-houses, where a very moderate supply of heat is wanted, burning a jet of gas in the night would, during the greater part of the winter, be found sufficient; and, limiting the burning to the same period, might probably be found adequate for pits and frames of every description; possibly, also, for such plant stoves and forcing-houses, for succession crops, as may be covered with straw mats, in the

manner already strongly recommended. (p. 167.) Many small green-houses and conservatories about London, which are at present without flues or fire-places, and, consequently, without good and healthy plants, might be most economically and elegantly heated in this way. If the ponds and tanks formed in kitchen-gardens for the supply of the watering-pot in the warm season, were of suitable shapes and sizes to be covered with frames and sashes, the water might be heated by immersed lamps or jets of burning gas; a floor of planks, flag-stones, or slates, on iron rafters, or of cast-iron plates, might be formed over the water, on which to place the pots of plants to be preserved, or the mould in which to grow cucumbers or melons, or to force fruits or culinary vegetables. With the heat supplied in this way, and retained by ample coverings of thatch or reeds, much might be done. It is easy to conceive the idea of a whole system of pits, and what are called hot-beds, built of brickwork, and heated by tanks of water, instead of beds of dung. The lower parts of the walls of the pit, and the bottom, or pavement, would require to be set in Roman cement, and the mould for the plants must be supported by an arch thrown across the pit, or on flag-stones supported on piers, or by iron rafters. The water might be heated either by the perpetual burning of jets of gas immersed in it, or communicating with it by small Gordon, or spiral-tubed kettles, outside the pit; or by a boiler on the common circulating principle (p. 186.); or by steam from a boiler placed at any distance, somewhat in Earl Powis's manner. (p. 376.) If pits might be heated in this way from below, hot-houses of any size might be heated from stone or iron cisterns of water, not occupying greater space than the present smoke flues, and, certainly, nothing could be easier than to substitute water for tan in growing pine-apples.

One of the cheapest modes of heating a Hot-house by Hot Water, at least so it appears to us in the present state of our knowledge on this subject, would be to employ earthen pipes (p. 375.), slate cisterns, formed in Mr. Atkinson's manner (*Gard. Mag.*, vol. ii. p. 451.), and a tin or copper spiral kettle of 9 or 10 in. in diameter, and 20 or 24 in. high. This kettle (*fig. 129.*) should be connected with the earthen pipes (*aa*) in the hot-house by two small pipes (*bb*) carried across the wall of the house, from the top and bottom of the spiral kettle (*c*). Instead of a jet of gas (*d*), or when the gas could not be obtained, or in addition to the gas in very cold weather, a common lamp, with a floating tin burner, or any other common lamp, might be used as a substitute, or to increase the heat.



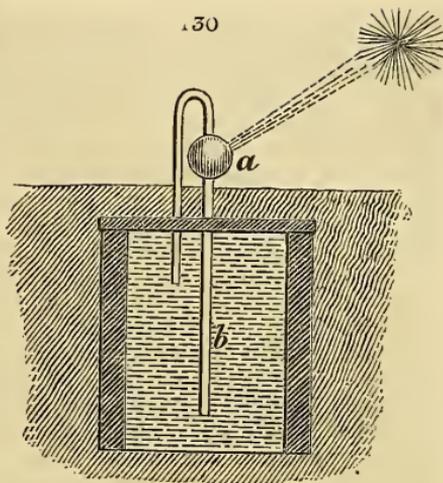
If water could be heated by the concentration of the sun's rays, and we see no difficulty in the thing but the expense, it would be an easy matter, not only to heat hot-houses, but to raise the temperature of an entire garden, or even of an entire country. Sink wells or cisterns, at regular distances, all over a garden or country, and place over each a concentrating apparatus (p. 101.), so contrived as to operate upon a ball. (*fig. 130. a*) This ball being connected with a pipe (*b*), the change of temperature of the water in the ball would cause the water to ascend in successive portions,

and thus the pipe would act like a syphon, and draw up the water from the bottom of the well or tank, to be heated in the ball, and return it to the top of the well or tank, there to give out its heat to the earth above. If, instead of a series of wells in a garden, we imagine the whole garden to be supported over one large tank of water, it is easy to conceive that the temperature of the surface soil would be so much increased as not to be frozen even in winter, and consequently the climate of the garden, both in winter and summer, would be very much improved as far as heat is concerned.

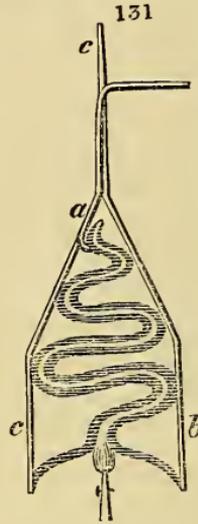
A lake or a canal, in a gentleman's park, so heated by numerous concentrators, would certainly have some effect on the adjoining soil and trees. If all the lakes, ponds, canals, wells, and tanks in England were so heated, the climate of the country would surely undergo some change; and the next idea that occurs is, what would be the effect on the climate of the whole world, supposing it were practicable for all its seas, rivers, and lakes to be covered with solar concentrators? — It must not be forgotten that nature, in operating upon the temperature of the world, next to the sun, employs chiefly the heat and cold of the water of the ocean. The same sort of circulation takes place between the seas of cold countries and the seas of hot countries which takes place in the upper and lower pipes of a hot-house heated in the Elcot manner; and islands in cold climates, such as Britain, are kept warmer than they otherwise would be, by being surrounded by water which has been heated in great part in a warmer region, in the same way as hot-houses are kept warm in the night by water which has been heated in the day.

Water in many cases might be heated by pipes communicating with a kitchen fire. — We have elsewhere suggested that baths, which might serve also as reservoirs for heating rooms or as substitutes for stoves, might be heated in this way in any part of a dwelling-house, and either above or below the level of the fire. No plan equally effectual could be devised for transferring part of the heat generated by the kitchen fire to other parts of the house, or to adjoining apartments, green-houses, shops, or manufactories. An artist could not heat his apartments by an equally unobjectionable mode. In this way, water at a great distance from the fire might even be boiled; and hence this improvement might be rendered available in cooking, brewing, and washing, but especially in the drying room of a laundry.

Water might be heated by the gas lamps of shops, by simply having a double funnel over the flame (*fig. 131.*), the vacuity filled with water, and communicating with the reservoir to be heated by a going and returning pipe. No house in London having a shop, need require any fire-places or chimneys but for the purposes of cookery; and, indeed, were gas only a little cheaper, fires in large cities might be dispensed with altogether. It would be easy to render gas an elegant substitute for a fire in a drawing-room; while the heat, as it passed up the chimney, might be communicated to pipes connected with reservoirs of water for heating other parts of the



house. Most kinds of cookery might also be effected by gas; and what could not, would only require a little coke or charcoal. The gas lights of churches and other public buildings might, in many cases, communicate heat as well as light, simply by having a double spiral funnel (fig. 151.) over the flame, and a going tube (*a*), a returning tube (*b*), and a pressure or balance tube (*c c*), communicating with a reservoir; which reservoir might either be under the floor or in any part of the house between the floor and the roof. But perhaps the best way of heating churches would be to have two or three solar concentrators on the roof, communicating with an immense cistern under the floor. There would at least be enough of sunshine during the week to produce heat for Sundays. The immersion tanks of Baptist chapels might be heated in this way, the water of public and private baths, and the mode is applicable to a variety of other cases. The only question is, as to the expense of the concentrators, and the machinery requisite to keep them continually at the proper angle to the sun's rays. We wish some person of leisure, ingenuity, and a little spare money, would communicate with Mr. Gauzen on this subject, and determine a number of points by experiment. To heat by concentrators a vault of water under a pit, either for protecting plants during winter, or for early forcing, would be one of the easiest and most desirable objects to begin with.



ART. VIII. *Retrospective Criticism.*

POSITION of Cottages.—Sir, Observing the liberal candour with which you correct your opinions, if your correspondents adduce reasons which appear to you better than your own, I venture to offer some remarks on passages in your Magazine for July, 1827. In p. 478. (of Vol. III.) on Cottage Economy, you require that a north and south line should form a diagonal to the square of the outer walls. Now, admitting your position that both the sun and wind striking obliquely will fall on the walls with moderated force, I totally deny your conclusions. You seem to assume that the wind will always blow from the four cardinal points; but, in this climate at least, the fact is otherwise; and when it does blow from either of the four cardinal points, the wind is less, and therefore its direct impulse is desirable. For instance, a south wind is always a soft and pleasant wind, so, for the most part, the west wind; the north wind is dry, wholesome, and, though cold, not injurious or unpleasant. In praise of the east wind, indeed, I can only say, that it is dry, and not very prevalent. Now, if these winds come with their full force direct on the walls of a house, not much harm is done, and much pleasure and benefit result; but, if you change each front 45 degrees, you have indeed one front direct to receive the delicious south-easter, the opener of flowers, and morning's whet to trouts and salmons; but, against that, you have the next front fully exposed to the south-wester, bringing five sixths of all the rain that falls, and ninety-nine hundredths of all the driving rains, to wet through all the walls that art can construct, at least in

maritime situations and for twenty miles inland. You have, indeed, in that position, the delightful and bracing, but rare north-wester, known more by description than by actual feeling; then you have the horrid north-easter, prevailing more than a third, probably near half the year, penetrating walls, and doors, and windows, and raiment, crucifying every fruit tree and ornamental shrub on your wall exposed to it. In short, you select a predominant dose of the worst winds, and a very short allowance of the best. And, as to the sun, the meridian sun which falls on a south front, being so high before it directly impinges on the wall, shines very obliquely downwards, and never heats a south front much in summer; and in winter, when the sun is lower, you get the most sun on that front: and the more you can then have, so much the better. The direct east and west fronts are less heated in the morning and evening of a summer's day, than the south-east and south-west fronts; and the northern aspect is much preferable in summer to the north-western, which, in that season, is rendered very oppressive by the setting sun. Now, with fronts to the four cardinal points, the two worst winds and most prevalent in duration, viz. the north-easter and south-wester, fall on the angles of the building, and thereby waste their force and their cold, and their wet, in an oblique attack.

It is stated by Mr. Felton (Vol. II. p. 481.), that *Mr. Hollis ordered his body to be buried in one of his fields at Carsecomb*, in Devonshire. The fact is not correctly stated. Mr. Hollis's estate was at Corscombe, not Carscomb, in Dorsetshire; and the circumstance ought to be deeply fixed in the memory of every man of taste, by the recollection of the beautiful and enthusiastic allusion to the fact, contained in the Rev. Wm. Crowe's poem of *Lewesdon Hill*, p. 21.

“ Fain would I view thee, Corscombe, fain would view
The ground where Hollis lies; his choice retreat,
Where, from the busy world withdrawn, he lived
To generous virtue, and the holy love
Of liberty a consecrated Spirit;
And left his ashes there: still honouring
Thy fields with title given of patriot names,
But more with his untitled sepulchre.
That envious ridge conceals thee from my sight,
Which, passing o'er thy place *north-east*, looks on
To Sherburne's ancient towers.”

Now, Devonshire is all far to the west.

Conium is not derived from *κοινος* (cōnis), dust, which is a wholly different word, and of a different root, being spelled with an omicron, or short *ō*; whereas *κωνειον* (cōneion), cicuta, is spelled with a long *ō*, or omega, and is derived, according to the etymologist quoted by Robert Stephens, in his *Thesaurus*, 4. 1331., from an old verb *κωνεω* (cōneō), signifying to turn round like a top, which again is derived from *κωνος* (cōnōs), a cone: and the name was applied, because the effect of drinking the juice of hemlock, which was an ordinary mode of executing criminals at Athens, was to induce giddiness and reeling, and a turning round of the person affected by it. The learned Scapula concurs in this derivation; see *Κωνος*.

Your very valuable communication on *limekilns*, from *Mr. Menteath*, (Vol. II. p. 599.) does not convey any satisfactory information to me in one very essential point, which he no doubt omitted from not expecting that any of his readers would be so stupid and ignorant as I am. I want to learn how the heat is communicated from the fuel-chamber to the lime, and how the fuel is replaced; viz. whether there is an iron grate or bars over the fuel-chamber, through which the flame and heat pass upwards to the lime, or whether the burning lime sustains itself in an arched

cavity, sufficiently to suffer fuel to be inserted under it through the doors of the fuel-chamber, without the lime falling in; for I presume that the fuel must be renewed before an entire kiln is drawn, and that the fuel is not put in at the top in layers, alternating with the limestone, as in the old way. And is there a grate, or bars, below the fuel, as in a common furnace? And what are the dimensions of the several bars and grates? I am, Sir, &c. — *Causidicus*. Aug. 15. 1827.

If our correspondent has observed the process of burning lime in any common limekiln, the simplest mode of answering his queries will be to state that, in all that relates to burning, the process is the same as in common limekilns. The superiority of Mr. Menteth's kiln consists in its form, and in the use of a protecting cover. The position and proportionate dimensions of the iron bars are the same as in common limekilns. — *Cond.*

Etymology of Botanic Names. — I beg leave to differ from you in printing the etymology of names that are from the Greek in English, and not in Greek letters. I think they would answer the end in view much better if they were in Greek characters; it would be far more conducive to a general knowledge of botanical glossology, and a greater stimulus to the student. By printing the derivations all in one type, no person, except the learned, can know whether they are from the Latin or Greek. I will take *Hyoscyamus* for example, which you say is from *hyos* a hog, and *kyamos* a bean; but who can tell whether they are Latin or Greek words, for the Latin words are in the same type; had it been printed *ús* a hog, and *κνamos* a bean, your readers would have known it was from the Greek, and to those who are not acquainted with the Greek language, it would be an inducement to learn it, as I can testify; for by looking over some generic names derived from the Greek, in Greek characters, I made them all out without the help of a Greek alphabet. Since that time I have applied myself to the study of the Greek language, and am proud to say that there are very few generic names derived from the Greek but what I know. If other young gardeners had the same advantages, they might perhaps do the same. I am Sir, a wellwisher to your Magazine. — *J. P.* August 17.

There is not one composed generic name in five hundred that is not from the Greek, nor one composed specific name in five hundred that is not from the Latin; therefore we do not think our correspondent's objections to our mode, or his view of the advantages of the mode he proposes, of sufficient force to induce us to alter our plan, more especially as it is the plan we have followed in our *Hortus Britannicus*: farther, the adoption of Greek letters, either in that work or this, would add materially to the expense of printing, and consequently to the price charged for the quantity of material given to the public. — *Cond.*

Gardeners and Labourers. — I must bespeak your patience, Sir, while I have a few words with yourself. You must understand, Sir, that I am not one of those tame domestic animals, who are so much in request nowadays; but I am one of those who, seeing any infringement upon the just prerogative or true dignity of my fellow-men or my own, dare demand justice; and (pardon me, Sir) you have somewhat degraded us in your note accompanying "A Nurseryman's letter." (Vol. II. p. 268.) You have set us below the level of common country labourers. On this matter I must quarrel with you, Sir, for it does not occur to me, that any argument whatever, founded on sound reason, can show how the workmanship of a common labourer can surpass that of a professed gardener, in such jobs as gardeners are generally set to in the nurseries. However, Sir, I trust you are candid enough to show better cause for, or to correct, the statement. As a proof, you refer to Mr. Donald's nursery, where, you say, "the work is performed by common country labourers;" but are they not regular nursery labourers [certainly regular nursery labourers would have been a better term], who, from the time

they have been there, ought to be able to finish a piece of work both in neatness and expedition equal with a professed gardener? And does not Mr. Donald employ more men proportionably, than many nurserymen do? [No.] I imagine he does, which best accounts for the superior condition of his nursery. — *Sensitivus.* Aug. 5.

Calceolària integrifolia and corymbòsa. — Sir, May I request the favour of your correcting a slight mistake in the last number of your Magazine, p. 69. In quoting the contents of No. 150. of Edwards's *Botanical Register*, wherein *Calceolària integrifolia* var. *angustifolia* is described as adapted for a wall, &c., you refer to page 187. of the 2d volume of your own Magazine, where a very distinct variety, *Calceolària corymbòsa*, is figured and described. This correction is so far important, that the experiment of turning out or training with the latter plant would fail, it being, as you describe in Vol. II., scarcely more than biennial, and a low herbaceous plant, whereas *C. integrifolia* will, with management, reach the height of 3 or 4 ft. with a suffrutescent stem, though far less brilliant in the colour of its flowers, and inferior also in their size.

I do not think it is generally known that *Passiflora palmata* will stand our winters without any kind of protection except that afforded by a wall with a southern aspect, against which I have one that has survived two winters, and is now, after many successive weeks, in full bloom, and forming a very great ornament to a trelliswork in front of my house. — *A constant and approving Reader.* Oct. 20.

Catalogue of the Fruits in the Horticultural Society's Garden. — I send you herewith a few observations, if you think them worthy of notice in your excellent Magazine, on *The Catalogue of Fruits cultivated in the Garden of the Horticultural Society of London, at Chiswick.*

The advertisement says, "The fruits were actually cultivated in the garden of the Society in the spring of 1826, and the list comprehends nearly the whole of those which have ever appeared in *print* in *foreign* or *English lists of authority*," that is, they have at this time nearly all the fruits cultivated in England that "ever had a name," from the time of Parkinson, our first best authority, in 1629, to the year 1826, and also all those of France, from Merlet in 1667, to Noisette in 1826.

If this is meant literally, it affords no proof of discrimination or judgment in the compilation, for a great portion of the old fruits inserted in the catalogue have now no existence, or at least cannot be accurately ascertained.

It would have been desirable had the compiler of the catalogue given a reference to the authorities whence the names were taken, or from whom the fruits were received, that we might ascertain if it is the old fruits that are actually meant, or new fruits with old names, or the same plants under different names; as it is, we are left quite in the dark, whence and where they derive their existence.

There is said to be 3825 varieties enumerated, and 1000 more existing of doubtful authority. Now, Sir, I should wish to ask for what purpose is this assemblage of names collected together? Is it intended that the Horticultural Society are to have the sole merit of settling the synonyms? Are the labours of Switzer, Miller, Hill, Hanbury, Forsyth, and others, which have been directed to this subject, to be disregarded?

A large reduction of the 3825, it is said, will doubtless be effected, as the different classes of fruits shall be successively submitted to careful examination. Why this has been done already, as far as regards many of the old fruits, by the authors above-mentioned; but such has been the vanity of multiplying names, that in many instances, where the old fruits have had two names, these have been separated and enumerated as distinct sorts: — but "It has been judged more proper to suffer the same kind to stand under different names, than with an insufficient degree of information to risk

adding to the existing confusion of the nomenclature, by a precipitate reference of really distinct varieties to one common name." Surely the compiler is adding to the "existing confusion," by inserting old and synonymous names that were long ago decided, at the time when the fruits were in actual cultivation, and that by men well conversant in practical knowledge. I select the following instances of fruits repeated over again under different names, and also of the inaccuracy of the synonyms, as they stand in the catalogue:—

The *Apricots* are divided into British and French. The Moor Park is said to be the same as the Abricot Pêche, and inserted twice under both names; but the Abricot Pêche of Duhamel is not the Moor Park, and it is doubtful if the Abricot de Nancy, or Wurtemberg, be the same. The Maculé of the French is a variety of the Abricot commun, and not the Blotched-leaved Turkey, a name unknown to them. (See *Duhamel*.) The Royal and Royale are the same; the Algiers and the Royal Orange are the same; so are the Brown and Red Masculine.

Of *Cherries* there is a very confused list; the 111 English sorts may be reduced to about 50 or less. The Bigarreau and the Graffion are different cherries. Why were not all the Duke Cherries, Hearts, &c., arranged together in the same way as the Geans? Where is it found that Tradescant's cherry is a *Heart Cherry*? Parkinson, who first described it, says no such thing. Among the French cherries are many English ones; the Montmorency à Gros Fruit, Gros Gobet, and Gobet à Courte Queue, are three distinct cherries. (See *Noisette*.) Fifteen German cherries are added, or rather fifteen cherries with German names, among them Fraser's Tartarian Cherry. Baron Truchsess, of Bettenberg, in Franconia, collected all the cherries he could procure from Germany, France, England, &c., but he could make out only 76 varieties; and, as Calvel observes, "It would be necessary to have a *jury of savans* to fix the nomenclature."

Of *Figs* 75 are enumerated. Here, again, we find both English and French repeated under different names. The Blue Fig is the *Violette* of the French; the Marseilles, or Pocock Fig, is not the Marseilles of the French; it scarcely ripens in Provence, except on the sea coast, and certainly will not do so here. The Lambeth Fig is probably the Small White Fig, or Versailles Fig; the Black Provence is the *Violette de Bourdeaux*; the White Malta is the *Angélique*; and the Large White, the *Figue Blanche*.

The *Peaches* have been well done to hand by Lindley; but here there are transfers of names, which only tend to add to the existing confusion. The Belle de Vitry, or Admirable Tardive of Duhamel, has been long considered in England as the *Late Admirable*, but it appears that some nurserymen sell the Royale for the Late Admirable, therefore the latter name is to take the lead, and the Royale, one of the oldest peaches, to be found in a synonym. The White Avant and the Red Avant are the White and Brown Nutmeg. (*Miller*.) The Vanguard is the Noblesse of Switzer. What is meant by No. 128. Pavie? The French are now agreed to make the name Bellegarde a synonym to the Galande, to prevent confusion; but here both the names are preserved distinct. Alberge Jaune and Rosanna require elucidation, as neither French nor English are agreed about them. Among the *Nectarines*, we find the common Elruge and the Elruge of Miller; they are both the same, for the Elruge, as described by Miller, does not exist, and must have been an error in copying for the press (a similar one occurs in his *Lisle Peach*); for there appears to have been no other serrated-leaved nectarine at that time but the Newington. (See *Langley's* figure, and *Switzer*.) Miller made no alteration in his descriptions after he first published in 1752.

Of *cultivated Plums* 276 are enumerated. D'Avoine and Jaune Hâtive are the same; Azure Hâtive is supposed the same as the Blue Gage. The Cheston Plum is the *Blue Matchless*; several of the old Damas and Damask

Plums are lost, as is the Black Perdrigon, and many others herein named. Monsieur Tardif is the Prune Suisse; Reine Claude, the Green Gage, &c. &c.

Of Apples 1205 (and 400 more exist in the garden) are named here; the number seems to have alarmed the compiler, for he says, "from uncertainty of the correctness of the names, and from other causes of doubt respecting them, it has not been thought advisable to insert them in the present catalogue." It would have been happy had these "doubts" prevailed more frequently. Most of our cider apples are omitted, but a great many French ones are inserted on the authority of M. Hervey, whose catalogue of the Luxemburg collection seems to have been referred to throughout all this catalogue, and which has been the cause of many errors in the synonyms. Subsequent French writers, Calvel, Loiseleur, Noisette, &c., have corrected these.

It would take up too much of your useful publication to go over the common list. "A considerable reduction of the names is to be anticipated, whenever a general comparison of the varieties can be effected." Surely it would have been better to have inserted only those sorts which have been already proved, leaving the new sorts to be inserted from time to time as they could be ascertained, and their goodness estimated; as the list now stands, no gentleman can make a proper selection wherewith to furnish his garden, and the nurseryman finds it difficult to know what sorts to recommend.

Of Pears 622 are enumerated. Here again the same varieties occur under different names, and the synonyms are very incorrect. Ambrette d'Été, Crapudine, Rude Epée are the same as the Grise Bonne; Archiduc d'Été is the Ognonet, and not the Amiré Joannet; Vermillon d'Été is not the Bellissime d'Automne; Hampden's and Summer Bergamot are considered the same by the old writers. What is meant by the Common Bergamot? Why is Beurée spelt with two ee's? No French author writes it so. Bonchrétien Turc is not Bonchrétien at all, and the name has been properly altered to *Turque* by Loiseleur. Carlisle, according to Miller, is the same as the Doyenné; Donville, Poire de Provence, and Bequesne are three distinct pears. Doyenné d'Hiver is the Bergamotte de la Pentecôte. Under Épine d'Été occur as synonyms Fondante, Musquée, separately, whereas it is one sort. Gogil and Poire à Gobert are different pears; Monsieur Jean Blanc and Jean Doré are the same pears. Now all these synonyms might have been corrected, had attention been paid to Calvel, the Nouveau Duhamel, or Noisette, and not to Mr. Hervey alone.

Of Grapes 159 sorts. "Some reduction of names has been made, as will be seen in the following list, by referring supposed varieties to their synonyms." The Alicant has for its synonyms Black Spanish and Teinturier: this is so far correct, for the *Teinturier* is called by the French *Alicante* and *Noir d'Espagne*, but it is so bad a grape, that in Burgundy, where it occurs in their vineyards, they cannot even make wine of it, and it is solely used for colouring their good wines, hence the name. The large Black Spanish, Gros Noir d'Espagne, or Raisin d'*Alicante*, called also Ramonat, and Negrier, is a much better grape, brought to the dessert, and is the grape that produces port wine. The true Alicant Grape which Miller had is a red grape, and not, I believe, at present in this country, nor is it known in France. The Black Cluster is not the Auvernat; the latter is the true Black Burgundy, Maurillon or Pincau de Burgogue. Chasselas Musqué is the Le Cour grape of Miller. The Back Constantia is the same as the Muscat Violet, or Blue Frontignac. The true Black Hamburg is the *Renraw*, and should have its proper name; it was brought over by Mr. Warner at the same time with the other Hamburg grape, and was cultivated also by Furbur, at Kensington, in 1724. The list of grapes is extremely imperfect, and seems to be the most carelessly drawn up in the whole catalogue.

Do the Horticultural Society mean to exclude from their collection the *Common White Muscadine*, for the name does not occur, and this grape is, without exception, the most useful, and best out-of-door grape in this country. It was cultivated in Parkinson's time, and probably much earlier. Under the Royal Muscadine it would appear to be included, for here are three grapes designated by one name. The Chasselas, Chasselas Doré of Duhamel, and the Chasselas de Fontainebleau are the White Muscadine. The Chasselas de Bas sur Aube is the Royal Muscadine, and the D'Arbois of Sir W. Temple, &c., is a Sweetwater grape, and has been called the French Sweetwater.

It is to be hoped that, in the future editions of this catalogue, some little more attention will be paid in the compilation. The Horticultural Society have a considerable library at hand to consult on every occasion where there is doubt, and which will add greatly to their own personal observations. As a body, they can do more in settling the synonyms of fruits than any individual whatever, however industrious or indefatigable, or whatever may be his practical knowledge; besides, they have opportunities of comparing and adjusting differences which no single person can possibly have at his command.

I have just seen the first number of the *Pomological Magazine*, edited by "two gentlemen intimately connected with the Horticultural Society," which tends to confirm my opinion as above; for at No. 2. is figured the Royal Apricot, or Abricot Royale, *Bon Jard.* and *Noisette*; now, if this was known to be the case, why was it inserted in the catalogue No. 20. Royal, and No. 50. Royale? Again, No. 5. Sugar-loaf Pippin, Dolgoi Squoznoi; both names appear in catalogue, Nos. 254. and 1078.—*M. H. Nov.* 20. 1827.

On blacking Garden Walls. (*Gard. Mag.* vol. ii. p. 421.)—Coal tar is used for this purpose; I have used it myself for the purpose of blacking a wooden fence, and had the idea that it would operate against small vermin and the green fly, but in this I was greatly disappointed; indeed, I do not like coal tar for any purpose; its only recommendation is its cheapness. I think the following composition is much better:—

Take Stockholm tar one gallon, boiled linseed oil (drying oil) one quart, a sufficient quantity of mineral black in powder; put all together into an iron pot, and simmer it for some time over a small fire; use it while hot in the same manner as paint: the gloss will soon go off.—*W. Green, jun. Stepney, Aug.* 31. 1827.

Preventive against Birds taking Seeds out of the Ground. (*Gard. Mag.* vol. ii. p. 465.)—If some *thin light-coloured* twine or *white* worsted be stretched *tight* across the beds in which seeds are sown, at the distance of about 2 in. from the surface of the beds, and about 2 or 3 ft. from string to string, small birds will not touch either seeds or the young plants of onions, against which sparrows seem to have a particular spite, as they pull them up by hundreds, and leave them lying upon the surface of the beds, but do not appear to eat them. This is the most effectual method I have ever seen employed, and it is a very old one.—*Id.*

Shrubs most capable of resisting the Effects of the Atmosphere of London. (Vol. II. p. 484.)—Add the tree box and the *Aucuba japonica*: the common laurel will scarcely live with me.—*Id.*

ART. IX. Answers to Queries, and Queries.

HEATING by Water in earthen Pipes.—If Mr. Wells of Bickley will, through your valuable miscellany, communicate if by "earthenware pipes" are meant the common pipes made of brick earth, or pipes of some superior

material; and if the latter, where it is to be obtained, and its relative price, as compared with the iron pipes furnished by Messrs. Bailey; and, in either case, the diameter of the pipes used by him; also, if a reservoir be *necessary*; he will oblige many of your readers, besides your humble servant — *J. M. Brighton, Nov. 16. 1827.*

The pipes at Bickley are common earthen pipes. We have seen pipes, which we should think would answer extremely well in many cases, at the wharf of Messrs. Grieve, Grellier, and Morgan, Waterloo Bridge. They are made in Wales, of fire clay, in lengths of 2 ft. each, and of the following diameters and prices:—6 in. in diameter, 3s. 6d. per pipe; 4 in., 2s. 6d.; 2 in., 1s. 9d. They are used for conveying water, and, when joined by Roman cement, are said to be perfectly watertight. They are greatly superior to the pipes at Bickley, from the circumstance of being so easily joined together, and from admitting of a joint perfectly watertight. At the ordinary thickness of cast-iron pipes, they will cost more than double the prices above given for earthen pipes.—*Cond.*

Heating by hot Air and hot Water.—Sir, As economy in horticultural pursuits must promote its interests, every thing that may contribute thereto no doubt must be acceptable to your readers. I have referred to your *Gardener's Magazine* and also to the *Encyclopædia of Gardening*, but can find nothing concerning the transmission of hot air from an adjoining building to a green-house or conservatory. As hot air is now pretty generally made use of in mansions, I see no reason why a portion of it may not be borrowed, sufficient to supply a green-house containing vines on the rafters, but which are not to be forced till the geraniums, &c., are removed for the summer, the vines being a secondary object. May not hot air be introduced into a green-house connected to the kitchen range, a wall only intervening, as the fire in the kitchen is seldom extinguished, and, if at all, but for a very short time. I am convinced many persons would have green-houses, &c., in the part of the country I live in, but for the expense of fuel, which is exorbitantly dear. If any of your correspondents would give a paper on the subject, with plans of valves and pipes, and with the greatest extent of distance that heated air may be conveyed and continued at the temperature of 50° to 60°, when the external atmosphere is at 32°, he will oblige, no doubt, many of your readers, and none more than your humble servant, — *A Subscriber. Aug. 17. 1827.*

Having had some experience in making attempts to heat hot-houses by hot air, we have been reduced to the opinion, that it is the worst of all modes of heating, on account of its liability to produce extremes; the difficulty of putting air in motion, and its dryness. If heat is to be conveyed from a kitchen fire to a green-house, or to any part of a dwelling-house, a going and returning pipe of water is by far the best mode. There can be no doubt that something is to be done in this way; and one thing which we should like to see adopted in every house is the heating of a bath. A bath might be so contrived, in the alcove of an ornamental green-house, as to serve both as a bath and a stove. A revolution in the mode of heating, both in domestic and hot-house economy, is in commencement, in consequence of the discovery of the hot-water system. Messrs. W. & D. Bailey, of Holborn, are entering fully into it, and we would recommend all our readers who are interested in the subject to consult them.—*Cond.*

Earl Powis's Mode of heating by hot Water.—Can you give me any account of this mode of heating, of which I have heard a good deal at different times among some of His Lordship's friends? Is it the same as that of Elcot? or, if it is different, which is the best?—*R. W. Nov. 20.*

Earl Powis's mode of heating is described by Mr. Manwaring in *Gill's Technological Repository* for November 1827, p. 261, and consists in surrounding a small steam-pipe, of not more than 2 in. in diameter, with

another pipe about 6 in. in diameter, filled with water. The water and steam-pipes surround the house to be heated in the usual manner: they are made gradually to descend from the place where the steam enters to where it escapes, in order that the condensed water produced from the steam may be conveyed back again to supply the boiler. In order to obviate the mischief that might arise from the expansion of the water to be heated, and the consequent generation of steam in the water pipes, a cylindrical vessel, placed on end, and open at top, is connected with the pipes, and in this the water may rise and fall according to the degree of contraction or expansion to which it may be subjected. It will be evident to whoever compares this plan with the simple and beautiful system in present use (p. 186.), that it is a much more expensive and uncertain mode of effecting the same object. It has, however, the historical merit of forming one step in the progress of this improved mode of heating.—*Cond.*

Cotonnier, Virginian Swallow Wort, Asclèpias syriaca.—Sir, Allow me to enquire, through the medium of your Magazine, whether the plant called Cotonnier, cultivated in Lower Canada, has yet been introduced to this country, and, if it has not, to suggest the propriety of its being imported; for, from the following description, taken from a book of travels, it seems likely to be a useful and ornamental addition to our culinary vegetables:—

“The cotton plant, Cotonnier, comes up in May, like asparagus, and is dressed and eaten as such in Canada. Its flowers resemble those of lilac. In the month of August, a dew appears on its leaves and flowers, which, shaken off into basins, about sunrise, and boiled down, yields a good sugar. The stem contains a lactescent liquor; the seed-pods are the shape of an egg, three or four inches long, and contain a fine white silky substance.”

[The plant alluded to is the *Asclèpias syriaca*, which has been in the country since the time of Parkinson, in 1629. It is common in collections, is of the easiest culture, but neither are the tops used as asparagus, nor the down of the pods for stuffing pillows or beds, as in Virginia.]

May I also ask where plants of the *Norway Cloud Berry, Rùbus Chamæ-mòrus*, so highly spoken of by Dr. Clarke and others for its refreshing and salubrious fruit, is to be obtained?—*A Constant Reader.*

Not about London, but any nurseryman at Edinburgh, or other towns to the north, may be written to, to send up turves containing the plant, which turves are conveniently got from its native habitats in October or March. In this way we have received it; but we doubt its living for any length of time so near London as Bayswater.—*Cond.*

Double Yellow Rose, in answer to R. N.—This rose flowers better on an east or west, or even a north wall, than on one exposed to the south. It should never be pruned farther than cutting out the dead roots or irregular shoots, and thinning out the blossom buds. It has flowered under such treatment for several years on the south and west ends of a small hot-house in the garden at Pain’s Hill, and in the garden at Cobham, in Kent; it flowers as freely, budded on the *Ròsa índica*, as *R. odoràta* does on the common blush rose, which Mr. Calvert of Rouen has found to be the best stock for this variety.—*C. Sept. 26.*

Bursting the Double Yellow Rose, in reply to R. N. (p. 119.)—I believe it is very rare for it to open perfectly. I have one against a west wall, and this year I think there must have been nearly, if not quite, a hundred roses on it, but not many that opened fully: those that did were beautiful. I have been told that chamomile plants should be planted at the root of the rose: this I shall try. I have observed that there are often many flies hovering about the tree. Whether they eat the rose, I cannot make out; but I shall watch next year, and pay particular attention; and should I make any favourable or useful observations, R. N. shall hear again. The yellow rose will bud on the China rose, and has flowered after this process.

As the yellow rose is very shy in throwing out suckers, and is rather a scarce plant, it would be well to try and increase it. The chamomile plan is worthy attention. — *Z. Nov. 5. 1827.*

Bursting the Double Yellow Rose, in reply to R. N. (p. 119.) — I am inclined to think that aspect or soil has more effect in blooming a yellow rose than any thing else. I have never been able to grow this beautiful shrub myself, on account of an almost constant smoke in my garden; but I heard an experienced man once remark, that in a friend's garden, where a yellow rose did not bloom, he recommended it to be removed from a south to a north aspect, when it thrived and bloomed well. I have seen one that bloomed very perfectly and freely on a east or north-east wall; and I have been told that in some villages east of Newmarket, on a very dry chalky soil, perfect flowers are produced in great abundance. — *Suffolciensis. December 1.*

Transportation of living Orchidææ. — Sir, At page 70. of your last Number you enquire respecting the transportation of living Orchidææ. So far back as the year 1816, I brought with me, on my return from Sicily, between two and three hundred roots of species indigenous to that island; nearly the whole of which flowered the succeeding year in the green-house of the Liverpool botanic garden, and in those of several of my friends. Many of these roots were sent to the Chelsea garden; but whether they succeeded or not, I never heard. The method I adopted was as follows: — The plants were taken up in full flower, at which period the tuber or bulb for the following year had not begun to throw out its roots: the earth was carefully removed from the tubers, and the plant laid in a shady, cool, dry room for about three weeks, when they were lightly packed with hay in a perforated deal box. The species thus introduced were as follows: —

<i>Orchis undulatifolia Bivona.*</i>	<i>Serapias lingua.</i>
<i>Orchis pyramidalis? Auct.</i>	<i>Serapias cordigera.</i>
<i>Orchis bipunctata Bivona.</i>	<i>Ophrys lutea. Willd.</i>
<i>Orchis variegata.</i>	<i>Ophrys speculum. Bivona.</i>
<i>Orchis longicornis Desf. Fl. Atl.</i>	<i>Ophrys tenthredinifera. Bivona.</i>
<i>Orchis purpurea Biv. sp. Nov. ined.</i>	<i>Ophrys ciliata. Bivona.</i>
<i>Orchis longibracteata Bivona.</i>	<i>Ophrys pallida. Rafinesque.</i>

The whole of these flowered the first or second year, together with three or four other species, apparently new, and of which I possess drawings. Several of these identical plants have been figured in the *Botanical Register*, but under names and synonyms very different from those assigned to them by their first describer, my accurate friend, the Baron Bivona, whose great knowledge of Sicilian Orchidææ I have had frequent occasions to admire.

Having thus replied to your enquiry, allow me to request you will give circulation to one from myself. What is the native country of the *Lathyrus grandiflorus* of the *Botanical Register*, and by whom was that beautiful plant introduced? My reason for making this enquiry is as follows: — During a botanical tour in Sicily, about the year 1810 or 1812, my attention was arrested by seeing, for the first time, this imposing species in full flower, spreading over a thicket on the side of Mount Scuderi, the present name of the highest ridge of the Nebrodes or Mountains of Neptune; a limestone chain, which runs from Taorminum to Messina. On this single spot it grew luxuriantly: but the extraordinary thing is, that although I remained eight years in Sicily, during which time I explored nearly every part of the island, I never saw this plant in any other situation. The last year of my residence, I made an autumnal

* *Sicularum Plantarum Centuria, 1, 2., Panormi, 1806-8, small thin 4to,* may be had of Mr. Bohu. The outline figures are excellent.

journey, for the sole purpose of gathering its seeds, of which a pint was procured, and sent in small parcels to all the botanical cultivators in this country I then knew. I described it in a Sicilian periodical journal, under the name it now bears; but it appeared in the *Botanical Register* with this as a *new* name, and something is said, I believe, (for I have not the book,) about its coming from Smyrna. Is this locality authentic? It will be interesting to know this on more accounts than one. It is related that Tournefort discovered a particular plant on a certain spot in one of the Greek islands, but which never occurred to him again during all his travels. Dr. Sibthorp, who explored the same countries, found the plant on the identical rock indicated by Tournefort, but never again. We can scarcely believe that such fixed limits of existence can actually be circumscribed in nature; yet, until it is disproved by facts, we are bound to believe it; and the theory would be very much strengthened if what is yet known of *Láthyrus grandiflorus* placed this plant as an additional example. — *William Swainson. Tittenhanger Green, near St. Albans, Herts, Oct. 20. 1827.*

If your *Iris* correspondent will favour me with his address, as we cultivate the same plants, it may lead to mutual benefit. — *Id.*

Garden, Hot-houses, and Pits. — I am about to make a new walled garden of very nearly two acres within the walls. The situation is a bank gently sloping from west to east; the shape an oblong square; the soil at the upper end (west) peaty, but well drained, and about 6 ft. deep; at the lower end only 13 or 14 in. deep, with a hungry clay subsoil. The whole, till last year, was woodland. What is the best method of bringing such soil into garden ground? I wish also to know the best plan for pits to be heated by steam or hot water, for raising pines or melons; and should be glad, if, through your Magazine, I could be furnished with a plan for them of sufficient size to enable me to raise from three to four hundred pines in the year. What is the best aspect for the pits? and what would the probable expense amount to? The whole to be of thoroughly good and substantial work, and where labour and materials are expensive. — *H. November.*

To H. and other correspondents who are in immediate want of plans, or other practical assistance, we can strongly recommend our talented and experienced contributor, Mr. Main, of No. 6. Union Row, Queen's Elm, Chelsea. Mr. Main has had great experience both in agriculture and gardening, and is well qualified both for designing plans of gardens, hot-houses, plantations, pleasure-grounds, &c., and directing their execution. — *Cond.*

Scotch Pine. — It is said in Lambert's *Genus Pinus*, 'that the Scotch pine will always flourish best when planted in earth where the turf has not been moved; from not attending to this, the tree often becomes defective and unhealthy.' Does Mr. Lambert mean by this, that holing is better than trenching for the Scotch fir; and does the same observation extend to the other species of pines and firs? — *G. W. June 19, 1827.*

Collection of the Pine and Fir tribe. — Can you inform me in what gentleman's gardens or plantations I may find the various sorts of fir trees and pines bearing cones at the best advantage? I want to make an arboretum of them from undoubted seed, and to observe the growth of the plants. A list would be valuable, and of the sorts in each garden. — *Id.* [See the account of Dropmore, p. 257.]

Bostrichus Piniperdus, and Scolytus destructor. — Have any attempts been made to destroy these insects on the elm by the use of glutinous mixtures on the trees? The latter insect I observe to be very embarrassed in its motions by any fluid, even by water: and if any cheap mixture could be found which would retain its dampness and tenacious property for some time in the open air, I think it probable that a few locks of wool dipped in it, and stuck by it to the trees, would entrap a large proportion of them, as

they are much inclined to run on the trunks of the tree, particularly the males. Would any preparation of birdlime, or half drying oil, or turpentine, or of refuse of glue, or treacle, or gas liquor, answer this purpose? — *Id.*

Mr. Oldaker's Vines. — Mr. Oldaker, in enumerating the properties of his three favourite late grapes, which entitle them to consideration, says: 1st, They grow very freely, which enables them to carry a great crop. — When they carry a great crop, is it not an inferior crop? Is it brought to such perfection as if not so great? Will the grapes keep longer when unripe than otherwise? 2dly, They ripen their wood early in the summer, which is greatly in their favour for producing fruit the next year. — Now, if they ripen their wood so early, how is the fruit retarded until the latter end of November, and even winter, before it is ripe? 3dly, The leaves remain green all the winter, and the vines continue in a growing state, which enables them to bring their fruit to perfection through the autumn and winter. — Is it owing to the leaves being perfectly ripe, or the reverse, that the leaves remain? Instead of their growth being protracted through the winter, are they not like evergreens, retaining their foliage, although inactive? If Mr. Oldaker's vines keep growing and maturing their fruit all the winter, when are they laid to rest, pruned, and set a growing again, &c.? Mr. Oldaker's vines seem to possess other peculiarities besides perfecting fruit on the lateral shoots of the same year; perhaps he will be kind enough to throw some farther light on the subject. — *R. R. March 12. 1827.*

Winter Salading. — What is the best plan to have a constant supply of lettuce, endive, and parsley, throughout the winter. — *Id.*

Slugs. — I am troubled with slugs in my dwelling-house, (!) and should be glad to be informed how to get rid of them, and likewise upon what principle their movement depends. — *Id.*

Vines in the open Air. (Vol. I. p. 458.) — Mr. Pendergast, of Inistioge, in the county of Kilkenny, has succeeded in bringing to great perfection, in the *open air*, a particular sort of grape vine. I shall be greatly obliged if any of your correspondents will inform me of the name of the grape vine, and also give some information about the manner of cultivation and management of the vine, as I am engaged in making experiments on grape vines in the *open air* at the present time. — *Wm. Green. Stepney, Feb. 1.*

A *perennial Potato* has been mentioned to me by a lady from London. Can you or any of your readers describe the plant? Yours, &c. — *E. D. Bristol, May 1.*

The Cannon Grape is said to be very large, both in the bunch and berries, do you know any thing of it? — *E. M. Mather. Old Basford, Feb. 12.*

Assistance in laying out a square, and a parallelogram, as flower-gardens, is wanted by *Rusticus in Urbe.* *July.*

Mulberry Trees. — Sir, The publication of the views of the Silk Company, in the year 1825, having strongly excited the interest of myself and some of my friends on a favourite subject of experiment, I am now induced to request the insertion of the following questions in your valuable Magazine, in the hopes of eliciting early information on that branch of the subject which the Company's edition of Dandolo's work has left unnoticed; the absence of a more general diffusion of practical information constituting, I am convinced, a great impediment to the promotion of the highly desirable objects of the Company.

1st. The names, and a particular description of the most approved varieties of the mulberry tree, for the cultivation of the silkworm. 2d. Where the best varieties may be procured, whether the Company have made any arrangements for facilitating the supply of trees to gentlemen desirous to make plantations, or if any of the public gardeners are prepared to supply the best varieties in sufficient numbers to make a considerable plantation the present winter. 3d. The method of cultivation, and

necessary care of the tree to maturity; the title of any book containing practical information on this head; its cultivation in the climate of the northern half of England, if such is to be obtained, will be acceptable.

Your future pages will be examined in the hopes of finding some useful practical information, sought for in the present instance, by some who have the opportunity to plant on an extensive scale. — *J. S. S. Wales, Nov. 27.*

The Italian variety of the white mulberry, *Morus álba* var. *italica*, is acknowledged to be the best variety, and plants of it may be obtained at Loddiges, Hackney, and other nurseries. Any soil that will grow the common whitethorn vigorously will grow the mulberry vigorously also; indeed, there is no particular soil or skill required to grow it, either as a tree, or as a bush to be cut down every other year as in Italy. If the success of the silk manufacture depended merely on being able to produce mulberry leaves, silk might be produced as extensively in Europe as flax; for the mulberry being a deciduous tree late of expanding its buds, and producing its shoots rapidly in the warm season, it thrives almost as well, and is as productive, as far as leaves are concerned, in Sweden and Russia as in France and Italy. — *Cond.*

Breaking Tulips. — I have many books on horticulture, and amongst them is *The Dutch Gardener, or Complete Florist*, by Henry van Oosten. It was translated into English more than one hundred years ago. The author treats largely on the most beautiful flowers, and is very communicative even to the vulgar, until he comes to the article of “breaking tulips, and bringing them to perfection;” and, from his own account, he did intend being as explicit on this subject as he had been upon others; but, after consulting Virgil and the learned Bacon, and receiving a hint from a “divine genius,” he resolved to communicate this sublime mystery to none but “knowing artists.” To them the secret is revealed in the following mysterious language: —

“If you increase the strength of your mother by feeding her with the ashes of her bones and the substance of her father, then you will possess the land of promise, wherein udders of milk shall be, and rivers of wine, and other liquors of several colours shall flow across. Many rocks of gold shall be dispersed therein, and the ground shall be filled up with oysters, that shall discharge their red *carmin* on the ground, and bring their purple to light; and if you will follow the fashion, the milk of the udders shall be turned into liquor of saffron, which shall give you golden flowers.” (*Dutch Gardener*, p. 185.)

Now, Sir, ever since you sent forth that learned book, the *Encyclopædia of Gardening*, we have been steadfast in our faith of your being a “knowing artist.” We therefore humbly request you, or some of your “right knowing” correspondents, to favour us with a literal version of this sublime communication of Maister van Oosten. We confess we are but novices in the arts of Flora, but we are very solicitous of farther instruction. I am, Sir, yours, with more than usual civilities, — *Floristicus. Nov. 29. 1827.*

Iridææ veræ. — With what aspect, and in what soil, do the majority of the hardy *Iridææ* best succeed? Are there any species of *true Iris* found in southern Africa or in tropical America? I believe not. — *W. S. Oct. 29.*

To rot Weeds and Leaves. — What is the best process of converting garden refuse, as weeds, &c., into manure? and what the best for turning dead leaves into a nutritive vegetable mould? — *Id.*

Pears on Quince Stocks. — What is the reason why the following varieties of pears will not take upon the pear-shaped quince, viz. l’Échasserie, Doyenné Gris, Muscat d’Allemande, Royale d’Hiver, and Sylvange? We have already made many trials in every manner without success. They take and grow for a little time, and then die off. — *N. A. B. Bolwiller, on the Rhine, Nov. 3. 1827.*

Preserving Ice above Ground.—I should feel obliged, if you, or any of your numerous correspondents, would describe minutely the most simple and efficient mode of preserving ice from the action of the external atmosphere, and what sort of building would be best adapted for situations where the natural flatness of the land prevents an excavation of more than three feet?—*W. G. W. Liverpool, Nov. 21. 1827.*

Dahlias.—Can you tell me why the name Georgina was not retained instead of dahlia, which I have heard pronounced daw-ly-a, da-ly-a, and dea-li-a? The last, I believe, is the general pronunciation, which I think infringes on another genus of plants, I suppose named after Mr. Dale. Which is the proper pronunciation?—*Thomas Hawkins. The Haw, near Gloucester, March, 1827.*

Dahlias.—What is the proper time for planting dahlias, what soil suits them best, and may they not be propagated in the same way as potatoes are, I mean by dividing those roots which are furnished with eyes? [Certainly.] Last season, by accident or otherwise, some of my roots of choice dahlias were separated from each other, and I wish to know whether it would be worth while to plant them?—*A Constant Reader. April 11.* If the roots have buds they will grow; not otherwise.—*Cond.*

Embanking Land from the Sea.—In Menteach's *Forester's Guide* mention is made of a Mr. Lindsay's scheme for recovering land from the sea, and thereby enlarging the territory and augmenting the resources of the kingdom. (p. 7.) Can you, or any of your readers, furnish me with any account of Mr. Lindsay's scheme?—*W. G. Swansea, Oct. 1826.*

Rôsa Banksia.—Z. would be glad of any information as to the treatment of the Banksian rose, so as to make it flower. It grows luxuriantly with him, but has only once produced a small bunch of blossoms.

Mixing the Breeds of Potatoes.—I observed in Cobbett's *American Gardener* an assertion respecting early potatoes, which appears to me to be rather an extraordinary one. He says, that if you have got the true kind of early potato, and wish to keep it pure, "you must take care that no other sort grow *with* it or *near* it, for potatoes of this kind mix the breed more readily than any thing else, *though they have no bloom!*" Will you be kind enough to tell me, through the medium of your Magazine, whether this statement of Cobbett be really correct? [Not correct.]

With respect to the crossing of the breed of plants, I am of opinion that bees and other insects have less to do in this matter than is generally supposed. I think the wind is the chief cause, for I have frequently grown turnip seed quite pure within less than two hundred yards of cabbages and kale, in bloom at the same time as the turnips were; but there were three hedges intervened betwixt the turnips and the other plants—*A. Y. Sept. 13. 1827.*

The insects that infest cucumber frames occasion great trouble to gardeners. I, in common with many of your readers, would be glad to know the best method of destroying them.—*F. Powell, gardener. New Court, near Hereford, Nov. 12. 1827.*

Grubs and Wire Worms trouble me much, and I am very desirous of knowing how to destroy them. I am now in the habit of losing from sixty to one hundred cabbage plants every night. Perhaps Agronome will be able to furnish us with a hint on this subject?—*A Surrey Reader. Sept. 28. 1827.*

The best means of destroying Woodlice, which are very destructive in cucumber and mushroom beds?—*Z. Nov. 3. 1827.*

Packing and preserving Seeds.—Permit me, through the medium of your valuable Magazine, to suggest to the Horticultural Society the propriety of instituting a series of experiments to ascertain the best method of packing seeds for warm countries. An immense advantage would accrue from a

series of experiments properly conducted, and I am sure there is no subject that comes more within the objects of the Society than this, as the knowledge that would be acquired would not only be useful in sending seeds from this country, but also in the case of those that may be sent home. We might thus have many new vegetables, which, with our present imperfect knowledge, we can never obtain. Neither would the Society's labours in this way interfere with the efforts of private individuals in the introduction of new fruits and vegetables.—*Semina. London, April 15. 1827.*

Gold and Silver Fish.—Something of their history and proper treatment is wanted, and whether the Squilla aqua dulcis destroys the young fry, or what else is prejudicial to the increase of the fish.—*C. Hale Jessop. Cheltenham, Sept. 1827.*

Lime as a Manure.—You have had much on the use and abuse of salt in your Magazine; may I beg the favour of you, or some of your correspondents, to give a practical essay on the effects of lime as a manure.—*T**** R—d. Oct. 11. 1827*

Medicinal Qualities of Garden Plants.—Sir, Would it not be an improvement to your valuable Magazine, if you were occasionally to notice the medicinal qualities of some of our garden plants, &c. The leaves of the black currant, for instance, if dried in the manner of tea leaves, would make a pleasant beverage in the shape of an infusion or decoction, and prove very beneficial in cases of gravel, which is a complaint I think gardeners are much troubled with, probably from the effects of drinking hard beer, very common in the south-west of England.—*C. F. W. Fazeley, Nov. 20.*

Disease of the Anemone.—On reading the culture of the anemone in the *Encyclopædia of Gardening*, I do not observe any account of a disease which the anemones in my little garden have suffered from this year. The roots send up numerous strong leaves, higher than usual, and of an unnatural thickness in the stalk: the leaf itself is much curled, of a sickly green, and the under surface covered with minute tubercles. None of these plants have flowered. I think this is a disease purely vegetable, in other words, not produced by insects. May it not be the effect of old age? I should observe that the *A. coronaria* in its native climate generally grows in sandy tracts close to the sea. On the shores of Messina, in Sicily, I have met with it in great abundance.—*A. B. Warwick, July, 1826.*

Preserving Apples.—Mr. Gibb (p. 9.) would render a service to a numerous class in this latitude if he would inform us, in your Magazine, what variety of apple it is that he finds to resist the effects of frost.—*W. G. W. Liverpool, Nov. 21.*

A Tree, the young branches of which drop water, in a manner almost approaching to a shower, has been lately discovered in the interior of Brazil. (*Times, Dec. 22.*) Query, its scientific name?—*R. S.*

Vines.—In the gardens of the Earl of Sefton at Stoke, about six miles from Windsor, are said to be remarkably fine specimens of young vines. Can any of your readers say if there is any thing particular in their treatment?—*T. J. M.*

Scampston Elm.—Sylvanus would be glad to know if this variety of elm (mentioned in *Encyc. of Agr.*, § 7025.) is to be procured in the northern nurseries, as he has not been able to find it in the west of England, and has written to London for it without success?—We should be glad if Mr. Falla, our friend Mr. Pontey of Huddersfield, or some other Newcastle or Yorkshire reader, would attend to this query.—*Cond.*

Heating by hot Water.—In your useful Magazine (p. 186.) you give two plans for heating stoves by hot water. As I intend building one of that description, I shall be much obliged for some further particulars. I wish to have only one boiler, and should suppose that the pipes may be so laid into it that, by stopcocks, I might make each partition of any heat I

pleased. As I should like to have as complete a house as possible when I set about it, and as I make it a rule to employ the labourers and trades-people in my immediate vicinage, I would willingly pay something for an elevation and complete *working* plan for such a house; but, I think, you could not gratify your subscribers more than by having such engraved in one of your early numbers, with all the proper dimensions for different-sized houses clearly figured out on a large scale.—*B. M. H. Dec. 14. 1827.*

Plans of Flower-gardens.—As one of your subscribers, you would much oblige me, and no doubt many others, by giving plans of flower-gardens or parterres, something in the style of *fig. 75. p. 250.*, only less curved and cut out. I like the appearance of nursery-gardens, where flowers of sorts and colours are kept distinct and in masses. You, who visit so many gardens, must have seen a variety of parterres, and could readily draw them out, consulting always economy in execution, ease of access, and effect. Perhaps you would likewise number the borders or divisions, and specify what flowers would please both the sight and the smell, and how to manage the beds so that there might be a constant succession from spring till the close of autumn, which might readily be managed by forcing seeds or bulbs either in a hot-bed or forcing-house.—*Id.*

We recommend our correspondent to communicate with Messrs. Bailey (p. 375.) or Mr. Main. (p. 378.)—*Cond.*

ART. X. *Biography.*

WILLIAM SPEECHLY, gardener to His Grace the Duke of Portland, at Welbeck, in Nottinghamshire, was born at a village near Peterborough, in Northamptonshire, and was the son of a respectable farmer, who gave him a good education. He had a strong natural genius, and was remarkably industrious, employing all the leisure of his youth in drawing plans, delineating fruits and flowers, and engraving them on copper plates. He also had a taste for music, but he laid that aside at an early period of life.

His unconquerable predilection for the profession of gardening led him to begin his studies early in the gardens at Milton Abbey, now Earl Fitzwilliam's; from whence he removed to the extensive grounds of Earl Carlisle, at Castle Howard, in Yorkshire. How long he studied at each of these places; and how long he was head-gardener to Sir William St. Quintin, before he was recommended to the Duke of Portland in 1767, is not exactly known.

In 1771, through the kindness and liberality of his noble employer, he made a tour to view some of the principal gardens in Holland. Soon after this the large improved pine and grape stove was erected at Welbeck, from Mr. Speechly's designs, and under his own immediate inspection. In 1779 his *Treatise on the Culture of the Pine-apple* was published, which opened quite a new era in that department of horticulture, and laid the foundation for the improvements which have followed, in rapid succession, to the present time. The same may be said of his *Treatise on the Culture of the Vine*, which was published in the year 1789. The value to gardeners of these two books can only be estimated by a knowledge of the want of information at that epoch on the subjects treated of. In 1796 he published a second edition of his *Treatise on the Pine-apple*. After this he was engaged on some papers on domestic economy, at the request of Sir John Sinclair, President of the Board of Agriculture, which were to have been published in the *Transactions* of that Honourable Board; but the publication did not take place, and the papers were returned to him in 1800.

He then had began to write a *General Treatise on Gardening*, but the death of his younger son, who was established on an extensive farm at Woodborough Hall, caused Mr. Speechly to leave Welbeck and go to that farm, where he continued some years. During his residence there, he had the misfortune to lose his elder son, who died at the extensive nursery grounds of Withers and Speechly at Newark-upon-Trent.

Mr. Speechly's intense genius had led him into a course of agricultural experiments, on which he wrote several essays, and obtained the approbation and honorary medal of the Board of Agriculture. After this he gave up his farm, and retired to King's Newton Hall, in the proximity of which the only surviving branch of his family then resided, and whose removal, first to London, and then to a villa in Oxfordshire, caused Mr. Speechly to remove to the same neighbourhood. He died at Great Milton on the 1st of October, 1819, in the 86th year of his age, surviving Mrs. Speechly above two years.

During the retirement of Mr. Speechly, he digested his essays, and formed a small volume of *Practical Hints in Domestic Rural Economy*, a work of merit and usefulness.

Mr. Speechly was not a systematic botanist, but, as a kitchen, fruit, and forcing gardener, he was exceeded by no man of his time. He was strictly honest and honourable, modest, unassuming, cheerful, frugal, of domestic habits, and, though a practical gardener, yet having the manners of a gentleman.

It was his good fortune to be in the employ of a family who ever were, and still are, the most enlightened and liberal patrons of agriculture, gardening, and planting. By the extracts from the Sloanean Manuscripts in the British Museum, which are printed in the preface to the *Hortus Kewensis*, p. xii., it appears that the extensive collection of plants at Kew originated in a great measure in a gift from an ancestor of the present Duke to the royal gardens at Hampton Court in 1690.

It seems, by a letter and plan published in the second edition of the *Treatise on the Pine-apple*, that a regular correspondence subsisted between Mr. Speechly and his favourite pupil, Mr. Joseph Thompson, then gardener to the late Lord John Cavendish, in Northamptonshire. When Mr. Speechly left Welbeck in 1801, he recommended Mr. Thompson as his successor; and the present state of the extensive forcing-houses, the botanical arrangements, and the general improved state of Welbeck grounds, shows that Mr. Speechly's confidence in his successor was by no means misplaced.—*H. A. S. August, 1826.*

ART. XI. Obituary.

DIED, at Mount Pleasance, near Dumfries, on the 22d of August, Mr. W. Hood, nurseryman, in the 65th year of his age. The deceased was one of those unobtrusive characters who require to be known, and that intimately, before their moral qualities can be duly appreciated. But his worth was sterling, notwithstanding; his feelings warm, affectionate, and friendly; his charity and inoffensiveness alike proverbial; and, without saying more, his character may be summed up in the following expression, used and responded to at his numerously attended and respectable funeral: Mr. Hood, I am certain, never, to his knowledge, wronged a man of a penny, or spoke an evil word of a single human being. (*Dumfries Courier.*)

THE
GARDENER'S MAGAZINE,
MARCH, 1828.

PART I.
ORIGINAL CORRESPONDENCE.

ART. I. *Some Account of the Dutch Manner of Forcing, as practised in the Kitchen-garden at Hylands, near Chelmsford, the Seat of P. C. Labouchere, Esq. F. H. S.* From Notes made there on November 7. 1827.

THE park and the house at Hylands have been greatly improved, within the last few years, by the present spirited and wealthy occupier; but the peculiar interest of this place to a horticulturist, arises from the display of the Dutch mode of forcing in the kitchen-garden. This department is conducted under the direction of Mr. Francis Nieman, a gardener brought over from Haarlem by Mr. Labouchere, for that purpose, in 1824. Mr. Nieman does not meddle with the theory of gardening, and does not at all approve of writing books on his art; but we owe it to him to say, that he showed us every thing which we desired to see, and answered every question we put to him with the greatest patience. He is a most successful practical gardener, wholly absorbed in, and devoted to, his business, and assiduously attentive to order and neatness, even in the most obscure parts of his forcing-ground and working-sheds.

The flower-garden and pleasure-ground department at Hylands is under the direction of Mr. John Smith, a well-informed young man, who understands his business. Every thing under his care is in the best order.

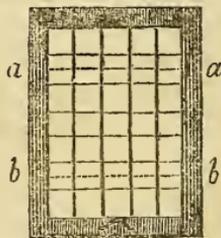
With the exception of the pine-apple, most of the fruits and kitchen crops of British gardens are cultivated by Mr. Nieman. The mode in which the vine and peach are forced

in pits and low houses in Holland, has been very well described by Mr. Lindegaard (*Hort. Trans.*; *Encyc. of Gard.*, § 2657. 2665. and 2666.; and *Gard. Mag.*, vol. i. p. 168.); but the mode in which cabbage lettuce is brought to the highest perfection during the winter and spring months has not, as far as we know, been described in any publication. Something of the same kind, we understand, was practised in the garden of the late Duke of Portland, at Bulstrode, by Mr. Rangelcroft, who grew cabbage lettuces in frames, on warm dung, all the winter, and had them of a large size; but no details of his practice have been published.

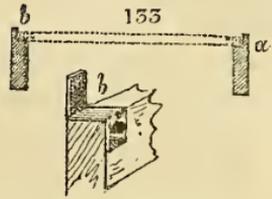
The leading features of the Dutch mode of forcing are, the substitution of dung heat for fire heat, the use of pits and frames instead of higher structures, of leaf mould instead of loamy soil, and of reeds and mats for coverings. There can be no question of the superior safety of dung heat to that from smoke-flues, or even steam; though, where dung cannot be had in sufficient quantity, a very near approach to that safe, steady, and mild mode of heating will be found in the recently invented hot water system. Pits are cheaper in the first erection, and heated at less expense than large structures. Leaf mould, being in great part oxygenated carbon, which is known to absorb both water and gases, is not so apt to generate damp as loam, and is therefore greatly to be preferred for winter forcing. The mode of covering by reeds or thatch, one of our correspondents, of great skill and experience, has already strongly recommended. (p. 167.)

As minor features may be mentioned, a peculiarity in the construction of hot-bed frames and sashes, and the use of frames covered with oiled paper, as screens to guard against the vapour of rank dung, and protect from violent heat. The hot-bed frames are 9 ft. 6 in. long, and 6 ft. 3 in. wide: each frame has two sashes; those intended for lettuces are divided into 30 squares, and those for other crops into 42 squares. The top and bottom rails and side styles are of wood, but the glass is not glazed into bars, as in British hot-bed frames, but into stout leaden lap, in the manner of old cottage windows, with four iron rods inside, to which the frame of lead lap is fastened, the size of the panes being 10 in. by 11 in. for lettuces, and 10 in. by 9½ in. for other purposes. (*fig.* 132.) More light is admitted through these sashes than through sashes with wooden bars, a great advantage in the dark days of winter, and it is easy to shade in days of bright

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sunshine. The frame, or box, is of equal depth at the back, front, and sides, viz. about 18 in. : along the back is a rebate cut out of the solid plank (*fig. 133. a*); and in front, in the centre of each light, is a stop of iron (*b*) to retain the sash in its place, when air is given behind by inserting the wedge in common use between the top rail and the ledge (*a*), or when the sash is raised high, to admit of watering or otherwise working among the plants, by means of a



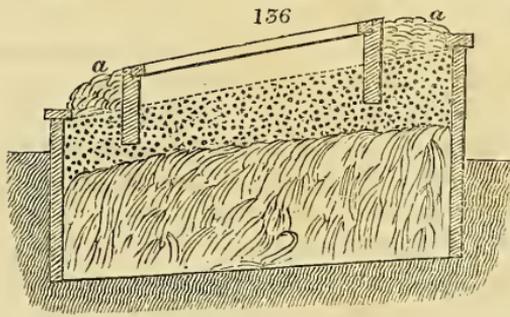
notched prop. (*fig. 134.*) The use of the ledge rising behind the rebate is, when air is given, to prevent the wind from forcing the external air into the frame. The frame and sashes are made to slope to the sun, by sloping the dung-bed. When, at any time, the frame sinks too deep, it is raised by means of an iron hook. (*fig. 135.*) In order that a roll of reeds may be spread out lengthwise on the lights, two cross strips of wood are nailed on the outside of each light, at a short distance from the top and bottom. (*fig. 132. a and b*) The dung-beds on which these frames are placed, are formed in pits about 2 ft. wider than the frames. These frames are fenced with boards, for the purpose of keeping the dung-bed in its proper place. (*fig. 136.*) In severe weather in winter, the frames are protected from frost by linings of leaves, spent dung, or other littery matter. (*fig. 136. a*) Melons, cucumbers, lettuces, kidneybeans, radishes,

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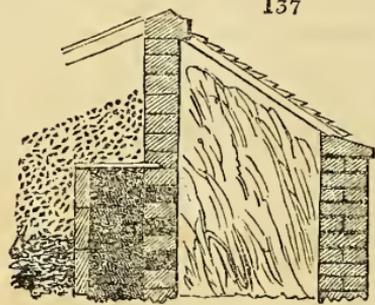


purslane, carrots, and cauliflowers are grown in these frames in the following manner : —

Cucumbers and Melons are prepared for, according to the usual routine, in January and February; and the first and second crops are removed from the earliest frames by the beginning of September. The only feature in the management of these crops is, that the plants are scarcely, if at all, pruned, and that the melons are grown wholly in vegetable mould. The crops are abundant. Cucumbers are or may be cut every month in the year, and the first melons usually in the beginning of May. Mr. Nieman has several of M'Phail's pits, in one of which he has at this time cucumber plants



in an advanced state. These pits are built in other walled pits, and the linings neatly covered with shutters, which are hooked to the coping of the inner pits, and thus not only throw off the rain, but even, when the dung sinks, keep the wall of the inner pit warm to the very top. (*fig. 137.*) To keep down damp, the soil about the plants is covered with fragments of oiled paper. Mr. Nieman informed us that this was the use he applied the paper to, after it had been used as a screen in the forcing of peaches, as will afterwards be described. From what we saw, and could learn from Mr. Nieman, we think it may be said that the Dutch do not surpass the English in the culture of the cucumber and melon.



Lettuces. — In the first week of September, the first crop of melons is removed, the mould thrown to one side, the dung stirred up a foot or more in depth, and sometimes a little fresh dung added. The mould is then returned, and the bed being smoothed, one lettuce plant of a very small size is placed under the centre of each pane of glass (or 30 in one light), and so as to be within 3 in. of the glass. The reason for putting the plants under the centre of the panes is, that the water of condensation which collects on the lead lap, may drop between the plants and not on them. At first planting, however, five or six plants are placed in the upper part of the bed under the lap, and remain there for a few weeks as a reserve, in case of vacancies in the permanent plants. Very little air is given to these plants, and no water whatever. The vegetable mould is black, of a crumbly, rough, dry appearance, and seems to keep away damps from the leaves, by absorbing moisture in the way rotten granite, oatmeal, coal ashes, and other substances are known to do. (*Encyc. of Gard., § 3055.*)

Various plantations of lettuces are made in the same manner, till the last day of October; and it was observed to us, by Mr. Nieman, that the distance of two days between plantations made in October, frequently occasioned the difference of four or six weeks between the times of their maturity in spring. At this time (November 7.), there are in the melon ground at Hylands thirteen lights, each containing thirty plants of lettuces; the first two or three lights were nearly ready to cut, and the last four lights consisted of plants with not more than three or four leaves each. Mr. Nieman assured us that he would

cut lettuces every day till May next, or till he had them in the open air; and that those in January and February would be as large, firm, tender, and succulent, as the best that can be grown in the open air in summer. In short, he stated that, in Holland, larger and better lettuces were grown in frames in winter, than in the open air in summer. The sort of lettuce used, Mr. Nieman calls "the Dutch Forcing;" it seems to us like the Union Cabbage Lettuce; but the kind seems of no great consequence. To any gardener willing to try the plan, nothing more need be said, except that no warm linings are added during the winter, but only litter or leaves (*fig. 136. a*); that the frames are powerfully covered up during nights with reeds and mats, and in very severe weather almost for entire days; that in very bright sunshine the glass is shaded by the spray of beech or hornbeam, which is considered preferable to mats, as moderating the brilliancy of the sun's rays, and at the same time admitting light. As before mentioned, no water is given during the whole course of culture. The plants are always close to the glass, and the space outside the frame always kept covered with vegetable mould to the height of the top of the frame without. (*fig. 136.*) Most gardeners would be afraid of the leaves damping off, but this never happens. Should any leaves happen to decay or become mouldy, they must be carefully removed without loss of time.

Carrots and Radishes. — Several sowings of these are made during the winter, as they may be expected to be wanted, on old melon beds, prepared in the same way as for lettuces, but with rather more warm dung. The first sowing is made in the last week of September, along with a few radish seeds, which were now making their appearance. By means of other sowings in hotbeds, and six or seven sowings in the open garden in January, February, March, April, May, August, and September, Mr. Nieman draws young carrots about the size of radishes every day in the year. No carrots of a larger size are ever used in Mr. Labouchere's family, except for the servants. The sorts used appear to be a good variety of the Early Horn. The plants get no water during the whole winter, and are in every other respect treated like the lettuces.

Kidneybeans. — An old melon bed is prepared in the last week of August for the first crop, the fruit of which was now setting, and in part ready to gather. As the kidneybeans require a good deal of heat, a bed, composed in great part of fresh dung, is made up in the second week of November for

the second crop, which comes into bearing in six weeks, or about the first week of January, and, by cutting down, is kept in a bearing state till the crop in the open air comes in succession. The sort used is the Small Early White, apparently a hybrid between what is called the Dutch Runner and the Early White Dwarf. No water is given till the spring months, and very little then.

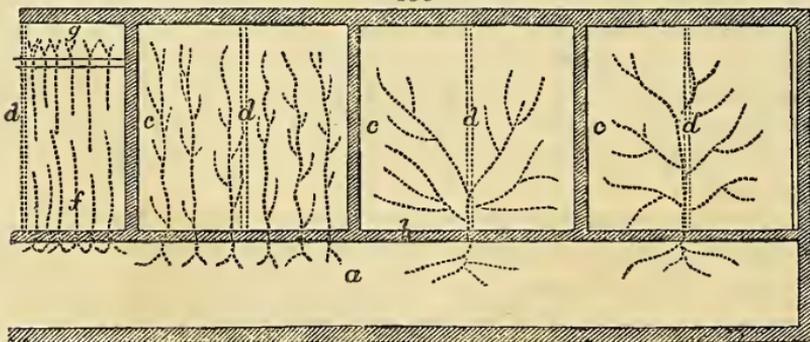
Cauliflowers.—A bed of half-spent dung, or dung and leaves, is made up in the last week of December, covered with vegetable mould, and about a dozen plants inserted under each light; they do not grow much till February, but afterwards they increase rapidly, are thinned out to six in a light, and are fit to cut in April. They get no water till March.

Peas.—Mr. Nieman has still peas to gather in the open air, and he has a quantity in full bloom, in the front of low peach houses, on the beds of dung which supplied the heat to the house during the preceding spring. If November prove a clear month, he may gather a dish on the first week of December, as he did last year: if he should be unsuccessful, the loss is only the seed and the labour. Early peas are obtained by sowing in frames or beds prepared as for the cauliflower. Mr. Nieman generally gathers his first peas in April. The sort he uses appears to be what is called the Early May. (p. 124.)

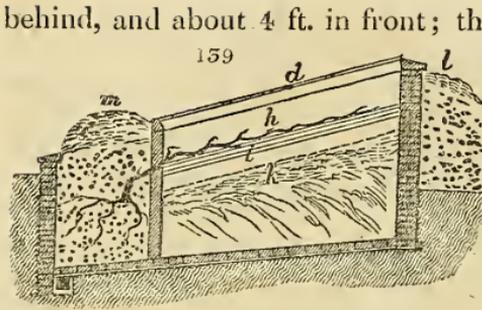
Small Salading is grown by Mr. Nieman in the usual manner, and potatoes, asparagus, seakale, tart rhubarb, chiccory, parsley roots, mint, tarragon, and other herbs, are grown or forced much in the same way as they are in British gardens. Purslane is grown in the melon beds, on the spare spaces at top and bottom, and removed as the vines extend to these spaces.

The Pits for forcing Peaches, Apricots, Vines, and Raspberries (figs. 138. and 139.) are thus constructed:—They are

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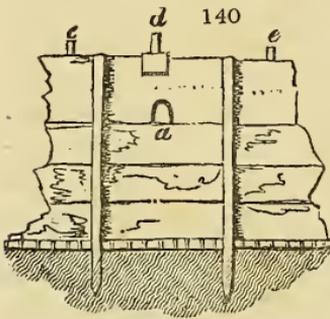


about 8 ft. 6 in. wide, surrounded by a brick wall, 5 ft. high



on a slope, so that the back wall is between 1 and 2 ft. higher than the front wall. A space in front of the pit (*fig. 138. a*) is divided from it by a boarded partition (*b*), and is destined for containing the mould in which the

vines and peaches are grown. This partition is of boards rather than of bricks, for the more easy transmission of the heat from the dung to the earth. The main body of the pit is divided by cross walls of one brick in thickness (*c*), into divisions of 8 ft., or two lights each. In the centre of the boarded partition, a board about 2 ft. by 18 in., with a gap on its under edge for the stem of a tree (*fig. 140. a*), takes out; and this



board, and also the coping behind, have a notch for the fitting in of a movable rafter, on which to rest the two sashes which cover each division. (*d, figs. 138, 139, and 140.*) There is also on the boarded partition an iron stop for each sash, as in the hot-bed frames. (*figs. 133. b, and 140. e*) Raspberries, at Hylands, are planted inside of the pit, in a border about

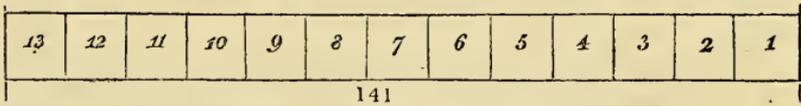
18 in. wide, for that purpose; the stems of the plants, when the latter are very vigorous, extend the width of the pit. Where raspberries are to be forced extensively, the whole front of the pit, to the depth of 18 in. might be made movable, in order to admit a continued bed of stems (*fig. 138. f*); and, as the wood of raspberries will not reach more than half way to the back of one of the main divisions, a temporary partition, for the mould of a second set of plants, may be formed along the back of the pit. (*fig. 138. g*) The trellis on which the trees are trained is formed in the usual manner, and placed 18 in. under the glass (*fig. 139. h*); and close beneath this trellis is placed a frame, the size of the division, covered with oil paper. (*fig. 139. i*) The interstices between this paper frame and the walls of the pit being carefully caulked with tow or wool. Moss would do, but it is said to be a great harbour for vermin, such as ants, which would easily crumble it to pieces. The use of these paper frames is to prevent the steam of the dung from coming in contact with the peach, nectarine,

or apricot trees, and to reflect back the heat of the dung where it is too violent; but they are not used at all for the vines or raspberries, as the steam of dung, at least such as arises through a stratum of tan or leaves (*fig. 139. k*), does these plants no injury. The paper used is what is called fine cartridge, but unsized printer's demy will do. The present price of printer's demy is 1*l.* 7*s.* per ream, and a ream consists of 480 sheets, each 1 ft. 10 in. by 1 ft. 5 in.; so that the panes of the frame should be made of the latter dimension. They are oiled with common linseed oil boiled, being previously pasted on with a paste made of starch boiled up with a little glue.

Peaches, Nectarines, and Apricots. — The earliest crops of these at Hylands are obtained from pits, in which the trees are placed at different periods, from the last week in November, to the first week in January; the second crops are obtained from small houses of the kind described by Mr. Lindegaard (*Encyc. of Gard.*, § 2656), and to be afterwards noticed; the third successional crops are obtained from larger houses, built by Mr. Atkinson in his usual manner. The pits have already been very well described by Mr. Lindegaard (*Encyc. of Gard.*, § 2665), and it is rather surprising that they have come so little into use in England. No gardener, we are persuaded, can visit Hylands without being convinced of their very superior excellence for early forcing.

In commencing the preparations for forcing peaches in pits, a division is made choice of which has an unoccupied division on each side of it, in order that when first the one of these unoccupied divisions, and then the other of them shall be occupied, they may act as linings to the middle one. Two loads of littery dung, as it comes from the stables, with a proportion of tree leaves fresh gathered, is found sufficient for one division; it is thrown in, levelled, and covered with a foot of tan (*fig. 139. k*), the paper frames (*i*) after a few days are laid on, caulked tightly, and over them is placed the trellis. A tree of a sufficient size to fill the division is then taken from the garden wall; and laid down on the trellis with its roots through the stem hole. (*fig. 140. a*) If the stem of the tree and roots are flexible, it is laid down on the trellis as it grew against the wall: but if the stem and roots are old and rigid, the tree is turned on its face, and the side which was next the wall, presented to the light; this indeed is the general practice. The shoots being tied to the trellis, and the roots covered with vegetable mould, mixed with a little loam, the movable rafter is put in its place, and the sashes put on, and

abundance of air is given day and night, and some water to the roots to settle the earth about them. The branches are frequently sprinkled with water by means of a hand syringe. The sashes are covered every night with reeds; shaded during bright sunshine with branches of beech or spruce, or with pea-sticks; and, when severe weather sets in, a thick lining of leaves is formed round the back and sides of the pit (*fig. 139. l*), and over the roots (*m*), not for the purpose of producing heat, but of keeping in what is already there. Not more than one tree is put to forcing at one time; because, the produce being all ripe at once, and not of a nature to keep long, it is found better to put them into forcing, so as to procure successional supplies from one tree at a time. The first tree is generally put down as soon as the leaves drop in November or December, and one every ten days afterwards till the beginning of January, observing to fill the divisions alternately with the first planted trees, in order that the succeeding trees may always act as linings to those which have preceded them. Thus a pit for twelve trees (*fig. 141.*) would be planted in



the order, 2. 4. 6. 8. 10. 12., 1. 3. 5. 7. 9. 11. 13. From trees which cover 10 square feet, Mr. Nieman has gathered 150 fruit. His first apricots are generally ripe in the end of April, or beginning of May; his first peaches or nectarines in the second week of May; and he has a succession of both till the fruit of the trees on the open wall come into use.

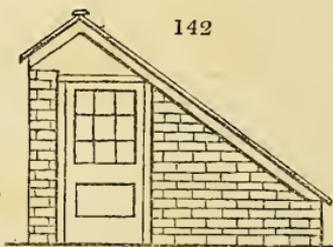
Scarcely any pruning is given to the trees when they are tied to the trellis, and no extraordinary care is taken with their roots in taking them from the wall. Mr. Nieman has had a full crop from trees which have been planted with only three large stumps, and scarcely any fibres; such stumps, however, in the rich mould, warmed through the boarded partition by the dung in the pit, produce fibres, which, in the course of the season, attain the thickness of the finger, and many feet in length. When the leaves drop from the trees, the latter are removed, and replaced against the wall in the room of others taken to the forcing-pit. Thus, all the trees of a peach wall are taken to the pit and forced in rotation, and this occasional removal is found of advantage to them by moderating the vigour of their shoots.

The simplicity, economy, and especially the certainty, of this plan of forcing, very strongly recommend it. The dung

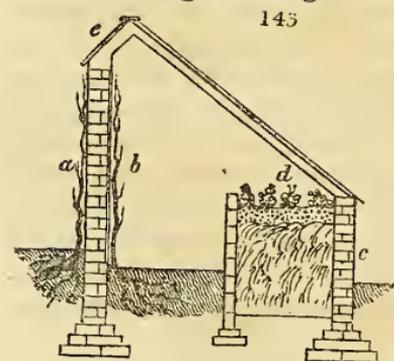
being once laid in, nothing is ever done to it till it is taken out ; no linings are made on purpose for keeping up the heat, not much water is required, and in short the routine culture is nearly reduced to covering at nights, shading in bright sunshine, and giving air. One point of practice only remains to be mentioned ; viz., that when the heat begins to decline, the paper of the frame is torn in pieces, for the frames cannot easily be taken out without injuring the trees, in order to admit the heat to ascend directly from the tan to the leaves and fruit. A thermometer is not kept in these pits by Mr. Nieman ; but, judging from appearances and what he states, the temperature is kept rather lower than in British peach houses. No particular sorts of peach, nectarine, or apricot are preferred for this mode of forcing ; but the Double Montagne and Noblesse are considered the best peaches for this purpose.

Cherries of the May Duke kind are frequently, and plums, apples, and pears, occasionally, forced in Holland in the same manner, and Mr. Nieman informs us with perfect success. In Holland he generally gathered his first cherries in the second week of April.

The second Crop of Peaches at Hylands is brought forward in a low steep-roofed house (*fig. 142.*), about 25 ft. long, 8 ft. wide, and 8 ft. high in the highest part. The back and front walls are of brick ; and on the external surface of the back wall (*fig. 143. a*) are trained cherry trees ; on its internal surface (*b*), peaches, nectarines, or apricots. Within the front wall of this structure (*c*), a pit is formed for containing a dung-bed, on which strawberries (*d*), taken



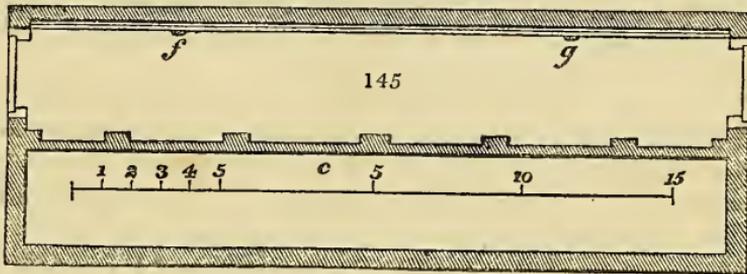
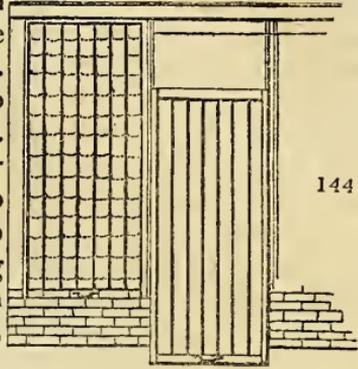
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up with balls or turned out of pots, are planted in leaf mould, after the dung and leaves on which they are placed have somewhat subsided. The sorts are the Roseberry and Red Alpine, and it is estimated that the produce is double what it would be if the plants were kept in pots. The glass roof of this house is in single sashes (*fig. 144.*), which are movable, and applicable to various other purposes. This glass is regularly covered every

night with mats, which remain rolled up during the day, on the portion of opaque boarded roof (*fig. 143. e*) which serves as a coping to the back wall. Two trees (*fig. 145. f, g*) are considered sufficient for the wall of this house, and no vines or other trees are trained up the rafters. The details of forcing do not differ from those of British gardeners; the dung-bed in front, and the sun when he happens to shine, supply the heat, and the operator does what he can to



retain it by powerful coverings at night, and, in severe weather, during great part of the day.

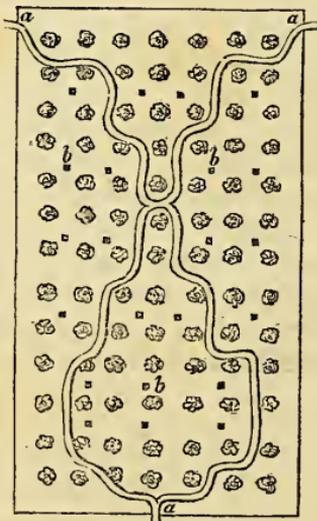
Vines.—These are planted in the front border (*fig. 138. a*), and drawn through holes in the boarded partition; they remain there several years, producing crops every year. No paper frames are used, as in forcing peaches: the rest is routine. The soil and plants are then renewed; the plants in the following very expeditious manner:—Several vines of the sorts used in forcing, which are only two, the Dutch Sweetwater, and their Frankendale, which seems to be our Hamburgh, are kept as stock plants against a wall, trained in the Dutch manner, *i. e.* with vertical shoots trained from one horizontal shoot at the bottom of the wall. (*Encyc. of Gard.*, § 2966.) Small wicker baskets are made about 1 ft. in diameter, and 18 in. in depth; one of the vertical shoots is brought down from the wall, and drawn through the side of the basket near the bottom, twisted just within it, and brought up and tied to a stake. The basket is then filled with vegetable mould firmly pressed to the shoot, and a sufficient number of baskets being so prepared, the whole are surrounded and covered to the depth of a foot or more with half-spent dung. During summer they are liberally supplied with water; and, in consequence of the heat of the dung and supply of moisture, by the 1st of

November the baskets are filled with roots, which protrude several inches on every side. The layer is now cut off, and the plant and basket with all its roots removed, and planted where it is finally to remain without taking off the basket. Plants so obtained will bear an excellent crop the first year, and unless the blossoms have been pinched off will have borne several bunches as a layer, so that no fruit has been lost, and plants such as could not be purchased obtained. Mr. Nieman was at this time removing some plants so produced; and we must confess, the quantity and vigour of their roots far surpassed any thing we had ever seen. When young plants are not wanted, the stock trees are trained to bear fruit in the usual manner, and the fruit is generally ripened by placing sashes against the wall, by protecting with reed mats at night, or by bringing down the branches, and training them under the glass of a common hot-bed frame.

Raspberries.—The Red Antwerp is found more suitable for forcing than the White, the fruit of the latter being tender, and apt to break in handling. A very good plan is, to have a narrow pit on purpose for raspberries; to plant the first division in January, which will produce ripe fruit in the first week of April, and the rest in succession. No paper frames are required, and no water is given but once after planting.

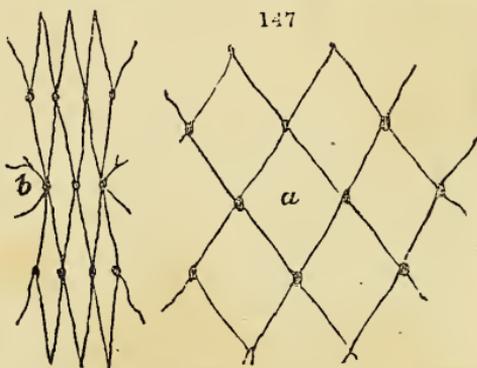
Cherries are not forced at Hylands, but there is a cherry garden, of about a quarter of an acre, which deserves notice. The form is nearly a parallelogram (*fig. 146.*), about twice as long as it is broad; it is surrounded by a wire fence 10 ft. high, the texture being such as will exclude small birds; that is, each mesh is 2 in. high by 1 in. broad. The trees are standards, planted in the angles of squares, and their branches are kept in a horizontal position by being tied down to stakes. A gravel walk enters at one end, passes up the middle, and goes out at the other end. Perhaps a winding walk (*a, a, a*) would have a better effect. In the intervals among the trees are planted gooseberries, currants, raspberries, and strawberries, of different sorts. The cherries are of various kinds, but chiefly May-Dukes, White Hearts, and the Black Circassian. At regular distances all through the area of this

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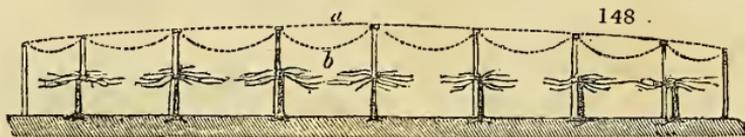


plot, wooden boxes, as sockets for posts (*b*), are fixed in the ground; and, when the fruit begins to ripen, a net, of the kind used in pilchard fishing, and made at Bridport, in Dorsetshire, the meshes of 2 in., is drawn over the whole cherry garden, fastened to the top of the wire fence by hooks which are fixed there, and supported from the trees by the props placed in the sockets. These props are 14 ft. high at the sides, and gradually rise to the middle of the garden, and they have blunt heads, in order not to injure the netting. The netting necessary for covering this space, which is 80 ft. by 220 ft., is in two pieces, each 100 ft. by 150 ft.; it is put on in the following manner: — One piece is spread out immediately within the wire fence, and a number of men with poles carry it over the tops of the trees and posts, after it is fastened to one side; then they fasten it on the other, and so on till the whole is completed. The separate divisions are then joined together, which thus form one entire netted roof, giving the garden a very singular and yet new and agreeable appearance. During rain or dewy evenings the net is tightened, or stretched to its utmost extent (*fig. 147. a*), and forms a grand vault over the whole

cherry garden (*fig. 148. a*): during sunshine, or when the weather is dry, it is slackened (*fig. 147. b*), and forms a festooned vault supported by posts. (*fig. 148. b*) It is advisable to tan the net every year with oak bark, which adds greatly to its durability.



Were the object of this cherry garden merely to protect the fruit from birds, training the trees on espaliers, and apply-

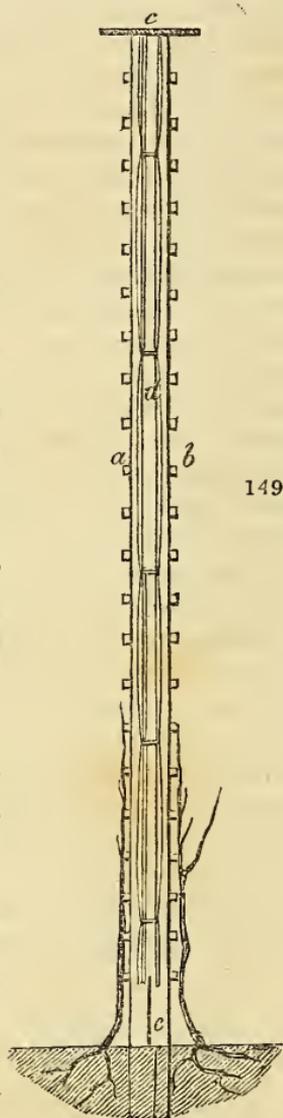


ing nets, as is done against walls, would be an easier and cheaper mode; but the cherry garden at Hylands is intended as a place of enjoyment, where ladies and gentlemen may wander about, and help themselves from the trees and bushes. Growing fruit trees on arched trellises over walks, the sides of such trelliswork being open to admit air to flavour the fruit,

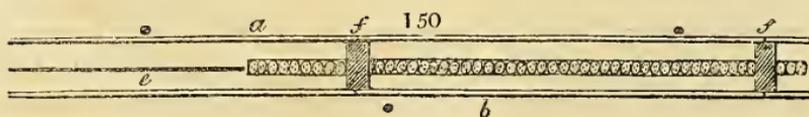
has been tried in some places, and, by means of nets, cherries, damson and other plums, gooseberries, and currants, are preserved till November.

Reed Walls and Screens are a good deal used by Mr. Nieman. What is called a reed wall (*figs. 149, 150.*) may be described as 10 ft. high, and consisting of a double trellis (*a b*), composed of horizontal laths about 8 in. apart, a coping board (*c*) 9 in. broad; the reeds placed end-wise within the trellis (*d*), and supported about a foot from the ground, to keep them from rotting; this interval of a foot being filled up with slates, placed on edge (*e*). The trellis rods are nailed to posts (*fig. 150. f*), and, by taking off a few of these rods on one side, the reed mats can be taken out and renewed. Russian mats would no doubt answer very well, and last a long time, and they might be taken out with still less trouble. Straw mats (*p. 167.*) would also do, where reeds could not be got; and heath, as being of a dark colour, and very durable, would make the best of all structures of this kind. Mr. Nieman finds peaches, grapes, and other fruits, ripen just as well on these structures as on brick walls.

The reeds of Holland are stronger than British reeds, and commonly last in such walls for ten years. Mr. Nieman imports his coverings from Holland, and finds them more durable, and not much dearer, than those of England. Gardeners may procure British reed mats by applying to Robert Resker, reed mat manufacturer, Writtle, Essex, who manufactures mats of any size to order, at $1\frac{1}{4}d.$ per square foot. Any



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respectable London nurseryman will procure for a country

gardener, either British or foreign reed mats, of any description, through the regular channels, and at the regular prices.

The trellis against reed walls should consist of horizontal wires, rods, or laths, when vines, currants, or trees are to be trained vertically; and of vertical wires or rods when trees are to be trained in the fan or in the horizontal manner. The most generally useful description of trellis is that where the rods are vertical, as they are in the reed structures at Hylands.

The common brick walls at the garden at Hylands are, for the most part, trellised, Mr. Nieman considering the trees less liable to injury from extreme heat, and the fruit likely to be better flavoured, when the branches are kept a few inches from the wall, and the fruit in consequence surrounded by a free circulation of air.

Grapes and Peaches are also grown at Hylands in the small Dutch houses already described (p. 394.; and by Mr. Lindegaard in *Hort. Trans.*; and in *Encyc. of Gard.*, § 2666.), heated by a bed of dung in front. They are also grown in English houses, ventilated on Mr. Atkinson's plan. (*Gard. Mag.*, vol. ii. p. 201.) The vines are grown, one plant to each rafter, and one shoot from each plant, which is spurred in. When the spurs get too large and unsightly, they are cut off close to the shoot in the manner said to be invented by a Mr. Lawrence, described as practised by Mr. Squib (p. 245.); and, after a number of years, the vines are rooted out, but not more than one or two in a season, and replaced by young plants, procured as already described; or, if of new sorts from a nursery, planted a year or two before those they are to succeed are removed. By this mode of training the vines, there is always a space of a few inches in breadth in the middle of each sash, through which light is freely admitted, and consequently strawberries and other plants are grown to greater perfection, and both grapes and strawberries better flavoured. Peaches are grown in the manner common in English gardens, both under the glass and against the back wall; but Mr. Nieman has a great objection to peach houses in which the sashes do not take off, that being necessary, according to his experience, and we believe to that of most gardeners, to the proper colouring of the fruit. One vinery for early forcing is fitted up for heating on the hot water system, under the direction of Mr. Atkinson, by our correspondent Mr. Barrow (p. 422.), which Mr. Nieman thinks favourably of, having a great dislike to the use of fire heat in every description of culture.

On the whole, much may be learned by a British kitchen-gardener, from an inspection of the Dutch practices at Hylands.

One thing we should insist on, if we were able to keep a proper garden establishment, viz. large succulent cabbage lettuces, brought to table every day during the winter season; another thing is, all early forcing conducted in pits; a third, the entire disuse of flues, and the substitution of dung, leaves, tan, or hot water; and a fourth practice, the covering of all descriptions of glass frames or roofs in the kitchen-garden with straw or reed mats.

ART. II. *Outlines of Horticultural Chemistry:—Manures.*
By G. W. JOHNSTON, Esq. of Great Totham, Essex.

(Continued from p. 272.)

I SHALL now proceed to consider manures; a class of bodies of the first importance to the cultivator of the soil, yet of the economy of which he is generally most ignorant, inasmuch as that their judicious employment requires considerable chemical acquirements. Every substance capable of increasing the fertility of a soil, when incorporated with it, is a manure; hence, the earths, when applied to regulate its retentive powers, are actually manures.* Manures are animal, vegetable, and mineral; they *directly* assist the growth of plants, 1st, by entering into their composition; 2dly, by absorbing and retaining moisture from the atmosphere; 3dly, by absorbing the gases of the atmosphere; 4thly, by stimulating the vascular system of the plants. Manures *approximately* assist

* If the above definition and subsequent characteristics of manures are correct, I cannot perceive the grounds on which Agronome considers it "false philosophy" to rank common salt as one of the class. According to his own experience, "it destroys weeds and worms;" "it enters into the constitution of certain plants;" "it hardens the straw;" "it makes the grain plump." If these results do not constitute the substance effecting them a manure, all our agricultural writers and philologists are wrong in their definitions. I am glad, however, to read that Agronome confines his differing with me only as to the meaning of a word; he says, "I have witnessed some extraordinary good effects from the application of salt;"—did its most strenuous advocates ever see more? He annually "uses great quantities of salt;" may the community of agriculturists profit by his example! Yet, let it be observed, in a prior communication (Vol. II. p. 306.), Agronome states that salt is *only* good for killing weeds and worms. One sentence in his last communication renders refutation needless. "I could fill," he says, "several sheets on that side of the question" (viz. its entering into the constitution of plants, and its beneficial influence), "but am engaged at present on the opposite side." In a future number, then, we may anticipate that he will still more cogently confute himself.

vegetation : 1st, by killing predatory vermin and weeds ; 2dly, by promoting the decomposition of stubborn organic remains in the soil ; 3dly, by protecting incumbent plants from violent revolution of temperature.

All these properties seldom, if ever, occur in one species of manure, but each is usually particularised by possessing one or more in a superior degree. That is the most generally applicable manure that is composed of matters essential to the growth of plants ; the chief of these are carbon, hydrogen, and oxygen, therefore all animal and vegetable substances are excellent manures. It would evidently be of great benefit, if every plant could be manured with the decaying parts of its own species ; the ancients made this a particular object in some parts of their agriculture. We read that those vines were the most fruitful, which were manured with their own leaves and prunings and the skins of expressed grapes. (*Crescentius Agric.*, § 2. c. 6.) This rule might be so far followed, as that the stems of potatoes, peas, &c., could be dug respectively into the compartments where those crops are intended to be grown in the following year.

The following table shows the relative constitution of common stable manure and our usual crops :—

<i>Stable Manure.</i>	<i>Crops.</i>
Carbon, } Hydrogen, } Oxygen, } Nitrogen, - - } Carbonate of lime, } Carbonate of soda, } Benzoate of soda, } Muriate of potash, } Muriate of soda, - } Sulphate of soda, } Sulphate of potash, } Magnesia, - } Phosphate of lime, } Oxide of iron, - } Alumina, } Silica, }	<p>These are chief components of all plants.</p> <p>In some vegetables.</p> <p>In almost all plants.</p> <p>In cucumbers, garlic, &c.</p> <p>Perhaps in all plants.</p> <p>In cucumbers, garlic, &c.</p> <p>In all corn, and many other plants.</p> <p>Potatoes, onions, &c. &c.</p> <p>In most plants.</p> <p>In most plants.</p>

Stable manure, and for the same reason every other manure composed of animal or vegetable remains, is evidently valuable to plants, by affording them such matters as they are composed of. But this is not the only reason that manures are beneficial ; for in that case mere decayed parts of their own species should be the most fertilising applications. There is no doubt that plants are essentially benefited by such applications ; but why do potatoes, for example, grow more luxu-

riant on ground manured with sprats, than on that manured with the dung of horses, and both these superior to the same crop^s grown on a plot manured with the decayed parts of its own species? Apparently, because the manures mentioned decompose with a rapidity exactly proportioned to the order of benefit. Sprats decompose, and their parts become soluble and capable of intromission, first and most rapidly; then the dung of animals; lastly, the vegetable remains. All the less solid animal matters decompose with greater rapidity than vegetable matters: hence the dung of such animals as are carnivorous is the most prompt in benefiting vegetation; witness night soil, pig's dung, &c.; but such manures are not the most permanent. Hassenfratz manured two portions of the same soil, No. 1. with a mixture of dung and straw highly putrefied; No. 2. with a similar mixture, newly made. He observed that during the first year the plants in No. 1. produced the best crop, but the second year (no more dung being added) No. 2. produced the best crop; the result was the same the third year, after which both seemed alike exhausted. (*Ann. de Chimie*, xiv. 57.) The same chemist found that a soil manured with wood shavings did not, during the two succeeding years, produce a superior vegetation than the same soil without any manure; the third year, however, it was better, nor was it until the fifth year that it reached the maximum of fertility. The site of a wood-stack and the newly cleared lands of America are eminently fertile, from the gradually decomposing vegetable remains they contain.

These facts and observations teach us that the most prompt manures are the reverse of being economical: vegetable remains, incorporated with a soil, will insure an average produce during several years; animal matters and dungs highly putrescent are powerfully but transiently beneficial. Putrefaction is evidently the means of rendering these substances available to plants; hence thoroughly decayed stable manure is usually employed by gardeners, as being of immediate benefit, admitting of clean husbandry, and as economy is not in private establishments the general presiding genius of the gardens. If stable dung or other manure is allowed to putrefy in an unenclosed heap, the loss is immense; all the gases which pass off during decomposition, all the soluble matters which drain away, are highly nutritious to plants, as has been proved by Davy and others. If the decomposition is thus allowed to proceed, until the heap becomes a saponaceous mass, the loss cannot be less than 50 per cent. Notwithstanding all the reasoning of chemists, however, putrefied

dung will continue to be used; it admits of clean workmanship, with less labour, and insures a good immediate crop: to prevent loss as much as possible, therefore, the dung-heap should be in a brick cistern, and covered over with earth at least 9 in. deep, with a well at one corner to retain the drainage, which, from time to time, should be returned over the heap.

The chief component of plants is carbon, and we shall not be far wrong if we estimate it as constituting 50 per cent. of every vegetable; it is the decayed organic remains of the soil which supply a considerable proportion of this to the growing plants. It is a subject of debate among chemists, how the carbon of manures is imbibed by plants. Carbon, say they, is insoluble, and experiment has demonstrated that the roots cannot absorb it in a solid state. Sennebier, having observed that water impregnated with carbonic acid, when applied to the roots of plants, was beneficial, concluded that the carbon of manures is converted into carbonic acid, and is in that state imbibed by them. (*Phys. Vég.*, v. iii. p. 55.)

Thomson, in an early edition of his *System of Chemistry*, gave a still more elaborate theory, which, being in subsequent editions omitted, we have no necessity to demonstrate absurd. I consider that the facts of which we are in possession, if progressively estimated, place the subject in a very clear light. Saussure found that a soil deprived of its soluble matters, by repeated decoctions with water, would not support vegetation so well as that portion of the same soil not so deprived of its soluble constituents. (*Recherch. sur la Vég.*, cv. § ii. p. 170.) The extract thus obtained was evidently composed of saccharine matter, mucilage, extractive principle, &c. These, we know, are nutritive to plants, and are elaborated and assimilated by them after intromission. Now, vegetable substances, as straw, &c., gradually yield these soluble matters as they decay. Straw, wood, leaves, &c., consist chiefly of woody fibres; to convert this into saccharine and mucilaginous matters is the work of putrefaction; to effect this, oxygen must be absorbed, and the extra proportions of carbon be got rid of, as is evident from the following table of constituents.

		<i>Woody Fibre.</i>	<i>Gum.</i>	<i>Sugar.</i>
Carbon	- -	52.55	42.25	27.5
Oxygen	- -	41.78	50.84	64.7
Hydrogen	- -	5.69	6.95	7.8
		<hr/>	<hr/>	<hr/>
		100.00	100.00	100.0
		<hr/>	<hr/>	<hr/>

That such processes actually do occur, Saussure has demonstrated by experiment: he found that moist wood, exposed

to the air, absorbed oxygen, evolved carbonic acid, and water was evidently decomposed. Thus, then, putrefaction seems to render organic matters fit for the nourishment of plants, by converting them into saccharine and mucilaginous compounds, capable of solution in water. Hence the phenomenon of wood, which is slow of decomposition, being a permanent manure; animal matters, which rapidly putrefy, being transient, though temporarily powerful: hence the economy of using partially decomposed composts is also rationalised; when completely decomposed, its soluble matters, being more than can be consumed at the time by the crop, pass away with the drainage water, much is lost in the state of gas, and all that is left are a few earthy, saline, and carbonaceous particles, of comparatively little value.

Of the less general manures, which benefit plants by entering into their composition, a few words will suffice. Sulphate of lime (gypsum) is a component of clover, lucerne, turnips, &c.: hence it has been applied, with benefit for these crops, to such soils as did not already contain it. Bones, broken small, have lately become a very general manure; their benefit, which is very permanent, is easily accounted for. The bones of oxen contain about 50 per cent. of gelatine, which is soluble in water, and rapidly becomes putrescent; the remainder is chiefly phosphate and carbonate of lime, salts, which are components of wheat, rye, barley, oats, peas, beans, vines, cucumbers, potatoes, garlic, onions, truffles, &c. Common salt, also, is employed as a manure, and is beneficial, partly in consequence of entering into the constitution of plants.

I shall next proceed to consider manures as being beneficial to vegetation, by absorbing and retaining moisture from the atmosphere.

(To be continued.)

ART. III. *On keeping Ice in Ice-houses.* By Mr. RICHARD SAUNDERS, Gardener to C. Hoare, Esq. F.R.S. H.S. &c., at Luscombe, Devonshire.

Sir,

A RECENT article in your Magazine (p. 138.) is on the procuring of ice and filling an ice-house, and the practice recommended being somewhat different from the method which I have practised for a number of years with great success, I beg to offer you some account of this practice, considering that it

might not be altogether uninteresting to the young gardener to know that a regular and plentiful supply of ice is to be obtained without the aid of salt: but I am perfectly aware that it is not every house that has been built for the reception of ice that will preserve it sufficiently well and long, however judiciously managed.

My method is as follows:—As soon as the ice is frozen to a proper thickness, it is conveyed to the ice-house, where a sufficient number of men are ready to proceed to break it in small pieces; then they throw it into the house, where three or four men more are employed pounding it, till a sufficient quantity of powder is obtained to prevent any part of it being hollow. In this manner I proceed till the house and entrance, or passage to the house, is completely filled. The ice which the passage contains furnishes a supply for six or eight weeks; at the expiration of which time the house is opened, and a quantity of straw taken into it, sufficient to fill the cavity that will then be found between the ice and the wall, and also to lie one bundle thick over the top of the ice. The passage is now closely filled up with straw.

For eleven successive years the ice-house here was not without a large stock of ice; at the expiration of which time I had the then remaining ice removed, in order to examine the wood-work at the bottom, and to lay in a fresh quantity of wood faggots, which are placed over the bottom as closely as possible.

I am, Sir, &c.

Luscombe, near Exeter,
Nov. 27. 1827.

RICHARD SAUNDERS.

ART. IV. *On keeping Potatoes through the Winter and Summer in Canada Cellars.* By MR. GEORGE FULTON, Gardener to Lord Northwick, at Northwick Park.

Sir,

SOME of your correspondents have given an account of growing early and late potatoes, but I am not aware of any that have stated how to keep a crop of late potatoes through the winter and summer months in a high degree of perfection; for it is often seen that the different methods of keeping, or rather bad treatment of the tubers, such as pitting in great quantities, exposure afterwards to the air in turning them

over, frosts, &c., not only destroy many, but very much deteriorate the flavour of those saved.

The method we adopt here is as follows:— After digging up in the autumn, we first sort them over, then store them up in a dry state in what is commonly called a Canada cellar, which we have here, and which I would recommend before all other places for keeping potatoes. The building may be of any length or width, according to the quantity to be put in it, and not deeper than 3 ft. below the ground level outside, nor more than 9 ft. in the clear inside of the vault, arched over as for an ice-house, with one strong door, to shut very close. In such a place it will be found that, though the temperature be a few degrees below the freezing point, the tubers will not be frost-bitten, if even uncovered, which they should always be; and, if there is plenty of room in the cellar, piling them up in right angles against the back part of the building is an advantage, as it keeps them more from growing than when in a square body. I do not mean to hold out to you or your readers that Canada cellars are quite new in this country; but I only wonder why they are not more general, as they are so well calculated for keeping various roots and vegetables in severe winters.

As a proof of the excellence of the above method of keeping potatoes in a fine, mealy, yet moist condition, I sent some to London in an excellent state of preservation, for Lord Northwick's table, on the 4th of July last, which were highly approved of by His Lordship, and also by the family, although we had at the same time in the garden the same variety, viz. what is called the Harrow potato, ready to dig up. This variety combines in some degree earliness and lateness, as we can keep them nearly ten months in perfection from the time of digging up.

With respect to the different methods of growing early potatoes, I have only to observe that I plant a round Dutch variety in the open garden in July, which is ready to dig up in November, as wanted for the table. They keep very well through the winter in the ground, when covered thick with sawdust or oak leaves. This method, taking every thing into account, is decidedly the best for what may be called an early winter crop.

I am, Sir, &c.

GEORGE FULTON.

Northwick Park Gardens, Sept. 1827.

ART. V. *Result of a Trial of Vines trained on hanging Trellises in the Garden of R. Bruce, Esq., of Kennet, Clackmannanshire.* By Mr. JAMES BARNET, Curator of the Experimental Garden of the Caledonian Horticultural Society.

Dear Sir,

It is not my intention, in the following attempt, to compare training on hanging trellises with every mode of training vines in vineries; I only propose to notice the result of this practice, compared with that of the most prevalent and usual modes of training to wire trellises placed parallel to the roof, and at the distance of 1 ft. or 1 ft. 3 in. from it.

When the vines are trained so as wholly to cover the roof, the practice is considered by some objectionable, as excluding too much light. To remove this objection, Mr. Archibald Reid, of Balcarras, introduced trellises depending vertically from each rafter, and averaging about 4 ft. in depth, as already described in your Magazine, vol. ii. p. 427., and in the *Caledonian Horticultural Transactions*, vol. iii. p. 465., and partially adopted in private gardens, perhaps to a greater extent than they deserve.

Half of a vinery in the garden of R. Bruce, Esq., was subjected to the Balcarras mode; the other half was left as formerly, trained up the roof. The vines were then in full bearing, having been planted twenty years. The depth of trellis in front, or at its commencement, is 1 ft., gradually increasing in a curved line to 3 ft. 6 in. at the back; it is composed of strips of wood four eighths by three eighths of an inch thick, placed vertically, and nailed to the rafter at the upper end, and at the lower to a piece of wood half an inch thick by 3 in. broad, forming the same curve as the lower part of the trellis, but placed 4 in. higher than the ends of the laths. These spars are 1 ft. apart from each other, and placed opposite on both sides of the rafter. [A little different from the trellis described *Gard. Mag.*, vol. ii. p. 428. *fig.* 127.]

On this trellis the vines, which had formerly been on the roof, were now trained. The house was slowly forced, commencing about the middle of March, 1820, and the routine course pursued, the temperature ranging from 65° to 85°. The crop was ready to gather about the end of July. Although a portion of the clusters nearest the glass on the hanging trellis began to colour a few days before those on the roof, the bunches on its sides were later; so that, generally, those on the roof were as forward as those on the hanging trellis. The bunches on the lower part remained later by a week, paler in colour, and did not acquire so fine a flavour as those

on the roof; neither was the young wood on the lower part of the trellis well ripened, but remained soft and spongy, which had a tendency to diminish the next year's crop and the vigour of the trees. Although more light was admitted to the floor of the house, its distribution was not so equal to the vines; because those kinds producing leaves on long foot-stalks, such as the Black Hamburgh, exclude the light from those on the lower part of the trellis.

When this kind of training is to be adopted, I would recommend the sorts producing small leaves, such as the Frontignacs, to be preferred; and where other exotic plants are combined as a secondary object, every alternate rafter only should have a hanging trellis: for, when rafters, as at Kennet, are only 3 ft. 6 in. apart, and the vines exuberant, very little space is left for the admission of the sun's rays.

Vines trained in this way will be found to derive less benefit from the sun, than such as are trained on a roof; because, being on both sides of the trellis, those on the east side are only exposed to his rays when his altitude is above the next rafter eastward, and they are shaded when he is meridional with the house, from which time, those on the west side are exposed in their turn: consequently, vines on hanging trellises have just one half less sun than vines trained in the usual way. Hence the fruit is more liable to be injured from damp, in the proportion of two to one, as near as I have been able to learn. Such are the facts in respect of the house in question: whether they apply equally to those of less dimensions, and having roofs forming a very acute angle, I shall be happy to know through the pages of your useful Magazine.

I may notice the kinds of vines subjected to trial on the hanging trellis: they were Black Hamburgh, Black Frontignac, White Muscadine, Muscat of Alexandria, and Black Gibraltar of Scotland, which is the Esperione of England. Of these, the first two were common to both divisions of the house; but, on the new trellis, they were greatly deteriorated both in the colour and flavour of the fruit, and which corroborates the unfavourable opinion I have formed on reflection of what has come under my own observation.

In many instances where the hanging trellises are used, the vines have been half stripped of their leaves to admit light; in which case, the trees and their fruit bear a resemblance to gooseberry bushes and gooseberries which have yielded to the ravages of caterpillars! Every body knows how fruit treated in this way tastes.

At the time the alteration was made, I had the care of the house under my father, who inspected the trellis at Balcarras, previous to its adoption. I have leave from him to say, he entirely disapproves of the plan, after four years' experience. Some ornamental plants, such as camellias, oranges, &c., were found to thrive better after the alteration than before: no great thing in its favour. Vines were planted and trained to a trellis on the back wall, but did not succeed, owing to their too great distance from the roof.

I remain, dear Sir, &c.

Experimental Garden, Warriston,

JAMES BARNET.

December 14. 1827.

ART. VI. *On planting Timber Trees, with an Estimate of the Produce and Profits of an Acre of Black Italian Poplar, Pópulus akladésca (a, priv. kladéske, a little twig; branches nearly destitute of twigs), Lind. By C. F. W., of Fazeley, Staffordshire.*

Sir,

I AM induced to send you the following remarks, from having lately seen a paragraph in one of the newspapers, stating that the amount of duty paid on fir, oak, and other timber, for the year ending January 5. 1826, was upwards of a million, and annually increasing!

Considering how much the planting of timber in this country might be extended, it is matter of astonishment that we are so much dependent on America and Northern Europe for a supply of that valuable and necessary article. I do not think we can expect to grow any quantity of timber for exportation, but our extensive wastes and forest lands, under proper management, might certainly be made to produce enough for our own consumption, without the least injury to agriculture. There are, I may venture to affirm, thousands of acres of waste land in England, which, in their present state, are of little or no value to their possessors, but which, if planted with suitable kinds of forest trees, would bring in several pounds per acre annually. Many kinds of trees, as the Scotch pine, larch, alder, willow, and several others, will flourish on soils fit for no purposes of husbandry whatever. The following statement will show the advantage to be derived from planting an acre of poor soil with Black Italian Poplars, *Pópulus akladésca, Lind.*: —

	£	s.	d.
Digging, trenching, and planting Poplar cuttings - -	15	0	0
Compound interest on 15 <i>l.</i> for thirty years, at 5 per cent.	65	16	0
Rent, 30 years, at 20 <i>s.</i> per acre, with interest at 5 per cent.	66	18	6
	<hr/>		
	£145	14	6
	<hr/>		

At the end of thirty years there will remain, allowing for thinnings, 500 trees, containing on an average 20 ft. of timber each, which is worth at least 1*s.* 6*d.* per foot, making the value of the trees 30*s.* each; but suppose them worth only 20*s.* each, then there remains 354*l.* 5*s.* 6*d.* profit, or nearly seven times the value of the land, reckoning it worth 50*l.* per acre;

The Lombardy Poplar is the more valuable for timber, but the Black Italian is the quicker grower: either sort will grow freely from cuttings of one year old shoots.

If you think the above worthy a place in your excellent Magazine, I shall feel much obliged by your inserting it.

I am, Sir, &c.

C. F. W.

Fazely, Staffordshire, Nov. 4. 1826.

ART. VII. *On the Athenian Poplar, Pópulus græca as a Timber Tree.* By JOHN H. MOGGRIDGE, Esq., of Woodfield.

Sir,

READING, many years ago, in the first part of the fifth volume of *The Memoirs of the Literary and Philosophical Society of Manchester*, an account of a tree, by Charles White, Esq. F.R.S., which interested me exceedingly, I endeavoured to procure some plants of the kind, called by Mr. White the Athenian Poplar, *Pópulus græca*, (foliis cordatis, glabris, basi glandulosis, remote crenatis; petiolis compressis; ramis teretibus: leaves heart-shaped, smooth, with glands at the base, remotely notched; foot-stalks compressed; branches cylindrical,) of many of the nurserymen in and about town, without success. About twelve years since, however, I became possessed of a few trees of this sort, the original of which came, I believe, from Alnwick. It not being to be propagated by cuttings, or at least not with any certainty, it was some time before I could much increase the number of my plants. This having now succeeded in doing, and having also many trees becoming of considerable size, besides having sent a number to various friends in different parts of the country, and being now also

in a situation to plant this Athenian Poplar largely, I am anxious to know of those who have older trees of the same sort, whether, as a *useful timber tree*, its qualities, in their *actual experience*, rank it as high as Mr. White predicates. In the paper I refer to, the Athenian Poplar is said to be a native of the islands of the Archipelago, the first of which was cultivated by Hugh, Duke of Northumberland, in the year 1779. "Perhaps," says the writer, "there is no deciduous tree so beautiful, or so proper for pleasure grounds intended for ornament and shade, having a fine upright stem, the branches well disposed, the bark smooth and of a silvery hue, resembling satin wood. The leaves, which are of a light green, are produced very early in the spring, and are retained on the tree longer than on any deciduous tree in this country, not falling off till late in the autumn; they are never blighted nor infested with insects, nor does it lose a leaf during the whole summer. It is of quicker growth in dry upland, than any tree we are acquainted with in this climate." The writer then mentions that there are two sorts, the one (grafted) of little value, and concludes by stating that "the other has made a rapid progress, being at least 51 feet high, and 2 ft. 9 in. in girth," or, as I conclude, in circumference. As an ornamental tree, my own experience is confirmatory of nearly the whole of Mr. White's statement. Of its growth in dry upland situations, as far as I have been acquainted with it, I cannot speak with equal praise; and I should, without the least intention of depreciating his account, or the real value of the tree in this respect, suspect that the general term of "*about twelve years*," as the period of the very remarkable growth mentioned by him, if strictly enquired into, would, in point of fact, turn out to be nearer fifteen. I have this day measured a number of my Athenian Poplars, growing in dry upland situations, but in good healthy friable soils, several of the largest of which measure, at 3 ft. from the ground, but 12 in. in circumference, and 35 ft. in height; these (from positive reference to written records made at the time) were planted in the winter of 1817-18. To enable a more correct estimate of the growth of this tree to be formed, I ought also to add, that mine now referred to are planted on an elevation exceeding 500 ft. above the level of the sea, though in sheltered situations: My trees were from 4 to 5 ft. high when planted out, so that they have averaged shoots of 3 ft. yearly, *from the date of their being planted*; a growth which but few experienced planters would complain of, but which being well

satisfied with myself, my object now is to ascertain whether this tree be worth cultivating on an extensive scale for the sake of its timber; and if, amongst your numerous correspondents, some one or more in the neighbourhood of Alnwick, of Manchester, or elsewhere, would, through the medium of your most useful publication, give us the best information in their power, it *might* be conferring a service on the public, but would certainly oblige,

Sir, yours, truly,

Woodfield, Monmouthshire,
December 4. 1827.

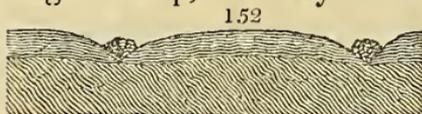
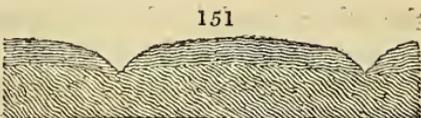
JOHN H. MOGGRIDGE.

ART. VIII. *An Attempt to show how Timber Trees may be cultivated conjointly with Farm Produce.* By W. M. of Argyleshire.

Sir,

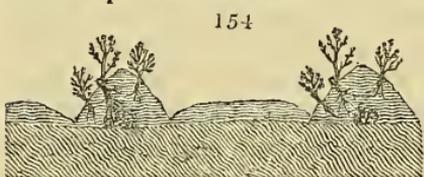
I SUBMIT to your consideration a mode of increasing the plantation of the more valuable sorts of timber in good soil, and improving arable land, without very greatly interfering with the average return of farm produce. From various and frequently repeated experiments, on a small scale, I think it is fully corroborated, that if our better quality of land were planted with trees, it would return at some distant period, say from sixty to eighty years, as great a profit as the same land would do under a system of common farm management; but as these experiments have been on a small scale, such as ornamental belts about the mansion-house, &c., they have generally been looked on with indifference by the more extensive planter, and with the idea of the insuperable expense of labour and manure. Mr. Withers has already published a book (reviewed *Gard. Mag.*, vol. ii. p. 75.), showing the great advantage of treating trees as any other vegetables, with a very small quantity of manure and hoe culture during the early stages of growth. This forms the basis of the mode I am to suggest, but would introduce the horse hoe and drill crops, in order to remunerate the cultivator, by an annual return of agricultural produce. The more unwieldy apparatus of the horse-hoe husbandry would require much greater distances than are at present, I think very uselessly and extravagantly, adopted, for the double purpose of procuring shelter, and increasing the number of chances of having trees.

Having laid out a field for the purpose of planting trees in 12 ft. ridges, after fallowing or green crop, let every third



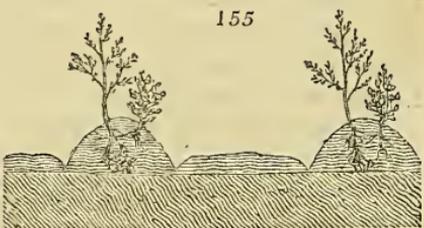
water furrow be ploughed out as deep as possible (*fig. 151.*); then place manure in it in the same way as in a turnip or potato drill (*fig. 152.*); next gather in three furrows on each

side, gathering the summit of the ridges as high as possible (*fig. 153.*), the object being to place the manure deep, and cover it over with a good deal of well pulverised surface soil.



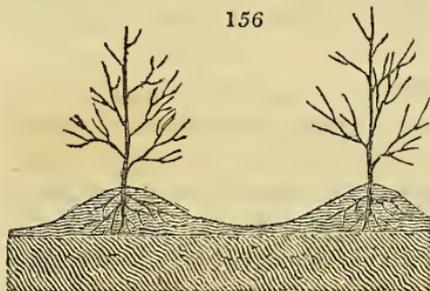
The principal trees are then to be put in, sloping from the most exposed direction of the wind, and cut over as thorns are, if the planting is commenced in the winter, to prevent windwaving (*fig. 153.*).

The cropping ridges are now crown and furrow reversed, and the second spring, a row of quick-growing nurse plants is introduced on each side of the principal trees. (*fig. 154.*) The fourth year half of the nurse plants are removed on the best exposure. (*fig. 155.*) The reason for not introducing the nurse plants till after the first year is, that I allow the



more free use of the horse hoe while it is of most use. By placing the plants as recommended, it causes the first branch, which is afterwards to become the main stem, to rise to the blast (*fig. 156.*), and by backing up the ridgelet well before winter sets in, windwaving is avoided, by which, when it takes place, water is admitted to destroy the roots.

If the supply of manure is sufficient for filling the whole drill longitudinally, it may be planted with tree plants a foot distant, the best of these being retained at certain distances, and



the others used for future plantations, and repairing any deficiencies, should these occur; or, what is better, the trees may be planted at 12 ft., and the intervening space be planted with white beet, potatoes, or turnips. If, on the other hand, the quantity of manure should be small, a little may be placed at every 12 or 15 ft., where the tree is afterwards to grow, and the intervening space hoed, or cropped, if it will bear any thing.

I would almost venture planting a large field of very indifferent ground in an exposed situation on this principle, and I think with every prospect of success. The expense of fences would be saved in a great degree, compared with enclosing a park with a belt, and I think the cropping might be carried on for years, and when in full heart, and the trees approach too closely for the proper ripening of grain crops, the whole might be laid down in very rich meadow or pasture, whenever the cattle would not injure the trees. I intend, as soon as I can regain possession of a piece of land, to try the experiment; and were it not for overturning and altering the shape of my present home farm, I would commence forthwith on a pretty large scale. The distances may be considered great, but the comparatively few trees will be more easily attended to, and if you look at the distances between trees in a well trained and thinned forest, from 30 to 40 ft. between each tree would be found close enough, and then the ground can be longer cultivated with grain crops.

Yours, &c.

Argyleshire, July 25. 1827.

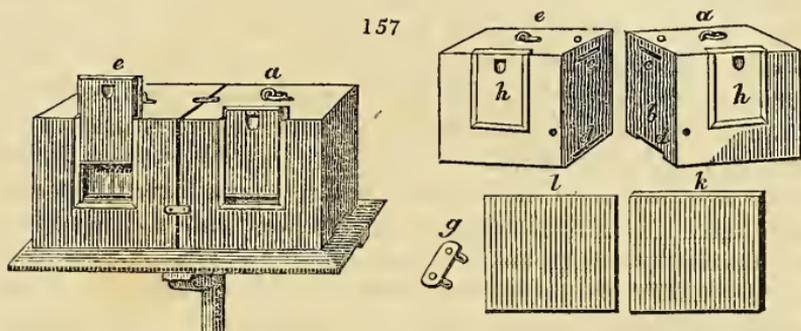
W. M.

ART. IX. *Description and Use of Dyer's Retrocoupling Bee-boxes.* By Mr. C. HALE JESSOP, Nurseryman, Cheltenham.

THESE boxes were invented by a shoemaker of a village in this neighbourhood, of the name of Dyer, about half a century ago, but not, as far as I know, used by any one but myself. I adopted them twelve years ago, and consider them superior to every other, except the Polish hive. I have paid a good deal of attention to bees, and have always had a tolerable apiary in my nursery.

Dyer's hive (*fig. 157.*) consists of two deal boxes of exactly the same size (*a*), outside height 10 in., breadth 11 in. in every way, inside exactly square. The top front and two sides should be an inch thick, the back half an inch. The back (*b*) has

an opening at top (*e*), and another at bottom (*d*), for the bees to communicate with the other box (*e*), which is exactly of the



same dimensions, only without the upper opening of communication in the back, but with an entrance for the bees there. The boxes are held together by three iron staples (*g*), one on the top, and one on each side, and each box has a pane of glass, covered with a sliding shutter (*h*), for the purpose of observing the bees when at work; four cross sticks may be put in each box in the usual manner for the attachment of the combs. The contents of each box are about $2\frac{1}{2}$ gals., so that the two together (*a*, *e*) are about the size of a common straw bee-hive. A ring is fixed on the top of each box for the convenience of carrying or hanging up, when out of use. If you have ever so many boxes, make them all of one dimension, and then any two will fit together. The boxes should stand upon a deal board not more than half an inch thick, as wide as the boxes, and $2\frac{1}{2}$ ft. in length. When only one box is used, there is a loose board of half an inch thick (*k*) applied to the side of communication, and made fast to it by the staples already mentioned (*g*), one end of which fits into the holes in the box, and the other clips the edge of the board.

When only one box has been used, and it is desired to add a second, remove this board, and thrust in a sheet of tin (*l*) between this and the box to prevent the bees from coming out. Then place the back of the empty box close against the sheet of tin, withdraw the tin, and make fast the two boxes with the three staples; then stopping the doorway of the full box, turn both round, so that the full one may stand where the empty one stood before.

The reason why the boxes ought to stand upon a thin board that is movable, is because the bees will fasten the board to the boxes with a strong cement, so that whenever you lift the boxes you will lift up the board likewise. If it be a very large

swarm when put in, both the boxes may be used at first; if not, one will be sufficient. In a good season for honey the backward box will be cemented to the board in about two months from its first establishment, and when so it is a proper time to take the backward box away. In proceeding to do this, in the first place draw out the staples, and with a thin knife cut through the cement that fastens the boxes together, and to the box on which they stand. Then thrust in your piece of tin between the boxes, so that not one bee may pass from one box to the other. Let them stand quite separated full half an hour, and then inspect them at the glass windows; if the bees are in a great hurry and confusion in the back box and quiet in the other, you are so far right, and the queen is in safety; but if otherwise, the operation has not been successfully performed; the tin must be drawn back again, and the boxes made fast as before, letting them stand nine or ten days longer, before you make any attempt to take it away again. But, if the operation has been successfully performed, open the door of the back box to let the queen's prisoners come forth; for the hurry and confusion of the bees is owing to their having lost their sovereign. The bees let loose at the back door will come forth in great haste, forty or fifty taking wing at a time, in a kind of wild flutter, quite different from the appearance they have when going to labour. No sooner do they see their fellows at the front door quiet at work, but they enter boldly, as usual. Now, if this operation be performed about midsummer, the bees will fill another box, which you must immediately join to the other as before; but, if later in the season, and you take only the half-filled box, then join the loose board, and leave the bees with only one box. Observe always when a fresh box is given to stop the door of the full one, and turn the boxes so that the empty one may stand in front, for they will fill the backward one with honey first; besides, the young are always deposited quite near the front. It is needless to state that, by the use of these boxes, there can never be any occasion to kill the bees, and that in a fine season much more honey may be obtained than from the common straw hive.

I shall conclude by noticing an opinion which I consider erroneous, though believed by many, viz. that any place may be overstocked with bees as well as with cattle. From long experience I well know that, if there were but one stock of bees in a large parish, and the season proved unfavourable, they would be poor; on the other hand, if there were one hundred colonies in a small village, and the season good, all the swarms that came in proper time would be rich.

Honey and wax, taken where the bees are suffocated with fire and brimstone, are of a quality much inferior to those obtained by the other mode. This practice, which may be truly called diabolical, and must have been taken from the idea of the infernal regions, need never be resorted to by those who will adopt Dyer's bee-boxes, or the Pasiëka, and, I trust, the progressive refinement of the age will soon lead to so desirable a result. I am, Sir, yours, &c.

C. HALE JESSOP.

We have sent the boxes to Wear's manufactory, No. 369. Oxford Street, where they will in future be manufactured for sale. The Pasiëka, or log hive of Poland, is also manufactured there. We should be glad to know if any of our correspondents have tried the log hive (*Encyc. of Gard.*, § 1738.), and how they like it. Dyer's hive may be compared with Dr. Howison's. (*Encyc. of Gard.*, § 1744.) — *Contd.*

ART. X. *An Account of a new and effectual Method of protecting early forced Crops, in Frames, during the Winter and Spring Months.* By Mr. E. M. MATHER, formerly Gardener at Old Basford, Nottingham.

Sir,

BEING at present out of place, and having unfortunately plenty of spare time, I beg leave to submit to your notice a new method of covering hot-bed frames, which I have practised with much success. I need not say that we have often difficulty in defending our first crops of cucumbers, &c., in severe frosty weather, and, notwithstanding our utmost care with mats, hay, &c., are often disappointed in our hope, on perceiving that our plants have received a check, when we trusted they were safely covered up. Reflecting on this circumstance, it occurred to me that we erred in laying the covering too closely to the glass; this allowing the heat to pass too easily through all the covering so compactly laid on. As a remedy, it struck me, that if the covering, whatever it might be, were supported above, and at some distance from the glass, it would be more effectual for my purpose; because an intermediate volume of air, acting as a non-conductor of heat, would be interposed as a barrier against either the descent of cold air, or the escape of heat from the interior of the bed.

For this purpose, I had ledges nailed to the ends of my frames, 6 in. higher than the surface of the lights: these ledges projected several inches beyond the frame, both at back and

front: in these projecting ends notches were cut, to receive ledges of similar scantling, at back and front; and, when so placed, all were of equal height (6 in.) above the surface of the glass, as above mentioned. In the back and front ledges (which for convenience were movable) notches were cut opposite to each other, and at suitable distances, to receive cross bearing strips, dovetailed at the ends to fit into the notches on the back and front ledges. On this raised skeleton frame is laid the covering, sufficiently thick according to the weather, and properly fastened on.

The security of the plants, under such disposed covering, is most complete, has given great satisfaction and credit to myself, and been highly approved, and I believe followed, by all who have come to a knowledge of it. I fear you will not be able to comprehend the rough sketch I herewith send; but my description cannot be mistaken. It is only necessary to add that the back and front ledges should fit closely to the frame, and cover the opening betwixt the lights and the covering; and, as the side styles of the lights are generally longer than the width of the frame, the ledges of the skeleton frame must be notched to receive them. I am, Sir, &c.

EDWIN MATTHEW MATHER.

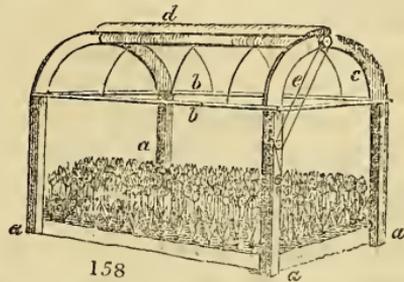
*Lewis's Place, Blooms Grove Street, near
Nottingham, Dec. 2. 1827.*

ART. XI. *Description of an Awning for a Tulip Bed, and also of the Flower Stage in Use by the Lancaster Horticultural Society.* By Mr. MATHIAS SAUL, of Lancaster.

Sir,

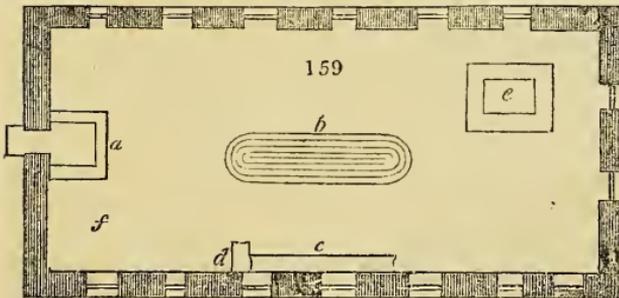
THE inelegant and sometimes clumsy manner, in which florists shade or shelter their tulip beds from the sun or rain, has frequently displeased me, and I have little doubt it has deterred some amateurs from the culture of one of our finest flowers. The awning for tulips and other flowers, figured and described in the *Florist's Directory* (*Encyc. of Gard.*, § 6234.), is too expensive for general use, and the mode of covering with hoops not much higher than the summits of the flowers, precludes the florist from almost all enjoyment. I send you herewith a design for an awning calculated for a tulip, hyacinth, auricula, or carnation bed, 9 ft. long and 4 ft. broad, upon a very simple plan, not expensive, and not apt to go out of order.

The principle on which this awning is let down or rolled up is that of the common roller window blind; the difference being that here two blinds are let down and rolled up at the same time. The structure which supports this double blind consists of four posts (*fig. 158. a, a, a, a*), which rest on the ground, are joined at top by a frame (*b*), and at each end by a semicircular narrow board (*c*). The roller to which the canvass is fixed (*d*) works into these two boards, by means of a pulley and line at one end (*e*).



The canvass used should be such as will keep out rain, when stretched in a sloping position. Having been sewed together of the proper length and width, it should be laid on the roller, so as to reach the ground on both sides of the frame: it may then be nailed on the roller; a slip of wood, or, better, a rod roller or strip of lead, being nailed along its lower edges; and it is then fit for use.

The flower show of the Lancaster Horticultural Society is held in the National School here, and I now send you a plan and description of the arrangements which were adopted on the 1st of May last. The workmen commenced fitting up the stage and tables early in the morning, and had finished their work by eight o'clock, when the door was opened for the admission of the competition flowers. These were received at the table or counter placed close to the entrance (*fig. 159. a*), and were carried forward immediately by some of the com-



mittee, to the stage (*b*), and placed in their proper places. At 11 o'clock the door was closed, and no one permitted to be in the room, except

the committee and the judge, who then commenced selecting from the first class of competition flowers a quantity of the finest specimens, and had them removed to a side table (*c*), where they were properly examined, the best placed in a line, and the rest returned to the stage again. This operation was

repeated till the whole were gone through. Then the labels were opened, and the clerk, who sat at one end (*d*) of the side table, wrote down the name of the owner, and the name of the flower, with the prize adjudged, on a card, which was then tied to the plant, and the plants were next placed on the prize table for public inspection.

There were fifty prizes on the prize table at this show, and a great many plants in pots, and bouquets, on the show table and the other tables. At ten minutes past ten o'clock, every thing being completed, the door was opened, and the military band entered in full uniform, and took the place allotted for them (*f*) on the right hand. The room was soon filled with the best company of the place, who were highly gratified with the whole. It was an open show, free to all the growers in the country, and the flowers were consequently very numerous and very fine.

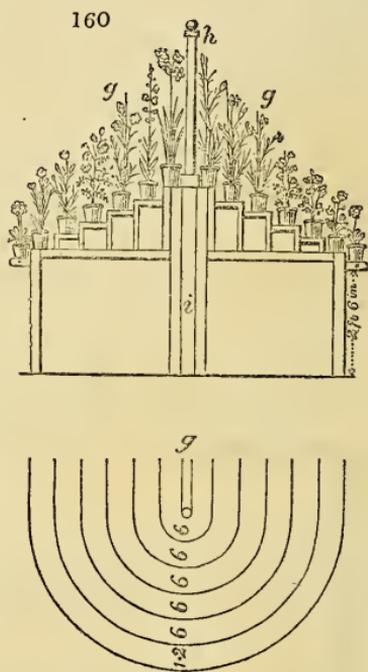
The exhibition closed at four o'clock, when the owners commenced removing their different plants; by six o'clock the whole were removed, and by eight o'clock the school was in the state in which it had been at the same hour the evening before.

I shall only notice farther, that the stage (*fig. 160.*) consists of several shelves (*g, g*), the lowest of which is 1 ft. 2 in. in breadth, the others 6 in., and the rise of each shelf is 3 in. A screen of black cloth, 4 ft. high, extends along the centre over, and another of the same width under, the stage, to prevent the discordant effects of cross lights. The shelves of the show table are painted black, those of the prize table covered with green baize. So many well-grown plants, with leaves, stems, and flowers different from the ordinary vegetation of the country, thus elegantly arranged, produce a vivid impression on the minds of the spectators; and it has been observed, that almost every exhibition makes one or two additional converts to botany and horticulture.

I am, Sir, yours, &c.

Lancaster, May 16. 1827.

MATHIAS SAUL.

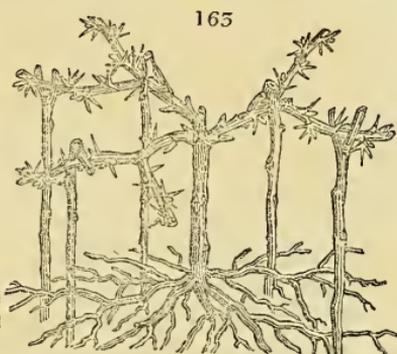


ART. XII. *On training and managing the Gooseberry, with a view to grow Fruit for Prize Exhibitions.* By Mr. MATHIAS SAUL, of Lancaster.

Sir,

I HAVE sent you a specimen of the plan of training the 162
gooseberry trees, as adopted by those growers who
161 wish to have large and heavy fruit for the prize-
shows. As all the fruit grow from the underside of
the branches, the plan adopted for first putting the
tree in a training state is to have a few hooked
sticks (*fig. 161.*) and forked sticks (*fig. 162.*), the
former to hold down the branches that are inclined
to grow upwards, and the latter to support those
which are inclined to grow downwards. The plant
herewith sent (*fig. 163.*) has been trained by such
sticks. It consists of three shoots spreading regu-
larly, and nearly horizontally, outwards. Next
autumn these three shoots will have produced a number of

side shoots, most of which may be shortened to one eye, and the others reduced to one half of their length. No shoots should be left either at the origin or the extremities of the branches, but only at the sides; the fewer the number of shoots, and the younger the tree, the larger will be the fruit.



At the next pruning season, viz. November, the tree will consist of the three principal shoots, each bearing two young shoots shortened to about 7 in. of their length; these last, in the succeeding year's pruning, are to be left with two shoots only of new wood; all other shoots are to be closely cut out; and, in leaving the young shoots for bearing, regard must be had to keep the whole in a regular and handsome form.

In all following years, the system of pruning and thinning which I particularly recommend, is to keep a moderate and constant supply of strong healthy young shoots, from which alone can be expected large and fine fruit; and, whenever the extremities grow beyond the proper bounds, such branches should be cut back, so as to keep the tree in a compact form, and furnished sufficiently, though rather thinly, with new bearing wood: for large fruit cannot be expected if

the tree is too much crowded with old and young wood; because the fruit should have, as much as possible, a full share of the strength of the tree.

And it is not only to the branches and top of the tree, that the care of those who wish to excel in the cultivation of the gooseberry must be directed; they must pay attention to the roots also, as it is necessary they should be pruned every two or three years. When a root, therefore, has extended too far from the stem, let it be uncovered, and all the strongest leaders shortened back nearly one half of their length, and covered in with fresh marly loam. This will cause new and more active roots to be formed nearer the stem, and give the whole tree new vigour.

I have taken some pains to procure the best information on this subject; and, from my own knowledge and observation, I am certain that a suitable soil is every thing for the successful cultivation of the gooseberry. Were I to choose a situation for a gooseberry garden, it should be such as I have seen, viz. a deep, rich, marly loam, moderately moist, and at the bottom of a sheltering hill. I am now preparing a soil of the above qualities, and manure, for planting my most valuable sorts in, and, like all the best growers hereabout, take much care in mixing the compost; surrounding the plants with trenches of manure for the points of the roots to strike into; and making round the stem of each plant a basin, to be mulched or manured as I may think necessary, for the purpose of watering in the summer.

Allow me to inform you that the Warrington, though a good fruit, is no longer at the top of our list. We have several far superior, as the Crown Bob, and the Lion, of which I have sent you a small pot, preserved as jam, in order that you may judge of them yourself, and be satisfied that they are equally serviceable as a culinary or as a table fruit.

In the gooseberry shows of this and other counties, I may also inform you that the heaviest fruit last summer was that called the Roaring Lion, which weighed 27 dwts. 7 grs. In Gloucestershire, the largest were the Lion, Gunner, and Huntsman, each weighing 27 dwts.; the heaviest yellow somewhat more; the largest white, the Eagle, weighed nearly 25, and the heaviest green above 21 dwts. I am, Sir, &c.

MATHIAS SAUL.

Sullyard Street, Lancaster, Dec. 1. 1827.

Our readers are under considerable obligations to Mr. Saul, for the trouble he has taken in inspecting a number of the

gardens of the best growers about Lancaster, in order to obtain information on this subject for the use of the Gardener's Magazine. One thing practised by one of the cultivators he visited deserves notice; in planting cuttings, this cultivator ties a little moss round the lower part of the cutting, and this moss is said to cause it to strike stronger roots. Mr. Saul states, also, that the cultivation of the gooseberry, among the most successful growers, is in a way of progressive improvement. — *J. M., for Cond.*

ART. XIII. *Some Account of the Experiments made by William Atkinson, Esq. F.H.S., which led to the Heating of Hot-houses by hot Water.* By MR. JOHN BARROW, Manufacturing Smith.

Sir,

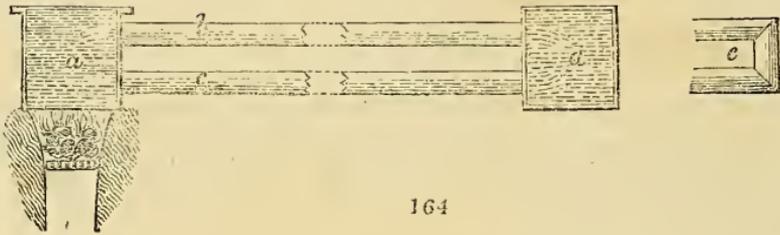
As I find the heating of forcing-houses with hot water is rapidly coming into use, and as I hear that different persons not entitled to it are claiming the invention, perhaps some account of the discovery, as far as I am acquainted with it, may not be uninteresting.

In the early part of the year 1822, Mr. Atkinson, architect, of Grove End, mentioned to me an idea that he had of heating forcing-houses with hot water, to flow in metal pipes, which he then explained by a sketch in pencil, and informed me that what led him to think it would answer, was an experiment he had seen made by the late Count Rumford, about the year 1799, which proved that water is not a conductor of heat, or that one particle of water will not give off its heat by coming in contact with another; that, in heating water, the bottom of a boiler receiving its heat from the combustion of the fuel underneath, the particles of water receive their heat in succession as they come in contact with the bottom of the boiler, and, as they become heated, immediately ascend to the surface, without giving off heat to the cold particles they pass through in ascending; and as the hot particles ascend the cold descend, till the whole mass is heated, and goes off in steam.* (See *Count Rumford's Essays*, vol. ii.)

* The fallacy of Count Rumford's opinions regarding the non-conducting power of fluids, was experimentally proved both by Dr. Thomas Thomson and by the late Mr. William Nicholson; they heated fluids by applying heat at the upper surface only. (*Nicholson's Philos. Journal*, 8vo series.) Water heats, however, much more rapidly from below. — *Cond.*

From the tendency of hot water to rise to the surface, and to descend in cooling, Mr. Atkinson conceived that it would travel to a certain extent horizontally, by having a pipe at the top of a boiler for the hot water to run along from, and another underneath to return the water in cooling to the bottom of the boiler.

The annexed figure (*fig. 164.*) was explained to me as follows: — *a* is supposed to be a boiler fixed in brickwork at



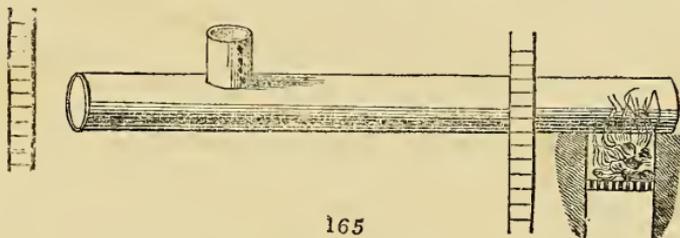
the end or middle of a house; *b*, the upper pipe for conducting the hot water from the boiler to the reservoir (*d*); *c*, the lower pipe for conducting the cooling water from the reservoir (*d*) back again to the boiler (*a*) to be reheated; *d*, a metal reservoir at the extreme end of the house; or, instead of such a reservoir, the two pipes may be connected with an elbow or metal box, as shown by *e*.

It was supposed that water heated in the boiler (*a*) would flow along the upper pipe (*b*) to the reservoir (*d*), and in cooling would return from *d* back to the bottom of the boiler (*a*) through the lower pipe (*c*).

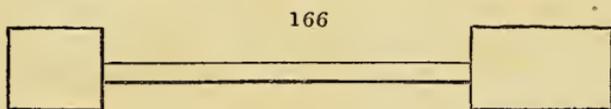
At the time this was explained to me, it was settled that I should make a tin model to try the experiment, but Mr. Atkinson being otherwise engaged, he did not furnish me with a correct drawing and dimensions for the model till the latter end of that year (1822), when I furnished him with a model. The boiler and reservoir were each 6 in. square, the pipes 1 in. diameter, and 6 ft. long. Upon trying the model, the hot water flowed so rapidly from the boiler to the reservoir, and appeared so likely to answer, that the pipes were extended to 15 ft. in length, and the hot water was found to flow rapidly to that extent, and there was every reason to think that it might be extended to a considerable distance. When this experiment was made, the model was tried with one pipe only, but that did not answer.*

* Mr. Turner, of the Horticultural Society, and myself were present when this experiment was made by Mr. Atkinson, and it has since been proved that Mr. Turner had mentioned it to different persons.

In the year following the making of this experiment, Mr. Atkinson was introduced to the late Mr. Anthony Bacon, who lived then at Benham, near Newbury, where he had made some experiments in heating forcing-houses with hot water; but no house had been heated to prove how far Mr. Bacon's plan would answer. His first attempt was made at Abearnen, in Glamorganshire, in 1822, with a piece of large cast-iron pipe about 12 ft. long, closed at both ends (*fig. 165.*), having



an open tube, rising from the upper part, for the reception of the water. A fire was made under one end of the round pipe, and in time the water got heated to the other end; but this was found not very manageable; for, if the water got over-heated, it boiled over from the upright tube, and, from the fire acting upon so small a surface only as one end of a round pipe, the waste of fuel was very great. To remedy this, Mr. Bacon had a model made of tin, with one pipe only (*fig. 166.*),



similar to Mr. Atkinson's, except in using one pipe instead of two; and, after that, he had a boiler fixed in a green-house, similar to the model, with only one pipe. This was tried, but it took several hours to heat the water in the pipe moderately warm, and had very little effect on the temperature of the house; and that winter being remarkably mild, there was seldom occasion to use it.

Upon Mr. Atkinson's explaining the principle of action in his model, and the necessity for having two pipes to cause a circulation, Mr. Bacon allowed him to adopt his own plan for the forcing-houses at Elcot; and I was employed under Mr. Atkinson's direction, and executed the boiler and pipes for one vinery, which were made of strong sheet-iron, tinned, as being the least expensive, in case the plan should not answer upon a large scale. When this house had been tried with success, Mr. Bacon had other houses and a pine pit done upon the same plan, with cast-iron boilers and pipes, which

were executed under Mr. Atkinson's direction. I had an opportunity of seeing what Mr. Bacon had done, and also had his model, which went to the extent of his invention; I have tried it on my own premises, and am quite convinced, as far as his invention went, it never could have been usefully applied. After the hot water had been brought into use at Mr. Bacon's, the same plan was adopted in a pine pit, about 100 ft. long, at Lord Carnarvon's. In 1826, Mr. Atkinson adopted it in a conservatory 60 ft. long, 20 ft. wide, and 20 ft. high. The pipes are placed under the paving of the footpath, and the heated air let out by gratings. In this house the water has to run 80 ft. from the boiler to the reservoir, and it completely answered in giving out sufficient heat during the coldest nights of last winter, and the fire was never attended to after ten o'clock in the evenings; and, in the severest frost, the water did not lose more than 5° of heat * during the night. When there is a great extent of connected glass, as at Messrs. Loddiges', with a proper person to attend the fire, it is probable that steam may be a more convenient way of heating: but for private gardens, or where the houses are not extensive or connected, hot water has great advantages over steam; as, from the simplicity of the construction, it is considerably cheaper in the erection; it is not liable to get out of repair; and there is no risk of bursting the boiler or pipes, as the boiler will answer with a simple wooden cover, and no valves are required. No further attention is necessary than for a common flue fireplace; and, from the length of time the water is in cooling when once heated, the fire does not require attending during the night. It is very convenient for pine pits, from the pipes taking up less room than a flue, and would answer well for cucumber and melon pits, where dung is scarce. In narrow houses there have only been two pipes used, about 4 in. diameter, one to carry the hot water from the top of the boiler to the end of the house, and another under it to bring the water, on cooling, back to the bottom of the boiler. Where the houses have been wide, it has been considered necessary to get a greater surface of pipe heated; and two pipes have been used, to go

* Mr. Barrow, we think, is in error here, for it must require a very large mass of water to keep such a house warm all night with a loss of only 5° of its temperature; one pound of coal would raise the temperature of half a ton of water 5° (*Rumford's Essays*, essay x. p. 12.), and the water could give out no more heat in cooling than it had acquired from the fuel; now we all know how small an effect one pound of coal would have in preserving the temperature of a hot-house all night. — *Cond.*

from the top of the boiler, and one pipe below has been found sufficient for the returning pipe. When the houses are large, a greater number of pipes should be used, to get more heated surface, as in large houses heated with steam. Mr. Atkinson has suggested using square pipes, instead of round ones, for stoves, or, when a great heat is required, for the sake of getting a greater heated surface *; but as this would be more expensive than the common round pipes, that are always to be had ready made, it has not yet been adopted, though there is no doubt but it would be an improvement.

As I have been told, by some of the first gardeners, that this invention of heating with hot water will form a new era in gardening, I think the person who first discovered it, and brought it into practical use, ought to have the credit; and, from all the enquiries I have been able to make, I cannot find that any house was ever heated so as to answer, before that which I executed at Mr. Bacon's, under the direction of Mr. Atkinson.

I am, Sir, &c.

JOHN BARROW.

38. East Street, Manchester Square,
Dec. 29. 1827.

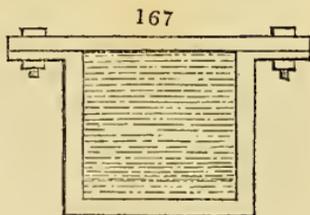
ART. XIV. *Mr. Atkinson of Grove End proved to have been the First who successfully applied the Mode of heating by hot Water to Hot-houses.* By THOMAS TREDGOLD, Esq. Engineer.

Sir,

As the paper in your Magazine on heating forcing-houses by hot water (p. 186.), leaves it doubtful to whom the art of gardening is indebted for the first *successful* application of the method, for the idea is by no means new, the following notices respecting it may be interesting:—

During the time I was with Mr. Atkinson, as his principal assistant, he frequently mentioned his firm conviction that hot-houses might be heated with much advantage by means

* The increase of surface will be nearly one fourth, for the circumference of a round pipe is to that of a square one as $3\frac{1}{2}$ is to 4. Our ingenious correspondent, Mr. Saul, in the *Mechanic's Magazine*, vol. viii. p. 395., has suggested square cast-iron pipes, put together on the same principle as the ship-builders' stoves, with small bolts and nuts. (*fig. 167.*) — *Cond.*



of hot water; and in 1822, shortly before I left him, he had a tin model made, consisting of two cubical boxes (with covers) *, connected by two small pipes, one pipe near the tops, the other near the bottoms, of the boxes. I assisted him to make the first trial of this apparatus, and was the only person present with him when it was made. He succeeded very soon in producing a current, and in heating the water in the vessel most distant from the fire. We differed in opinion at the time, respecting the precautions it would require in practice: it was my opinion that either a tube of safety or a safety valve would be necessary, as I conceived it quite possible that the whole of the water might be raised above the boiling point. How far this is possible or impossible would, however, not be necessary to enquire, if the attention of the gardener to the fire could be entirely depended on.

Mr. Bacon was not known to Mr. Atkinson at that time, and, now that his house is warmed by hot water, it is of the same construction as the above-described model, and it was confessedly done under Mr. Atkinson's direction: hence it is obvious enough that the successful application of hot water to heat forcing-houses is due to Mr. Atkinson.

The unsuccessful or uncompleted trials are of an earlier date. In 1799, Mr. R. Weston proposed to heat pine stoves and beds by hot water (*Repository of Arts*, vol. xiii. p. 238. and 314., old series), and Bosc has the following passage in his *Art. Serre* (*Dict. Agricult. Ency. Méth.* 1816.): — “J'ai été témoin des essais qui ont été faits au jardin du Muséum pour chauffer les serres, au moyen de tuyaux de cuivre remplis d'eau chaude qui se renouveloit sans cesse. On y a renoncé, parceque cette chaleur étoit trop égale en tout temps et trop foible pour les temps de gelée.” † The concluding remark deserves attention.

Mr. Knight proposed a combination of the action of steam and hot water (*Hort. Trans.* ii. 334.), and I have partially put it in practice with considerable success. ‡

I did propose to conclude these notices with a few remarks on the proportions of hot water apparatus, as the knowledge of an unapplied invention prevented me doing so in my work

* We presume that described by Mr. Barrow, p. 424. *fig.* 164. — *Cond.*

† “I witnessed some trials, made in the garden of the Museum, of heating the hot-houses by means of copper pipes filled with hot water incessantly renewed. But that plan was given up, because the heat was found, in all weathers, too equal in degree, and too weak during frosty weather.”

‡ The Comte Chabanne's method, as exemplified at Sundridge Park (p. 190.), is a very near approach to that suggested by Mr. Knight. — *Cond.*

On Warming, &c.; but must defer it to some other opportunity, on account of the length of this letter.

I am, Sir, &c.

16. Grove Place, Lisson Grove,
January, 1827.

THOMAS TREDGOLD.

NOTE to the two preceding Papers.—The impression upon our mind from Mr. Whale's paper (*Gard. Mag.*, p. 186.) was, that both Mr. Atkinson and Mr. Bacon had made the application at the same time, and that, had Mr. Atkinson considered himself entitled, he would have laid claim to the discovery. It now appears, from Mr. Barrow's paper, that Mr. Bacon's trials or experiments were not made from so correct a knowledge, or at least so clear an application, of principles, as those of Mr. Atkinson; otherwise, we conceive, he would not have thought of heating the water in the reservoir with only one pipe. At the same time, it must be recollected that Mr. Bacon is no more, and therefore we wish to say nothing respecting his merits in this discovery, that we should not say were he now before us. We have heard that Mr. Bacon stated before the Committee for Mechanics, at the house of the Society of Arts, that he took the idea of heating hot-houses by hot water, from having seen, above 18 years ago, a leg of mutton boiled in a horse-pail, a feat sometimes performed for a wager at fairs. The breech of a gun-barrel is put in the fire, and the muzzle inserted into the side of the pail, near the bottom; and, a strong fire being kept up, the water in the pail is made to boil, and kept boiling, by its communication with the heated end of the gun-barrel. Mr. Cottam, of Winsley Street, saw this done in a smithy near Manchester.

It appears from the *Dictionnaire Technologique*, article Assainissement, that the idea of heating by circulating hot water was realised by M. Bonnemain, a French physician, on or before the year 1777. M. Bonnemain applied the art to the hatching of chickens, and occupied himself in this way as a matter of business, in the neighbourhood of Paris, during the fifteen years which preceded the commencement of the French Revolution. In the work referred to, under the articles Assainissement, Incubation, and Chaleur, will be found the details illustrated by figures. M. Bonnemain is said to have applied his mode of heating, with success, to the maintenance of an equal temperature in stoves and green-houses (*Chal.*, p. 377.), and to have recommended its

application to hot-beds. (Incubation artificielle, p. 167.) His apparatus for hatching chickens by hot water is described, accompanied by an engraving, in Gill's *Technological Repository* for February last, and is well worthy the attention of engineers. It appears from a note in the *Dict. Tech.*, that M. Bonnemain is still alive, upwards of 80 years of age, but in such poverty and distress, that government has been petitioned for a pittance to support him during his few remaining days.

In the *Encyclopédie Méthodique*, and in the *Nouveau Cours d'Agriculture*, article Incubation, it is stated that M. Chopineau had also hatched chickens by hot water; but at what period is not mentioned. A pamphlet was published by M. Bonnemain on the subject, in 1816; and from this pamphlet it is stated that some English patents for heating, and for refining sugar, &c., and the different application of the hot water system, published in a pamphlet, and exhibited in London, by the Comte Chabannes, are taken. (Assainissement, p. 290. note.) It is probable, also, that the circulation of hot water in the conservatory of the Palace of Taurida, mentioned by Storch, in his *Description of St. Petersburg*, as having been in use in the time of Prince Potemkin (See *Encyc. of Gard.*, § 259.), was effected by some French engineer who had seen the invention of M. Bonnemain.

The pamphlet published by the Comte Chabannes is without date, and not paged, but, as appears from internal evidence, it was written in 1819. The author states that, at his manufactory, No. 121. Drury Lane, "may be seen the new mode of warming by a circulation of hot water;" and also, that Nos. 36. and 37. Burlington Arcade, established as a dépôt "for the purpose of receiving orders for the manufactory, 121. Drury Lane," are warmed in the same manner. A quarto plate and description is given, clearly illustrating this mode of heating as applied at the dépôt. In the same pamphlet Comte Chabannes states that "conservatories, hot-houses, and hot-beds have been heated upon this principle with the greatest success;" probably, alluding to Sundridge Park (*Gard. Mag.*, p. 189.); so that heating hot-houses by hot water is, at least, of ten years' standing in England. That the Comte Chabannes completely understood the subject, appears from the following extract:—

"There cannot be a more perfect idea of the whole operation of the new patent water calorifere, than by comparing its boiler to the human heart, and the tubes, through which the water passes, to the blood-vessels of the human body. In the water caloriferes, the water is in constant movement, as the blood in the veins; it goes out of it by an upper tube, as the blood by a valve in the heart. It circulates through the house, ascends or descends at will, and returns into the boiler at the bottom to charge itself again with

fresh caloric, as the blood ascends, descends, and passes again into the lungs to regain a new portion of oxygen, and recommences constantly the same function, of carrying heat to the extremity of the body.

“*Description.* — The fireplace is surrounded by a boiler, from the top of which an ascending pipe leads to a reservoir, which is filled with water, and placed at the upper part of the house, or anywhere above the said boiler, and from which a descending pipe communicates underneath the boiler, which may be carried in any direction. The rarefaction thus produced by the heat in the ascending pipe occasions a pressure from the colder water in the descending pipe, which establishes a perpetual circulation, and by which means performs the object of carrying the caloric wherever it may be desired.

“This new stove is particularly recommended to all those who are prejudiced against the use of air heated in metal tubes in contact with fire. The air can thus never receive above 160° or 180° of heat, nor be in any way decomposed, in tubes which are heated by immersion in hot water, while the pleasing effect of a soft and regular heat is constantly felt. The improvement may be added to all present stoves, so that one fire will suffice to warm at least four rooms at the same time. The expense of fixing the apparatus is small, when the economy in fuel, by heating so many rooms from a small fire, is considered; besides the advantages of having hot water in every apartment, and to get rid of the dust of a fire in a bedroom, &c. The same fire may also heat a bath.

“Any kitchen-fire to which the apparatus is attached, may warm the stair-cases, parlours, shops, ware-rooms, &c., in short, any number of places, according to the size of the fire, which will at the same time supply hot water for all culinary purposes, the scullery, wash-houses, &c. Conservatories, hot-houses, and hot-beds have been heated upon this principle with the greatest success; and a further advantage in the water calorifères is that, according to the situation, the heat may be given either above or below the fire. The method of heating by circulation of hot water is preferable to steam in many respects: steam requires a strong fire, and to be always kept up, whereas very little fire is sufficient to keep up the heat in the water when once boiling, and to renew the caloric, which is continually passing through the different apparatus for spreading the heat; it is, therefore, much more economical.”

After this follows the description of the manner of warming and ventilating the *depôt* in the Burlington Arcade, which was exhibited, three days in the week to show how six rooms on three upper floors might be warmed by hot water, from a boiler behind the kitchen-fire; and three other days to show the “descending effect” in warming with hot water, by a stove and boiler fixed on the first floor, for the purpose of heating the two parlours and the kitchens. In the plate illustrative of these descriptions, a bath so heated is shown.

After deploring the indifference of the public to his inventions, Comte Chabannes states his conviction, “that their own merits will cause them, ere long, to be acknowledged;” that his attention had been directed to the subject of warming and ventilating by an unexpected destiny (we believe, the loss of fortune at the Revolution); and that an active and laborious mind had enabled him to perfect his inventions with rapidity. He concludes: “To have been in some degree useful to my

fellow-creatures is my ambition ; to be one day accounted as such, would be the reward of which I am most desirous." — The Comte Chabannes was ultimately ruined by his manufactory in Drury Lane, and, as we are informed, returned to France about seven years ago.

Thus it appears that the system of heating by hot water was invented at least half a century ago, and that it will add one to the instances frequently occurring, of an invention having been produced long before it was duly understood and appreciated by those to whom it was best calculated to be useful : that is, the horticulturists. The fact of the Comte Chabanne's having applied it in houses in London, and in hot-houses in the country, ten years ago, will also show that, notwithstanding all the reading, research, and attention to what has been done or is passing in the world, — notwithstanding all that eagerness after improvement which is characteristic of the present day, — a most ingenious and useful invention has been displayed before us, explained, and yet totally overlooked ! Farther, the mode of heating by hot water being clearly of French origin, proves the superior science of the engineers in France at a comparatively early period, and ought to keep alive our attention to that quarter for new ideas.

The application of this mode of heating to baths is of some standing, but it is difficult to determine when it was first applied in this way. Two interesting papers on heating water for baths have lately appeared ; the one by Mr. E. D. Thomson, in the *Philosophical Magazine*, and the other in Brande's *Quarterly Journal*. Mr. Methley, of Frith Street, Soho, the inventor of a very great improvement in the construction of chamber grates, has recently devised a mode for heating a bath in any room of the house, by a pipe passing through a cistern of hot water at the back of the kitchen range. A fire has been applied in the basement story of a house to heat water connected with all the reservoirs and water-pipes in that house, in order to keep up the reservoirs of water to the mean temperature in the winter season, to prevent its freezing in the pipes, and to give a command of tepid water in the dressing-rooms, &c. These different applications may be consulted by the engineer and the gardener with advantage, as they show how the construction of the apparatus for this mode of heating may be varied according to circumstances. It is not so much by merely collecting the principles and practice of any single art, as by bringing the maxims and methods of other arts to bear upon that art which we wish to cultivate, that the greatest progress is to be made. — *Cond.*

PART II.

REVIEWS.

ART. I. *Verhandlungen des Vereins zur Beforderung des Gartenbaues in den Königlich Preussischen Staaten. Transactions of the Society for the Advancement of Gardening in the Royal Prussian States. Part. II. completing Vol. I. Berlin. 4to. 1824. 7 Plates.*

(Concluded from p. 518.)

50. *Ideas on Forcing-gardening, and particularly on the Forcing of Cherries.* By M. Schulze, Court Surveyor and Royal Garden Director at Sans-Souci.

FORCING-GARDENING includes all the means adopted by art for accelerating vegetation. These means are derived from the observation of nature, and from experiments founded on these observations.

Cherry-forcing is conducted in two modes: in a movable structure placed over a tree, in the open garden or against a wall; and in a fixed structure, in which the trees are rendered movable by being placed in pots or boxes. The latter mode is the better.

Whether the structure be movable or fixed, the sashes should be placed nearly at right angles with the sun's rays during January and February. Not only does such a position better admit the sun's rays, but it allows the more rapid descent of moisture from the glass, both internally and externally.

Cherry trees, according to some, should not be planted in tubs or pots till the season in which they are about to be forced, because they will gain more strength if suffered to grow in the open ground; according to others, they should be potted or planted in boxes a year before forcing. Success, in both cases, depends chiefly on careful treatment. It is certain that a tree or plant, in a pot or box, is more easily injured by neglect of watering, or by overmuch water, than a tree or plant in the open ground.

Every tree destined for forcing must be prepared for that excitement by a previous period of rest. "One must not force any

tree before its natural winter sleep." To make certain that a tree has been put to rest before proceeding to force it, we must expose it for a few days to a frost of from 4° to 8° of Reaumur (23° to 14° of Fahrenheit) in the open air. After this the tree may be brought into the forcing-house, and heat may be applied to it. This may generally be done in the month of December. It sometimes happens, however, that there is no frost before the end of this month; and, in that case, it is advisable to keep the tree in the open air, and perfectly dry, till January, before bringing it into the forcing-house. "During the last thirty years, I have made a great variety of experiments with forcing all kinds of fruit trees: the following one taught me a useful lesson: — I had a box made 6 ft. long, 4 ft. broad, and 3 ft. deep; I filled it with leaves, fresh horse-dung, and old tan, partly for the purpose of facilitating the heating of the house and the saving of fuel, and partly to enable me to expose the tops of the trees to the open air, by placing the pots which contained them upon the warm box, and thus heating their roots without forcing their tops. My object was to promote vegetation before waiting for the December frosts. After the trees had been exposed in this way for a short time, I shut up the house, and began lighting fires. I found, however, that very few of the buds expanded and blossomed, and that most of them absolutely opened later than those in the open air. From this experiment I derived the very useful lesson, of the necessity of setting trees completely to rest before beginning to force them. This resting of trees I discovered to be a law of nature, which, like other natural laws, is not to be broken with impunity."

Cherry-forcing may be divided into four periods: 1. From the commencement to the opening of the blossom; 2. The blossoming season; 3. The stoning season; and 4. From the stoning to the ripening.

1. *From the Commencement of Forcing till the Blossoms begin to expand.* — Supposing the time of commencement to be January, then, according to the principle of imitating nature, the temperature of the open air in March must be commenced with, and, towards the end of the month, the heat raised to the temperature of the open air in April. In cloudy weather rather diminish, and in clear weather rather increase, the usual temperature. Watering the roots of the trees once a fortnight will be sufficient, but the tops should be frequently sprinkled; and, in order that the water which falls down may not render the ground too wet, every pot or box should be covered with a piece of oil cloth. The temperature of the water, both for

watering the roots and the tops, should be from 67° to 68° Fahrenheit. Plenty of air should be given in the daytime, unless the weather is unusually severe: the want of abundance of fresh air at this season is one chief cause of the fly (*blattlaus*).

2. *From the Appearance of the Blossom to its full Expansion.*— In the open air, the cherry blossoms in the last half of April, and in the first week of May; therefore, agreeably to our principle of imitating nature, this will give the temperature to be maintained in the cherry house, during the last half of January and the first week of February. It may, however, be raised a little higher when the blossoms are completely expanded, or from 64° to 68° Fahr., but must afterwards be lowered to 56° or 51°. It has been observed that, when cherries have been in blossom in the open air in April, snow has fallen, and that the crop of cherries has, nevertheless, been very abundant. From this and various observations it appears that, though a temperature of from 64° to 74° Fahr. may be favourable for the full expansion of the blossom, and the development of the pollen, a far less temperature is sufficient, and even favourable, for strengthening the incipient fruit. The trees cannot be sprinkled while in blossom, but an equally advantageous effect may be produced by watering the flues. To promote the setting of the fruit, shake the trees by hand, in imitation of the natural winds of April; and shade from the intense rays of the mid-day sun, by gauze covers, in imitation of the passing clouds of that season. These gauze covers also prevent the accumulation of too great heat in the house, and check the production of the mildew and the fly (*blattlaus*). Nothing promotes the production of the *blattlaus* more than the sudden admission of cold fresh air, when the house is raised to a high temperature. The *blattlaus* is to be kept under by filling the house with the smoke of tobacco. “The gardener must not think it too much trouble to put on and take off the gauze covers, often several times a day, during the blossoming season.”

3. *From the Blossoming to the Stoning of the Fruit.*— The setting and stoning of fruit in plants may be compared to the breeding of teeth in young children, being for both a critical period. The time required, from the commencement of the opening to the full expansion of the blossom, is between six and eight days in the open air, but a longer period is necessary in the forcing-house. About the same length of time, and the same variation between the open air and the forcing-

house, take place as to the stoning. The temperature in the open air during that period varies from 48° to 50° Fahr., and the temperature in the cherry house should not exceed these two extremes. In the open air, rainy weather often occurs during the stoning period; and it has been remarked that rain, moisture, and cloudy weather are more favourable to the stoning of the cherry than dry weather. In applying water in the forcing-house to imitate nature, the precaution of placing canvass over the pots and boxes, already mentioned, must be resorted to, otherwise the soil would soon be rendered unfit for the roots. Air must be given liberally; and, in moist weather, too much damp must be avoided, by the application of fire heat. Gauze covers will require to be as frequently used as during the blossoming period, and the gardener must never think it any trouble to put them frequently off and on.

4. *From the Stoning to the Ripening.*—At Sans-Souci, in the open air, in 1822, the whole process, from the foliation to the ripening of the fruit, lasted from the last week in February till the 17th of June, on which day ripe cherries were gathered. The blossoming period of that season lasted from the 15th to the 24th of April. The swelling of cherries in the open air, therefore, may be considered as taking place in the last fortnight of May and the first fortnight in June; and an average temperature prevails during that period of, in the morning, 50°, noon, 66°, evening, 55°; and the maximum of these periods, 62°, 81°, and 66° Fahr. Continuing to imitate nature in the forcing-house, we have here given what will be found a suitable temperature. Showers are frequent in the last fortnight of May, but the weather is drier in the first fortnight in June, and this also must be imitated. The frequent use of the gauze shade is equally necessary.

Thus it appears that three months and a half, from the first of March, are required to produce and ripen the cherry in the open air; if we could imitate nature, therefore, perfectly, by beginning on the first of January, we should have ripe cherries by the middle of April. It may be some proof of the power of art, to state that forced cherries, at Sans-Souci, are frequently gathered in March, and sometimes in February; commencement, in the latter case, being made in December. To a certain extent, therefore, art can improve upon or surpass nature.

“In the foregoing treatise, my chief object has been to show that the process of forcing is founded on a strict imitation of nature, and that the more perfect the imitation, the more perfect the articles produced.”

51. *Description of a horizontal Fruit Espalier, constructed in the Garden of Mr. Wagener, senior, at Treptow, near Berlin.* By Mr. Counsellor Ludolf.

A horizontal frame of latticework, 4 ft. wide and 48 ft. long, is fixed by posts at the height of 2 ft. from the ground, and peach trees are trained on it in the manner not uncommon in our peach houses, and some years since recommended by M. Noisette in the *Bon Jardinier*. (*Encyc. of Gard.*, § 1580.) This mode of training is, under certain circumstances, very convenient in forcing-houses, but it has few recommendations for the open air, except its novelty. Those who wish to amuse themselves in this way, will succeed best by placing a low espalier against a bank of earth, facing the south, at an angle with the horizon of 45° . Of course, whether the espalier is horizontal or sloping, the trees must be covered every night while in bloom, and when the fruit is ripening, the labour of which alone, we should think, would counterbalance every other advantage.

52. *Abstract of what passed at the Meeting of the Society on the 5th of October, 1823.*

Several papers were read and ordered to be printed in the *Transactions*. Some very luxuriant hundred-leaved stocks (*üppig blühende centifolien-stöcke*); very large Napoleon pears; fine double georgianas (dahlias); a gourd weighing 164lbs., and a turban gourd, were exhibited.

53. *An Experiment on the Application of Heath and Moor Earths to Plants.* By the Grand-Ducal Head-Gardener, M. Bosse, of Oldenburg.

Heath earth is our peat soil, and is found on surfaces abounding with common heath, *Erica vulgaris*: it consists of decayed plants of heath, and fine white sand. Moor earth is our bog earth, and consists of decayed peat: some sorts of it are unfit for the growth of plants; and the very best sort, which is that found on the surface of peat bogs or moors, requires to be kept in a heap, and frequently turned over, for some years before being used. What is called in Germany *dammerde*, is the mud of ponds more or less sandy, and used with bog earth in the manner of our loams. Forest earth (*walderde*) is the surface turf from a wood, well rotted, turned, and mixed: it is also used like our loams, and in it most American plants, and many others usually grown in peat and loam, will thrive freely. A list is given of exotic plants suitable to each of these earths, and to certain proportions of them. It is observed

that a mixture of moor earth with loam is suitable for most tropical trees with leather-like leaves, such as *Ixòra*, *Gardènia*, *Cássia*, *Blètia*, *Ardísia*, *Laúrus*, &c. Few tropical plants with ligneous stems thrive in light vegetable soil or peat earth. Even some *Cacàlias*, *Crássulas*, and other succulents, thrive better in sandy clay than in vegetable earth and sand, which is the soil suitable for most succulents.

54. *On the Culture of the Morina pérsica.* By M. E. Seitz, Curator of the Botanic Garden at Munich.

The *Morina pérsica* is a beautiful green-house perennial, of the natural order *Dipsacæ*, with red and white flowers, highly scented, in July and August. Tournefort was the discoverer of this beautiful plant, in the Levant, near Erzerum, about 1701. Though Erzerum is in the same latitude as Rome, yet being much higher above the level of the sea, the climate is colder. A great deal of snow had fallen at Erzerum in the night between the 2d and the 3d of July. Hence it is that the *Morina pérsica* can bear the climate of Germany with a little protection, during the severest weather of winter. The general appearance of the flower of *Morina* is like that of a thistle: its root is large, fusiform, and fleshy, very sensible of external injury, and in gardens very frequently dying from accidents of this kind. M. Seitz has cultivated it very successfully for ten years, by the following method:—

The seeds must be sown in the beginning of winter, where they are finally to remain, it being extremely difficult to transplant the seedlings on account of their long fusiform roots. During the severe weather of winter, protection must be given from the frost, by dry litter or leaves. By the end of April, or beginning of May, the seeds will begin to come through, when they must be kept quite clear of weeds. The usual culture to plants of this kind, in such a state, must be given till the following winter, when they should be covered with hand-glasses or a hot-bed frame, and the glasses well covered with leaves or litter. On the return of mild weather in spring, expose the plants as before, remove decayed leaves and weeds, stir the soil, and in the July following some of the strongest plants will come into flower, and continue in that state till December. Proceed in the same manner through the third winter and spring, and in the third summer the whole of the plants will come into flower. Seeds should be saved, and fresh sowings made every year, as the plant is not easily propagated by division, layers, or cuttings, and is besides very apt to die off in the winter.

In England, as we are informed in Sweet's excellent compendium, the *Botanical Cultivator*, the *Morina* is generally kept in the green-house, in any light rich soil, and is increased by dividing at the root, or by seed.

55. *On the Steck Apple, or Codlin.* By M. F. Wiederhold, of Hochster.

The apple alluded to is our Carlisle Codlin, which is said to be abundant in Westphalia, but not very common in Prussia. It is recommended to be generally cultivated, as being easily propagated by cuttings, as ripening in August, as seldom failing to bear a good crop even in bad seasons, as applicable to various culinary uses, not bad for the dessert, and as keeping six months.

56. *Observations on the Culture of the Double Georgina, Georgina variabilis, our Dahlia sambucifolia.* By M. Fintelmann, Royal Gardener in the Island of Peacocks at Potsdam.

The dahlia received about the same time two different names from two different botanists, unknown to each other. Cavanilles, who discovered the plant, dedicated it to Andrew Dahl, a Swedish botanist, author of a small volume of botanical observations, while Willdenow named it in memory of Dr. Georgi of Petersburg. The name of Cavanilles having been first given, and also given by the discoverer, according to the etiquette of naturalists claimed to be preferred, and dahlia has accordingly become the general name, and is adopted in subsequent parts of the *Prussian Horticultural Transactions*.

M. Fintelmann has given a complete course of dahlia culture; but, as it differs little from that in general use in this country, we shall merely glance at his divisions of the subject.

Raising from Seed.—A moderately warm dung-bed is formed in the beginning of March, and the seed thinly sown in leaf mould, in pots or boxes, and covered with the same soil, mixed with river sand, to the depth of half an inch. If the seeds are fresh, the plants will be fit to prick out early in April, and they should be nursed in another bed till the beginning of May, when they may be planted out in the open garden.

Soil.—Any garden earth, but it must be well supplied with moisture. M. Fintelmann uses one part of the natural sandy soil from his garden, one part of soft clay, containing 10 per cent. of marl, and one part of rotten wood earth from the carpenter's yard. In this mixture both young and old plants grow vigorously. Holes, in the situations where dahlias are

to be planted, are made 15 in. in diameter, and 15 in. in depth, and filled with this soil; and in these holes, so filled, the young plants are turned out, or the old roots inserted. To retain the moisture, and protect the root from excessive heat, the surface is covered with moss. Liquid manure is applied two or three times in the course of the summer.

Position.—Shelter from high winds is essentially necessary; and, where masses of them are to be planted together, the tallest growers must be planted farthest from the eye, and so as not to overtop the dwarf sorts. M. Fintelman considers dahlia as a particularly desirable plant for a new garden the or shrubbery; “because,” says he, “it will grow in a rich, moist soil, to the height of 16 ft. in two months, and yearly, afterwards, to the same height in the same soils, provided moisture and manure be abundantly supplied.”

We notice this as being somewhat at variance with the experience of Mr. Smith, of the Horticultural Society’s garden, who states (*Gard. Mag.*, p. 181.) “that if it is desirable to have dahlias always in one situation, it is necessary to renew the soil, by trenching it deeply the second, and taking it out and replacing it the third and succeeding years.” He subjoins, “it will seldom be found advisable to add manure; fresh soil is all that is necessary.” We may observe, in confirmation of M. Fintelmann’s experience, that dahlias have been grown in the flower-garden at Hylands, on the same soil, without trenching, manure, or fresh soil, for several years; and every year they have attained, though not to the height of 16 ft., yet to as great perfection as the dahlias of the Horticultural Society’s garden, or as dahlias do attain to in this country. This we were informed by Mr. John Smith, the flower-gardener at Hylands, who, like his namesake of the *Horticultural Transactions*, is a well-educated and most judicious young gardener. We should be sorry, indeed, if any one should be induced to neglect the culture of this fine autumnal flower from an idea that renewing the soil is necessary; because it would not be easy to do this in extensive shrubberies, where the dahlia is so great an ornament. We do not mean to say, however, that fresh soil, which is of great advantage in the culture of every other plant, is not likewise of great advantage in the culture of the dahlia.

“Es lassen sich damit auch besonders Gartenbefriedigungen oder Wände decken, und die Georgingen gewähren zugleich durch das mannigfaltige Farbenspiel von Schneeweiss bis zum dunkelsten Violett, Purpur- und Schwärzlich-Bluthroth, durch Schwefelgelb, Orange, und Scharlach in allen Schat-

tirungen dem Auge einen Schönen Anblick, wenn man jede Farbenart besonders in Massen aufstellen kann."

Of this sentence we give an exact translation, for the consideration of our correspondent, *Variegata*. (p. 485.)

" Dahlias may also be used as screens for concealing walls and other fences or unsightly objects, presenting at the same time a beautiful spectacle to the eye by the variety of their colours, from snowy white to the darkest violet, purple blood-red and blackish blood-red, sulphur colour, orange, and scarlet, in all their shades, especially if we can contrive to group the colours in masses."

Propagation.—Usually by division of the roots, taking care to have a bud on each tuber; also from cuttings. Seeds are produced by the single varieties in the greatest abundance, and also frequently from the double flowers. From the progeny of such seeds an endless variety is obtained, two seedling plants seldom having flowers alike. Seedlings, treated as before described, flower the same year in July and August.

Use of the Dahlia.—The stalks and leaves make a wholesome food for pigs, sheep, and asses; they are also eaten by deer and cows, and they are, in a dried state, readily eaten by lambs and young goats. When cultivated as cattle food, the stalks may be cut over two or three times in one season. The tubers may be eaten both by men and cattle, but they are neither so agreeable nor so nourishing as those of the potato.

57. *Extracts from the Transactions of the Society at their Eleventh Meeting, November 2. 1823.*

The scheme of a school for gardeners (p. 92.) was laid before the Society, approved of, ordered to be carried into execution, and an extract from the statutes and plan of management published.

58. *Extracts from the Twelfth Meeting of the Society, held December 7. 1823.*

Robínia Pseùd-acàcia, strongly recommended for poor sandy soils.

59. *Remarks on the Property and Use of the Bread-fruit, Artocárpus incísa*. By M. Beyrich, Gardener in Brazil.

The uncultivated varieties of the bread-fruit bear seeds, but the cultivated varieties do not. When the wild fruit is ripe on the tree, the seeds, which are larger than almonds, begin to germinate, and must be planted immediately that

they are taken out of the fruit, because, if suffered to dry, they will not grow.

The bread-fruit, called Jacca, with entire leaves, *Artocárpus integrifolia*, has round fruit from 1 ft. to 1½ ft. in diameter; the flesh when ripe has a sweet mealy taste, but, being very inferior to the true bread-fruit, *Artocárpus incisa*, is seldom cultivated.

There is an undescribed species of bread-fruit, a native of Brazil, and found in the large forests near Rio Janeiro; the fruit is from 2 to 4 ft. long, and from 6 in. to 2 ft. in diameter, and weighing from half a hundred to two hundred weight. One tree often bears from fifty to sixty fruit. The flesh resembles that of the entire-leaved bread-fruit, or Jacca, and is cut into slices and roasted by the natives.

60. *Some Observations on the Culture of the Pine-apple in Brazil.*
By M. Beyrich, Gardener in Brazil.

The pine-apple, though a native of South America, is not found wild near Rio Janeiro, but is very abundantly cultivated there. As some parts of the country appear more appropriate for its culture than others, I shall here give a description of such places, as affording hints for its culture in Europe

The pine-apple in its wild state is found near the sea-shore; the sand accumulated there in downs serving for its growth, as well as for that of most of the species of the same family. The place where the best pine-apples are cultivated is of a similar nature. In the sandy plains of Praga velha and Praga grande, formed by the receding of the sea, and in which no other plant will thrive, are the spots where the pine-apple thrives best. The cause of this lies evidently in the composition of the sand, which chiefly consists of salt, lime from decomposed shells, and a very little vegetable mould. Warmth, lime, salt, and moisture, seem therefore to be the principal ingredients in which the pine-apple thrives. Sand will take a very high and continued degree of warmth, being often heated by the sun so much as to scorch vegetation, and yet it seldom dries to a greater depth than from 8 in. to 1 ft. Sea salt is well known for its property of attracting the nocturnal damps, and retaining them a long time. The lime of the shells seems to be the principal manure, which has also been proved by the English here, who, by manuring their pine-apples with a mixture of stamped oyster-shells with vegetable earth, produce very large fruit. The natural mould, usually slightly mixed with sand, is partly of a vegetable, and partly of a mineral origin.

The treatment of the plants is very simple. As the fruit ripens in January, the young suckers from the roots are taken off in April or May, and planted in the newly cleaned fields at a distance of from $1\frac{1}{2}$ to 2 ft. from each other, and the strongest of them produce fruit in the following year, seldom weighing above 3 or 4 lbs.; but those which do not fruit the second year, grow very large, and their fruit often weighs from 10 to 12 lbs.

61. *Description of Angulda lurida*, Ruiz et Pav. *Orchidéæ*. By Professor Link and Director Otto.

This is an orchideous epiphyte from Brazil, with five-nerved leaves, a many-flowered scape, and converging petals yellow within and green without. It was sent from Brazil to the Berlin garden, in 1823, by M. Beyrich; is of easy culture in the stove, and may be purchased from Messrs. Loddiges.

62. *Description of a movable Forcing-house for early Forcing*. By M. Schulze, Garden Director, &c., of Sans-Souci.

The front and roof are composed of glass sashes, the former at an angle of about 12° , and the latter at an angle of about 30° to the horizon. Part of the roof sloping to the north is opaque, and this with the back and ends is composed of boarded surfaces, with interstices of about 6 in. wide, filled with dry hay. The other details are easily understood.

63—65. *Papers relating to prizes given and to be given, to committees, and to other subjects of purely local interest.*

ART. II. *Annales de la Société d'Horticulture de Paris, et Journal spécial de l'Etat et des Progrès du Jardinage*. Tom. I. Second Livraison, pour Octobre, 1827. Paris. 8vo. Price in Paris for twelve Numbers, or one year, 15 fr.; in London, 18 fr.

THIS work is arranged in four divisions:— I. Memoirs; II. Notices, Analyses, &c.; III. Miscellanies and News; and IV. Bulletin Bibliographique, or Catalogue Raisonnée of Books on Horticulture.

I. *Memoirs*. — 1. The first article is an account of the horticultural fête, held in the Chevalier Soulange-Bodin's gardens at Fromont, on the 30th of August, 1827; and which, it would appear, is the first of a series intended, like those of the Chiswick garden, to be held annually. Numerous invitations were sent in the name of the Chevalier Soulange-Bodin and his family, which produced an attendance of from 500 to 600 persons, who were received in a frank and natural manner, and were charmed by the elegant variety of the garden, the

beauty of its situation and aspects, and the agreeableness of its promenades. The company arrived from Paris before ten o'clock in the morning, and by mid-day the parish church of Ris was full, when a solemn mass was executed, the music of which was composed for the occasion. In this mass, some of the first singers of Paris, whose names are given, assisted in the musical part. After the mass, the members of the Horticultural Society, with their president, the Vicomte Héricart de Thury, at their head, and the other officers of the society, went through M. Soulange-Bodin's extensive establishment of hot-houses, and at last found themselves in the middle of a circle of ladies, seated under an awning, while their ears were impressed with a music which conveyed a sentiment eminently religious, and which seemed to be the service of the church of nature, for the purpose of expressing the gratitude of man towards the Author of so many wonders. Soon afterwards the spectators separated in little winding columns, along the serpentine paths of the garden, towards a new fountain, which played that day for the first time, and which was dedicated by the proprietor of Fromont to "Friendship and the Arts," in the person of M. Plantade, an eminent musical composer. Here another piece of music was executed. After amusing themselves for some time in different parts of the garden, a vast tent was opened, in which the company sat down, 200 at a time, to a *banquet vraiment horticultural*; that is, of delicate cheer and excellent wines, interspersed with rare, curious, and high-priced plants. Music was again in requisition, and, as the ultimatum of gaiety, *et le plus noble élan*, the President proposed the health of "The King, the Protector of Agriculture, Industry, and the Arts."

Nosegays were prepared for the ladies, who were also presented with the first number of the *Annales de la Société d'Horticulture*. Some new subscribers to the society were procured by this means. A concert and a ball succeeded, and the latter lasted till the following morning. So numerous were the carriages, that Fromont seemed joined to Paris, and all the efforts of the amiable, liberal, and enlightened proprietor were seconded by the finest weather.

2. On the Hybrids obtained by the Baron Melazzo at Palermo, the Chevalier Soulange-Bodin at Fromont, M. Fion at Paris, and the Honourable and Reverend William Herbert in England. By Baron Hamelin, of Franconville.

Baron Melazzo deprived *Amarýllis vittata* of its anthers before they were expanded, and fecundated its stigma with the pollen of *Amarýllis reginæ*. In due time *Amarýllis*

Gravina (in honour of D. F. Gravina, Prince de Lascara, gentleman of the bedchamber to the King of the two Sicilies) was produced, and pronounced to be one of the finest of the genus; it is cultivated and sold by the Chevalier Soulange-Bodin, with whom it is said to have produced seed.

Soulange-Bodin having fecundated *Magnolia Yulan* with the pollen of *M. obovata* var. *discolor*, Dec., the *M. purpurea* of the British nurseries, obtained a magnificent hybrid, named *M. Soulangiana*, and which is to be had in the Clapton and other London nurseries. We are much inclined to think this hybrid will not be permanent, and that it will soon return to *M. Yulan*.

M. Fion, a nursery-florist, Rue des Trois Couronnes, No. 14., à Paris, justly celebrated for his fine collection and excellent culture of exotic trees and shrubs, placed a *Daphne indica* and a *D. collina* so near together in the open air that their branches intermixed. The desired result took place; *D. indica* produced one seed, which was sown in the autumn of 1820, came up in 1821, and in the spring of 1822, its shoot was cut over by the surface, and grafted upon *D. collina*. In two years it came into flower, and is recognised by some of the qualities of both of its parents. Its leaves are more beautiful than those of *D. indica*, and it is more hardy than that species; it has a fine odour, and remains a long time in flower. M. Fion has produced another hybrid between *D. collina* and *D. Cneorum*. Both plants, we believe, are now in the London nurseries.

In England, Mr. Herbert has obtained upwards of a score of hybrid *Crinums* which ripen seeds, independently of other hybrid *Amaryllideæ*. Linnæus is said to have admitted hybrids in the genera *Veronica*, *Primula*, *Campánula*, *Solanum*, *Chenopodium*, *Tropæolum*, *Rhèum*, *Cotylèdon*, *Sorbus*, *Rosa*, *Gèum*, *Chelidonium*, *Papàver*, *Delphinium*, *Geranium*, *Trifolium*, *Centaurèa*, *Axyris*, *Amaranthus*, *Potèrium*, and *Agaricus*; he also admitted other species which he suspected to be hybrids, and designated them by the adjective spurious; and many which he considered approaching to that state, and designated by the specific names terminating in *ioides*. Kohlreuter obtained a great many hybrids, and no man more than the English nurseryman, Colville.

From all this the writer concludes that hybrids are formed by nature; an opinion which, he says, he holds in common with Linnæus, Salisbury, and some other eminent botanists.

After giving the instances of a hybrid between *Ranunculus gramineus*, and *R. platanifolius*, created in the botanic garden

of Brussels in the year 1820; of various hybrids between *Gentiana lutea* and *purpurea* found on the summit of a mountain of Savoy; of the hybrid *ixias* and geraniums found at the Cape; and showing how probable it is that insects, which, it is well known, have predilections for particular plants, should be the means of creating hybrids; he draws the following conclusions:—

Hybrids are every now and then produced by nature.

Hybrids are daily created by man.

A genus of which there is only one species, seldom acquires new species, because it has no opportunity of hybridising; those, on the contrary, which have a great many species, especially if they are natives of the same part of the globe, have their numbers increased, because they have many opportunities of hybridising.

May it not, therefore, asks Baron Hamelen, be concluded that many of the plants ranked by botanists as species, are hybrids?

We should answer, yes; some few are undoubtedly hybrids; but we do not think it likely that any hybrid, whether created by nature or art, can be perpetuated by seed, and remain distinct for any length of time. Much, however, may be said on both sides of the question. The idea that most of the species which now exist have been produced in the course of ages by accidental crosses is, as M. Decandolle observes, very seducing, as tending to trace a great number of complicated effects to one single and easily comprehended cause; but M. Decandolle adds, that the rarity of hybrids in nature is against such a conclusion.

II. *Notices, Analyses, &c.* — 1. The Flower Market of Paris. By the Abbé Berlière. This market has existed from a very early period on the quays of the Seine. In 1818 it was enlarged. The market-days are Wednesdays and Saturdays; gardeners who are entitled to attend the market have each a place allotted to them, for which they pay 25 cents. per market-day. From the 1st of May to the 1st of September, the market continues from five o'clock in the morning, till eight o'clock in the evening; from the 1st of September to the 1st of March, from seven o'clock in the morning to five o'clock in the evening; and from the 1st of March to the 1st of May, from six in the morning till six in the evening. This market is exclusively for green-house plants, and other plants in flower in pots, and for gathered flowers. There is another market adjoining, for common nursery articles, including roots of herbaceous plants, which is held on the same days and during

the same hours. Attached to this last market is an officer, assisted by expert gardeners, who examines all the plants, and destroys on the spot all those which have bad roots.

The flower market is held entirely by women, who employ the greatest pains in arranging and disposing of their plants, as well to display the variety of their foliage, as the shades of their flowers. The retail florists come here early in the morning, purchase their flowers from the first hand, take them home, rearrange them, and retail them in their shops at a great profit.

Every sort of hardy and exotic shrub, bulb, and flower, in general culture, will be found here; often the newest varieties of roses, the camellia, the tree pæony, different species of daphne, rhododendron, and azalea, gardenias, correas, China roses, Cape heaths, magnolias, Cape bulbs, and even the *Strelitzia reginæ*: in short, almost all the New Holland plants introduced to France may, at one period or another, be found in this market. The price is very reasonable; often, indeed, plants are got here for very little, which elsewhere cost a good deal.

At this market M. Lemon exposes his finely cultivated new varieties of geranium, obtained from seed; M. Dubard, his Chinese and New Holland plants; and Mesdames Boulard, Mathieu, Julienne, Devert, Joly, Lot, Durand, &c., abundance of flowers of all sorts. The merchants of Paris purchase flowers here to ornament their shops; the confectioners, to display at fêtes and balls; the priests, to decorate their altars; and pious children, to plant on the graves of their parents, in the Cemetery of Père-la-chaise, or other burial grounds. The estimated sale per annum is 300,000 *fr.* (12,500*l.*) for flowers, and 100,000 *fr.* (4166*l.* 13*s.* 4*d.*) for nursery articles.

The flowers and trees in these markets require a great deal of care and attention from those who sell them; yet, as in similar cases, it is often complained by the purchasers, that the flowers fade as soon as they get out of their hands. Of the gardeners it has been said that, before delivering plants sold in pots, they turn out the ball, and place in the bottom of the pot a piece of unslaked lime, which, as soon as the purchaser waters his plant, swells, and burns its roots; or, if the lump has been large, it bursts the pot. The Abbé Berlèse observes that this idle report has arisen from the circumstance of pieces of old plaster being used, as drainage to pots, by the Paris gardeners.

2. Cours de Culture et de Naturalisation des Végétaux. Par André Thouin; publié et annoté par M. Oscar Leclerc.

Paris. 3 vols. 8vo, with an Atlas of 65 pls. in 4to. 35*fr.* Reviewed by C. Bailly de Merlieux.

M. Leclerc, whom we have the pleasure of reckoning among the number of our correspondents, is a nephew of the late Professor Thouin, and attached to the administration of the Jardin du Roi. The papers of which this work is composed were left him by his uncle, one of the most enlightened and methodical writers on gardening, and courteous and benevolent of men. To those who were not personally acquainted with the professor, it may be sufficient to refer to his eulogium pronounced by Professor Cuvier (*Gard. Mag.*, vol. i. p. 226.), and to his writings in the *Annales du Museum d'Histoire Naturelle*. As we intend to analyse M. Leclerc's work at an early opportunity ourselves, we shall only observe here, that it is favourably spoken of by M. Bailly, and a long extract given from the chapter treating on the principles of the naturalisation of plants.

III. *Miscellanies and News.* — Leaves used instead of dung in making hotbeds. Auriculas, manured with soot after flowering in spring, flowered again the succeeding autumn. The Egyptian, or potato, onion has produced seeds in the botanic garden of Aisne, and young plants have been raised from them. Mr. Brown, jun., of Stow's directions for preventing mice from eating newly sown peas, extracted from the Gardener's Magazine.

The questions asked, how far smoke and coal gas are injurious to plants; what is the cause of certain yellow blotches like excrescences [doubtless, fungi], which have appeared on the leaves of pear trees, have materially injured their growth, and prevented them from bearing a crop of fruit, and how to destroy the *Coccus lanigera* in hot-houses.

Extracts are given from what passed at different meetings of the Society from the 11th of June to the 12th of September. The situation for a garden for the Society was discussed on the 6th of July. On the 18th of July, M. du Petit-Thouars presented several works on horticulture, but claimed the reservation of them for a short time till he had terminated a work which he is now printing, entitled *Chronological Biography of Gardeners*. It was determined to publish the *Annales* of the Society monthly, in 8vo; and on the 22d of August, the Chevalier Soulange-Bodin was reelected general secretary. M. Soulange-Bodin, as before noticed (p. 334.), offered the sum of 400 *fr.* to the person who should discover the means of destroying the grub of the cockchaffer. A list of new members is added.

IV. *Bulletin Bibliographique.* — The titles of ten works are given, some of which have already appeared, and the remainder are now recorded in our catalogue.

We are highly gratified to find that this Society may now be considered as firmly established, and as likely to go on and prosper. It will form one more point of union between the two countries, and the more of these points the better for the improvement and happiness of society.

The more intimately the British and French people know each other, the greater will be their mutual confidence and esteem, and the greater will be the moral, political, and general improvements of each nation. It is acknowledged by those who are much better able to judge than we are, that at least the manners of the people of England would be improved by the adoption of various practices from the French; and the French people, who in reality are more liberal than we are, readily allow that they may profit in various ways by imitating the English. They are thus profiting, and so are we by imitating them to a certain extent. It is acknowledged that the lower and middling classes of the people of Paris, and other large towns in France, have a very different opinion of the English from what they had during the late war; and we have heard it asserted by one of the first practical engineers of France, that he believed, if the two countries should remain another fifteen years at peace with each other, such would be the mutual esteem and the mutual commercial advantages, and such, in short, the power of public opinion, that it would be impossible for the rulers of the two countries to engage the inhabitants in a mutual war. It is gratifying to find that even such ideas are entertained, whether they should ever be realised or not; and it is evidently proper to encourage and disseminate them. We repeat, therefore, that we rejoice in the establishment and prosperity of the Paris Horticultural Society, with reference to such a result.

ART. III. *Catalogue of Works on Gardening, Agriculture, Botany, Rural Architecture, &c., published since December last, with some Account of those considered the most interesting.*

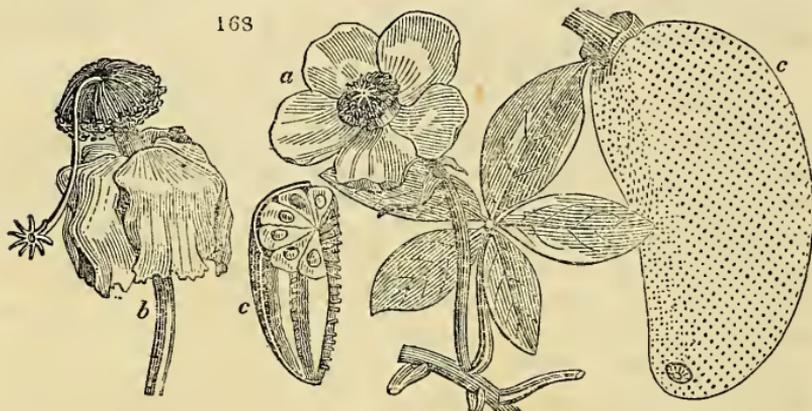
BRITAIN.

Curtis's Botanical Magazine, or Flower-Garden displayed; New Series. Edited by Dr. Hooker. In 8vo Numbers. 3s. 6d. coloured; 3s. plain.

No. XIII. for January, contains

2791 to 2797. — *Adansonia digitata*; *Bombacææ*. A tree of Senegal, Egypt, and Abyssinia, of moderate elevation; but whose trunk is from

20 to 30 ft. in diameter, soon dividing into branches of great size, bearing a dense mass of digitate leaves, with axillary flowers, solitary, very large, with white petals and purple anthers. There can be no question of this being the largest known tree. Though introduced to Britain so long ago as 1724, it has never flowered, and is not likely to do so in our stoves, without more room than can in general be afforded. Dr. Hooker's figure (*fig. 168.*) is from specimens preserved in spirits. The flowers (*a*) are



handsome on their first expansion, but put on a very different appearance at a more advanced period (*b*); both flowers and fruit (*c*) are pendent. Humboldt speaks of this tree as "the oldest organic monument of our planet." Adanson makes the following calculation of its age, diameter of the trunk and height.

A tree	1 year old is	-	1 or $1\frac{1}{2}$ inch	in diameter,	and	5 feet	in height.
	20 years old is	-	1 foot	-	-	15	
	50	-	2 feet	-	-	22	
	100	-	4	-	-	29	
	1000	-	14	-	-	58	
	2400	-	18	-	-	64	
	5150	-	50	-	-	75	

The roots are of an extraordinary length, with numerous ramifications. Adanson found the taproot of a tree, whose trunk was 77 ft. in circumference, 110 ft. long. The branches spread out drooping at the extremities, and are so entirely covered with leaves as to form a nearly hemispherical mass of verdure, from 140 to 150 ft. in diameter, and from 60 to 70 ft. in height. (See the vignette in *Macartney's Embassy to China*, p. 141.) "The wood is pale-coloured, light, and soft, so that, in Abyssinia, the wild bees perforate it, for the purpose of lodging their honey in the holes, which honey is reckoned the best in the country. I know not that the wood itself is applied to any particular use, but the negroes on the eastern coast of Africa employ the trunks in a certain state to a very extraordinary purpose. The tree is subject to a particular disease, owing to the attack of a species of fungus which vegetates in the woody part, and which, without changing its colour, or appearance, destroys life, and renders the parts so attacked as soft as the pith of trees in general. Such trunks are then hollowed into chambers, and within them are suspended the dead bodies of those who are refused the honour of burial. There they become mummies, perfectly dry and well preserved, without any farther preparation or embalment, and are known by the name of *guiriots*."

This plant, like all of the neighbouring order of *Malvaceæ*, is emollient and mucilaginous in all its parts. The leaves, dried and reduced to powder, constitute *labo*, a favourite article with the natives, and which they mix daily with their food, for the purpose of diminishing the excessive perspiration to which they are subject in those climates, and even the Europeans find it serviceable in cases of diarrhœa, fevers, and other maladies.

"The fruit is, perhaps, the most useful part of the tree. Its pulp is slightly acid and agreeable, and frequently eaten; while the juice is expressed from it, mixed with sugar, and constitutes a drink which is valued as a specific in putrid and pestilential fevers. Owing to these circumstances, the fruit forms an article of commerce. In Bowdich's account of Banjole it is mentioned that this fruit possesses an agreeably acid flavour, and, being very abundant, it forms a principal article of food among the natives, who season many of their dishes with it, especially a kind of gruel, made of corn, and called *roöy*. Mr. Bowdich farther observes that this tree loses its leaves before the periodical rains come on. The Mandinjos convey the fruit to the eastern and more southern districts of Africa, and through the medium of the Arabs it reaches Morocco, and even Egypt. If the fruit be decayed or injured, it is burned: the lees are mixed with rancid oil of palm, and the negroes use it instead of soap."

Málva Morèni, a native of Italy, about Naples. "Whether or not this plant may be a variety of *M. Alcæa* must be left for future observation." — *Crôton castaneifolium*; *Euphorbiaceæ*. An annual from Trinidad, with "nothing to recommend it for cultivation except in the gardens of the curious." — *Oncidium papilio*. An orchideous bulb, of a purple colour, with purple brown coriaceous leaves, spotted and blotched with green, and solitary flowers, of a bright yellow colour, with red brown blotches; large and beautiful. From Trinidad to the Glasgow botanic garden; where it flowered in 1826. It is among the most singular and beautiful of the extensive family of epiphytes with which our hot-houses are now so abundantly stored." — *Orobolus sessilifolius*. A hardy perennial from Tauria, with grasslike leaves, and handsome purple flowers in July. — *Neottia aphylla*; *Orchideæ*. From Trinidad to the Glasgow botanic garden. "In a state of cultivation, entirely destitute of leaves; and the whole plant of a singularly lurid reddish green colour."

No. XIV. for February, contains

2798 to 2804. — *Nepenthes distillatòria*. A noble specimen from Dr. Graham, grown in the Edinburgh botanic garden, and beautifully engraved and coloured of the natural size. "Our plant differs from the *N. distillatòria* of Loureiro, in the lid never closing after it once opens; but the power of alternate opening and closing, even in his plant, was probably imaginary, as his statement of the pitchers receiving the night-dews certainly is. The fluid which they contain is undoubtedly a secretion, but for what purpose does not appear. It is stated to have nearly filled one third of the pitcher in Messrs. Loddiges' plant; but with us it never much exceeded a drachm." — *Gonolobus niger*. A twiner from Mexico, with heart-shaped oblong leaves, and deep black purple flowers in October. Stove. Whether it be a ligneous or herbaceous plant, what may be its duration, its height, or year of introduction, is not mentioned, a deficiency of which we have frequent occasion to complain. — *Polemònum Richardsòni*. A beautiful little perennial, with elegantly cut leaves and blue flowers, gathered by Dr. Richardson, in 1825, in deep sandy soil, on Great Bear Lake, in 66° north latitude, and which flowered in a cold-frame in the Edinburgh botanic garden, in October last. It was also gathered by Mr. Menzies, during his celebrated voyage with Captain Vancouver, on the north-west coast of America. — *Pòthos macrophýlla*. Stove,

and the easiest culture. — *Bæckia frutescens*. A twiggy shrub, from China; green-house; and the easiest culture. — *Banksia marcescens*. — *Dorstenia tubicina*. A rare and curious herbaceous plant; from Trinidad to the Glasgow botanic garden. The fragrance of the root has induced the inhabitants of Peru to employ it in the room of *Dorstenia contrayerva*.

Edwards's Botanical Register. Continued by John Lindley, F.R.S. L.S. &c.
In 8vo Numbers. 4s. coloured.

No. CLV. for January, contains

1117 to 1125. — *Técoma capensis* (the *Bignônia capensis* of *Hortus Kewensis*); *Bignoniaceæ*. "A hardy green-house plant, of great beauty, growing freely in light rich soil, and rooting from cuttings under a hand-glass." The flowers are tubular, orange red, and about 2 in. long. — *Mimulus moschatus*, Musk-scented Monkey Flower; *Scrophularinææ*. A truly charming hardy perennial; from Mr. Douglas to the Horticultural Society. "It was found growing sparingly on the margins of springs in the country about the river Colombia, in North-west America. The whole plant is covered with a soft glandular hairiness, which emits a powerful but extremely pure smell of musk, that perfumes the atmosphere in hot weather, or if the plant is trodden upon. In the cold months of winter the scent is much less powerful. The blossoms are a clear bright yellow, and appear in profusion during all the summer. To be cultivated in perfection, it should be planted in peat soil, in a shady damp border. It is propagated by seeds, or by divisions of its creeping roots."

Ænothèra quadrivulnera; *Onagrariææ*. A hardy annual, not unlike that very beautiful plant *Ænothèra Lindleyana*. From the north-west coast of North America, by Mr. Douglas, to the Horticultural Society. In the open border it forms a diffuse patch, with stems about a foot in length: if grown in a pot, for which it is admirably adapted, it becomes a dense tuft of stems, about 6 in. high, which are almost covered with leaves, and elegant lilac flowers, from June till the plant is destroyed by frost." — *Dianella revolûta*; *Asphodèleæ*. From Port Jackson and the tropical part of New Holland, by Mr. Charles Fraser, to the Horticultural Society, in 1824. Mr. Lindley has given it the English name of "Few-flowered Port Jackson Dianella," which, consistently with our opinion that the English specific name ought always to be a translation of the scientific specific name, we cannot at all approve of. We do not, however, mean to say that much would be gained by calling this species *Revolute-leaved* rather than *Few-flowered*; but we prefer giving the English names, as we do every thing else, on a fixed definite principle, and to that principle we adhere. The practice of giving English names, which shall convey some idea in addition to the systematic name, we object to as too indefinite; and as preventing gardeners and others, ignorant of the Latin language, from deriving that knowledge of the meaning of Latin words which they would derive by literal translation, and by any additions (as *leaved*, for instance, in translating *revolûta*, *revolute-leaved*) being put in a different type.

Pentstemon Richardsonii; *Scrophularinææ*. "A handsome hardy perennial, growing freely in peat among American plants, and flowering towards the latter end of the summer." It was found by Mr. Douglas in the vicinity of the Colombia, and named by him in compliment to Dr. Richardson, the celebrated companion of Dr. Franklin in the late overland expeditions to the shores of the Polar Sea. — *Pentstemon angustifolium*. "A very handsome plant, with rose-coloured tubular flowers, and, we believe, a hardy perennial." It was found by Messrs. Humboldt and Bonpland in Mexico, at an elevation of 7920 ft. above the level of the sea, upon rocks overshadowed by trees. It flowered in Mr. Tate's nursery, Sloane Street, in the summer of 1827. — *Oxalis floribunda*; *Oxalidææ*. Sent to

the Horticultural Society by Professor Lehmann, in 1827, and supposed to be a native of South America. "If grown in a pot in a cool green-house, it flourishes exceedingly, soon acquiring the height of a foot or 18 in., and producing, in great profusion, loose bunches of rose-coloured flowers, which are placed upon the end of peduncles diverging from the main stem at nearly right angles, and giving the whole plant the air of a vegetable chandelier of many branches."

No. CLVI. for February, contains

1124 to 1150. — *Lupinus leucophyllus*, White-leaved Lupine. A fine branching perennial; "a native of woodless sandy deserts, from the great falls of the river Colombia in North America, to the sources of the Missouri, among the Rocky Mountains, where it was discovered by Mr. Douglas. It is a branching plant, covered all over with long white hairs, which, in this wild plant, are so abundant as to conceal the epidermis. The flowers grow in long slender racemes, and are either white, or tinged with light pink.

Mimulus floribundus. A neat hardy annual, found by Mr. Douglas on moist rocks in the interior of the districts of the river Colombia. It begins to blossom in August, and remains in beauty till the middle of October: the flowers expand in the morning, and close by about mid-day. Raised with facility from seeds sown in April upon a warm damp peat-border. The young plants should be thinned out well, or they are apt to choke each other. In consequence of the smallness of the seeds, it is best to mix them with pit-sand or wood-ashes before they are committed to the earth."

Gonolobus viridiflorus; *Asclepiadææ*. A curious stove twining shrub, from South America; propagated very readily by cuttings of the ripened wood. — *Gloxinia cauléscentis*. "By far the finest of this handsome genus that has yet appeared, and exceedingly worthy of cultivation. It requires, like the other gloxinias, the heat of the stove; and, we presume, is to be propagated in the same way as they are."

Cratægus oxyacanthoides. A handsome small tree, from Paris; and, probably, found in other parts of Europe. "Variable as is the European Hawthorn, it is distinguishable into about three principal forms, which represent as many botanical species. Of these, the first with deeply pinnatifid leaves, round smooth ovaria, and compact cymes, is the true *C. Oxyacantha*; to which are to be referred, as varieties, *C. laciniata* of Besser, the Pink and Yellow-berried Hawthorns of the gardens and the *C. monógyna* of various authors, with their synonyms. A second form is the *C. fissa* of some of the English gardens, but not of Bosc, which has broad deeply cut pinnatifid leaves, downy beneath, especially at the axillæ, and black fruit: this may be called *C. platyphýlla*. The third form is the subject of this article, to which, undoubtedly, belongs the Double Hawthorn of the gardens; and also, as a remarkable variety, the *C. trifloba* of Persoon: it has peculiarly loose cymes of flowers, and cuneate obtuse leaves."

Sophrónia (*sophrone*, modesty; appearance) *cérnua*. A very remarkable little epiphyte, about 3 in. high, growing readily in decayed vegetable soil among moss, in a hot humid shady part of the stove. In generic affinity it is most nearly akin to *Octoméria*, which differs in having sessile pollen masses, a column without wings, the two lower sepals united at the base, and a three-lobed labellum. *Eria*, which is also nearly allied, belongs to *Malaxidææ*.

Billbergia fasciata; *Bromelidæææ*. A remarkably handsome stove plant. From Rio Janeiro, to the Ballspond nursery. It requires the assistance of a bark-bed, and is propagated by offsets of the spike and root. It has nearly the same relation to the true *Billbergia* that the *Tillandsia nitida* of Professor Hooker bears to the genuine species of *Tillandsia*. The white bands of the

leaves, and the rich rose-coloured bractees of this species, give it a particularly beautiful appearance.

Botanical Cabinet. By Messrs. Loddiges. In 4to and 8vo Parts.
5s. and 2s. 6d.

Part CXXIX. for January, contains

1281 to 1290.—*Mesembryánthemum polyánthon.* “A low bushy plant, of easy culture, requiring the green-house in winter. It will increase by cuttings without difficulty. The soil should be sandy loam. The flowers are in perfection in July and August; they are most abundant, and of a delightful colour, the brilliancy of which is inimitable. If this, and many others of the same family, are taken out of their pots and planted in a sunny border, they will grow and flower in as great luxuriance, probably, as they do in Africa.”—*Anigozánthos flávida*; *Hæmodoràcææ*. A singular plant from New Holland, with stems from 1 to 2 ft. in height, and curious dingy flowers, which appear in summer, and last a long time.—*Pimèlea decussàta*; *Thymèlææ*. An elegant, handsome, bushy shrub, from New South Wales, in 1814. Green-house, and easy culture in sand and peat.—*Naúclea Adìna*; *Rubiàcææ*. A low bushy shrub, flowering freely even when young; smelling agreeably, living in the green-house, thriving in the stove, and of the easiest culture in loam and peat.—*Catálpa syringifòlia*; *Bignoniàcææ*. A well-known beautiful tree, from the banks of the Ohio and Mississippi.—*Erica rígida*.—*Oxýtropis campéstris*; *Leguminòsææ*. A perennial, from Switzerland, of low stature, and only to be increased by seeds.—*Callistèmon scàbrum*; *Myrtàcææ*. Splendid pink flowers in July, and the easiest culture.—*Aster alpìnus* var. *ramòsus*. A beautiful little alpine, about a foot high, with blue flowers all the summer.—*Coreópsis grandiflòra*. A hardy perennial, from North America, by R. Barclay, Esq., growing from 2 to 3 ft. high, and flowering the greater part of summer.

Part CXXX. for February, contains

1291 to 1300.—*Escallònia glandulòsa*. A small half-hardy tree, from China.—*Witheringia montàna*.—*Mesembryánthemum formòsum*.—*Erica thalictriflòra*. Curious, its flowers being dissimilar from those of most other heaths.—*Alstrømèria pelegrina*. A green-house plant of great beauty, from Peru.—*Gloxínia hirsùta*. Stove; curious.—*Asclèpias tuberosà*. A well-known and very handsome perennial.—*Lobèlia corymbòsa*. “A pretty little green-house plant, from the Cape, which was presented to us by our kind friend, Mr. M’Nab, of the Edinburgh garden, a truly splendid establishment, worthy of the modern Athens.”—*Ptèris palmàta*. An elegant stove fern.—*Tradescántia latifòlia*. An herbaceous plant, from Peru, with flowers of a pale blue colour. Green-house; light loam.

Flora Australásica. By Robert Sweet, F.L.S. &c. Monthly. 3s. coloured; 2s. plain.

No. VIII. for January, contains

29 to 32.—*Callistèmon* (*kallistos*, most beautiful, *stemon*, stamen; stamens) *lophánthum* (*lophos*, a crest, *anthos*, a flower); *Myrtàcææ* *Myrtèææ*. An upright, bushy, evergreen shrub, with straw-coloured flowers in a spike, with the branch lengthening out beyond.—*Grevillea rosmarinifòlia*; *Proteàcææ*. An upright, bushy, evergreen shrub, with flowers in terminal racemes, bluish-coloured, or pale red, but reddish before expansion, and the colour finest when most exposed to the air.—*Davállia gibberòsa*, *Gibbous Hare’s foot Fern*. An elegant fern, with the leaves much cut, and so hardy as only to require the protection of a frame in winter.—*Cássia Barclayàna*; *Leguminòsææ* *Cæsalpíneæ*, *Cassièææ*. A handsome, dwarf, evergreen, soft-wooded, branching shrub, with deep golden yellow flowers great part of

the summer. From New Holland to Robert Barclay, Esq., of Bury Hill, in whose garden it flowered for the first time, in the open border, in 1824.

No. VIII. for February, contains

35 to 36. — *Pittosporum tomentosum*. A handsome, bushy, evergreen shrub, from New Holland. — *Mirbèlia* (C. F. Brisseau-Mirbel, author of various works on Physiological Botany and Vegetable Anatomy) *speciosa*; *Leguminosæ Papilionacæ Sophorææ*. A very beautiful suffruticose plant, with linear leaves and bright purple flowers. From New Holland, by Mr. W. Baxter, C.M.H.S., to Mr. J. B. Mackay, F.L.S. H.S. &c. of the Clapton nursery. — *Pultenæa flexilis*; *Leg. Pap. Sophorææ*. A small, bushy, upright, evergreen shrub, with yellow flowers of an agreeable fragrance. From New South Wales, by Mr. C. Fraser, C.M.H.S. colonial botanist, to Messrs. Whitley, Brames, and Milne, of the Fulham nursery. — *Leptospermum obovatum*; *Myrtacæ Myrtææ*. An upright, bushy, evergreen shrub, with white flowers. All these very handsome plants are of the usual culture in loam and peat, and may be preserved through the winter in a cold-pit.

Geraniacæ. By Robert Sweet, F.L.S. &c. Monthly. 3s. each.

Nos. XCVII. and XCVIII. for January and February, contain

385 to 392. — *Pelargonium Russelliænum*, *Princeænum* ("named in compliment to Mr. Prince, nurseryman, at Flushing, Long Island, near New York, who possesses one of the best collections of plants and trees in North America, and exports a great number to Europe annually"); *Dimæria lanceæfolia*; *Pelargonium carnescens*, *Harewoódiæ*, *scitulum*; *Dimæria barbata*; and *Pelargonium Clintoniæ*.

The British Flower-Garden. By Robert Sweet, F.L.S. &c. In 8vo Numbers. Monthly. 3s. each.

No. LIX. for January, contains

233 to 236. — *Phlox pyramidalis*; *Polemoniacæ*. A well-known, handsome perennial. — *Aster patens*; *Compósitæ Carduacææ*. Handsome, with blue flowers, and of the easiest culture. — *Chelidæne atropurpurea*; *Scrophularinææ*. Handsome, growing to the height of 5 ft., and blooming from July to October — *Láthyrus ampicárpos*. A pretty and curious annual, from Syria, producing its flowers the greater part of the summer. Communicated to Mr. Sweet by A. B. Lambert, Esq., in whose garden, at Boyton, this plant survived through last winter with very little protection. After flowering it buries its pods under the soil, whence the specific name.

No. LX. for February, contains

237 to 240. — *Bidens striata*; *Compósitæ Heliánthææ*. A handsome autumn-flowering perennial [?], from Mexico to Bury Hill. — *Scyphánthus* (*skyphos*, a cup or bowl, *anthos*, a flower) *élegans*; *Lóuseææ*. A beautiful, free-flowering, half-hardy annual, from Chile to the Horticultural Society, and to the collection of H. B. Ker, Esq. F.L.S. H.S. &c., of the Regent's Park, a distinguished amateur, and a man of various talents and extensive views. — *Platýstyli* (*platys*, broad, *stylos*, a style or column) *cyænea*; *Leguminosæ Papilionacææ Viciææ*. A handsome perennial, from Caucasus to the Chelsea garden. — *Cypripedium spectabile*; *Orchidéæ Diándrææ*. The plant figured is a beautiful white variety, introduced from North America by Mr. G. Charlwood, F.L.S., of No. 146., Drury Lane, who has imported a number of other species of this genus, of *Sarracènia*, and of other genera, for sale.

Cistineæ. By Robert Sweet, F.L.S. &c. In 8vo, every alternate Month. 3s.

No. XVI. for January, contains

61 to 64. — *Heliánthemum punctátum*. Annual, herbaceous, with a branching stem and yellow flowers. — *H. apenninum*. Suffruticose, very much branched, with white flowers. — *Cistus créticus*. Shrubby, erect, much branched, with large, terminal, reddish purple flowers. — *Heliánthemum vulgäre* var. *múltiplex*. The common helianthemum, with double flowers. There are two varieties, the larger of which is known by the name of Mr. Lee's New Double Yellow. Both are well worth having, as peculiarly adapted for rockwork, and of the easiest culture.

The Botanic Garden. By B. Maund, F.L.S. In small 4to. Large 1s. 6d.; small 1s.

No. XXXVII. for January, contains

Anemöne palmàta. According to Gerarde, the leaves of anemone, stamped and used as snuff, purge the head mightily. Most of the species are attractive, and general favourites. — *Melissa grandiflora*, Great-flowered Balm. The green leaves yield a muscadine red to water, and give a pure and perfect green to spirit of wine. — *Campánula spéculum* (from *speculum Venèris*, after the Dutch *Vrouwen spiegel*, or Ladies' Looking-glass; probably from the shining surface of the seeds). — *Lýchris* (*lychnis*, a lamp) *coronàta* (*corona*, a crown; flowers in heads). The present number completes vol. ii. part i. of this elegant, judiciously got up, and very cheap publication.

No. XXXVIII. for February, contains

Cýtisis nigricans, *Gypsóphila prostràta*, *Crócus versicolor*. "Though it be as indispensable that vegetables be admitted to imbibe atmospheric air, as it is for animals to breathe it, yet a flower is not always dependent on immediate contact with the atmosphere for its colouring principles, for we frequently find it conveyed to them through the medium of the foliage, at a period when the flowers are most ingeniously excluded from exposure. The Crocus flower, at the time the leaves are issuing from the earth, presents a familiar example. Our young friends will find an examination of these bulbs and flowers, in different stages of their growth, particularly interesting." — *Rùbus árticus*. "Linnaeus found this plant in Lapland, where both wine and jelly are made from its berries, from which he had often experienced the most salutary relief when fainting with fatigue and oppressed with hunger—circumstances under which he not unfrequently laboured, whilst in the arduous pursuit of botanical science. One plant, newly discovered, would, however, cover the remembrance of a multitude of toils."

The Florist's Guide and Cultivator's Directory, &c. By Robert Sweet, F.L.S. &c. In Monthly Numbers. 5s. coloured; 2s. plain.

No. VII. for January, contains

25 to 28. — *Rosalie de Rohan Picotee*, with yellow flowers streaked with red. — *Walworth Tulip*; white petals, variegated with rose colour; from the select collection of W. Strong, Esq., of Albion Cottage, Brook Green. — *Smith's Champion Pink*, and *Le Mélange des Beautés Ranunculús*; the last from the select collection of J. Goldham, Esq., of White Cottage, White Conduit Fields. Directions are given for the culture of these plants from the excellent little treatise of Mr. Hogg, of Paddington.

No. VIII. for February, contains

29 to 52. — *Grimes's Privatcer Auricula*. — *Violet Alexandre Tulip*, a fine Bybloemen. — *Ive's Prince Leopold Carnation*, a handsome Crimson Bizarre. — *Barratt's Conqueror Pink*. Mr. Hogg, in his catalogue, mentions this as the best pink grown; it is also very cheap, being only 5s. a pair.

“ At this season it will be advisable to examine the pink plants frequently, to see that they are not eaten or damaged by the snails or slugs; the caterpillars also, from *Noctua variabilis* and *N. gamma* and other moths, frequently do much mischief to pinks and other perennial herbaceous plants at this season, when the weather is mild, coming out of their hiding places from the ground at night, and eating away all the young leaves, which causes the plants to bloom weakly, as well as disfigures them.”

Medical Botany, &c. By John Stephenson, M.D., and James Morss Churchill, Esq., Surgeon. In Monthly Numbers. 3s. 6d.

No. XIII. for January, contains

49 to 52.—*Inula Helèniùm*, *Helenium* or *Great-flowered Elecampane*. An indigenous perennial, with the root somewhat bitter and aromatic. A new vegetable product has lately been procured from it called *Inulin*, but which has not yet been applied to any useful purpose. *Elecampane* is “ an useless appendage to the *materia medica*, and never used unless by cow-doctors, who are ignorant of its properties, or by dishonest druggists, who add a small quantity of tartar emetic to it, and sell the mixture for powdered *ipecacuanha*.” — *Rícinus* (*ricinus*, a tick; seeds) *communis*, Common *Ricinus*, *Palma Christi*, or *Castor Oil Plant*. “ A tall annual, found native in almost every part of the East and West Indies, South America, and China. In Africa, this plant, which seldom rises more than 4 or 5 ft. high in England, attains the size of a considerable tree. *Clusius* observed it in Spain, with a trunk as large as a man’s body, and 15 or 20 ft. high. *Ray* asserts that in Sicily it is as large as the common elder tree, woody, and perennial.” An oil is expressed from the seeds by the following process:—“ The seeds being freed from the husks, which are gathered upon their turning down, and when beginning to burst open, are first bruised in a mortar, afterwards tied up in a linen bag, and then thrown into a large pot, with a sufficient quantity of water, and boiled till the oil is risen to the surface, when it is carefully skimmed off, strained, and kept for use.” *Castor oil* is of a pale yellow colour, with little taste or smell; it is often adulterated with olive oil, linseed oil, and poppy oil: it is used as a laxative, acting mildly and speedily, and, unlike other purgatives, its doses may be often lessened when an individual is in the habit of taking it. — *Althæa officinàlis*, *Officinal Althæa*, or *Marsh-mallow*. A native perennial, with spindle-shaped and somewhat woody roots, and stems 5 ft. high. “ All parts of the plant yield a mucilage by infusion or decoction in water; the root does so most abundantly, and, freed from the outer bark, is kept in shops. It is white, inodorous, and insipid.” An alcoholic infusion of the flowers, previously dried by a steam heat, out of contact with light, gives a sensible tinge of green, on being mixed with pure water, containing a very minute portion of potash, one thousandth part of carbonate of soda, and one twenty-fifth part of lime water. The roots, boiled and beaten up, are sometimes applied as poultices.—*Strýchnos* (*stronnumi*, to overthrow; poisonous effects) *nux vómica*; *Apocýnæ*. A middle-sized tree, common on the coast of *Coromandel*, with leaves and flowers not unlike the common dogwood, and berries about the size of a pretty large apple, covered with a somewhat hard shell, of a rich orange colour when ripe, and filled with a soft jelly-like pulp. “ *Nux-vomica* is one of the narcotico-acrid class of poisons, and seems to have a direct power over the spinal cord. It produces laborious respiration, which is followed by torpor, trembling, coma, convulsions, and death. It is fatal to dogs, hares, wolves, foxes, cats, rabbits, ducks, crows, and other birds; and *Loureiro* poisoned a horse by an infusion made of the seeds in a half-roasted state. *Hoffman* reports that a young girl, ten years of age, labouring under an obstinate quartan fever, took, at two doses, 15 grains of *nux-vomica*; she died in a short time, after having experienced

extreme anxieties, and having made some efforts to vomit. For a century, nux-vomica has been known as a powerful medicine, and employed in a vast variety of diseases, with different degrees of success. According to Roxburgh, the seeds are employed in the East in the distillation of spirits, to render them intoxicating. The pulp of the fruit is there eaten by birds. In England, nux-vomica is occasionally used by brewers, to impart an intoxicating effect to beer. Paralyzes and palsy, both partial and general, as well as various other kinds of debility, have recently been cured or alleviated by the alcoholic extract of this fruit. The preparations known as Strychnine and Brucin, have also lately been very much used; and, as a proof of the importance of the subject in the eyes of Messrs. Stephenson and Churchill, no fewer than fourteen pages are devoted to the medical preparations and applications of this plant.

No. XIV. for February, contains

55 to 56. — *Fráxinus O'rnus* (*O'rnus rotundifolia*), Ornate or Manna Ash tree. A low tree, common in Calabria and on the highest and most rocky mountains of Greece. Manna is procured chiefly from this species of ash; but also from *F. excelsior* and *F. parviflora*. The larch, fir, orange, walnut, willow, mulberry, and oak, also produce it. At Briançon, in France, manna is said to be collected from all parts of shrubs; and the inhabitants observe that such summers as produce it in the greatest quantities are very fatal to the plants. Their walnut trees produce annually a considerable quantity; but, if they happen to yield more than ordinary, they usually perish the following winter. From this it appears evident that manna is the extravasated juice of trees, and that they cannot afford to lose it; and what confirms this idea is, their secreting so much more when the summers are hot. The ancients were accustomed to find it on different species of trees, and therefore inferred that it was wholly foreign to the tree: an error very easily embraced by those who were not aware that the nutritive juices of all trees are nearly, if not wholly, the same.

"The medical properties of manna are those of a mild cathartic, for which purpose it was formerly much used in practice. As, however, one to two ounces of this medicine scarcely produce effects on adults, it is now seldom employed alone; but, combined with senna, neutral salts, and other purgatives, is frequently used to cover their taste. It is an innocent purgative in the hands of mothers, who frequently give it to their children in doses from one drachm to half an ounce, dissolved in water; but, though mild in its operation, it is apt to produce flatulence and griping."

Valeriana officinalis. Well known. "In Derbyshire, Valerian is planted in rows 12 in. apart, and the plants 6 in. asunder. Soon after it comes up in the spring, the tops are cut off, to prevent its running to seed, which spoils it. At Michaelmas, the leaves are pulled off and given to cattle, and the roots dug up, and clean washed, and the remaining top is then cut close off, and the thickest part slit down to facilitate their drying, which is effected on a kiln; after which they must be packed tight, and kept very dry, or they will spoil. The usual produce is about 18 cwt. per acre."—The leaves have a saltish taste, but little or no smell. The roots, particularly the mountain sort, are bitter, subacid, and of an aromatic and penetrating odour. The smell of the roots is very alluring to cats, and rat-catchers employ it to entice rats, who are also fond of it.

Delphinium staphisàgria. A native of Provence, Languedoc, and many other parts of the South of Europe. "The *Delphinium staphisàgria* is supposed to be the *staphis àgria* of Dioscorides; and, from the flower being something like a dolphin's head, the generic term is derived from *delphinos*, a dolphin. Our climate is too cold for this plant in the open air. Staves-acre seeds produce vomiting, drastic purgation, and inflammation, and are

never administered internally. Formerly they were used as a masticatory for toothache, but they are too acrid to be recommended even for this purpose. Externally applied, they are said to be efficacious in scabies, and fungous ulcerations; but their chief and most valuable virtue is that of destroying pediculi in the head, when mixed and used with hair-powder. Daphne has not been employed as a medicine, nor are its effects on the animal economy known."

Daucus carota, "the Wild Carrot, the seeds of which are aromatic, both in taste and odour. Water digested on them becomes impregnated with the latter quality, but it extracts but little of their taste. They yield a yellowish essential oil, and give out all their virtues to spirit. The seeds are carminative, and somewhat diuretic; and, by Schroeder and others, have been recommended for obstructed menses, flatulent colic, hiccough, dysentery, chronic coughs, gravel, &c. Cullen found them of no efficacy in the latter disease, and they appear to be of little use, excepting as correctors of flatulency."

The Pomological Magazine. In Monthly Numbers. 5s. coloured; 3s. 6d. plain.

No. III. for January, contains

9. *The Catherine Peach.* "An old and very valuable variety, ripening in the end of September and beginning of October, and possessing far greater merit than any other of our late Clingstone Peaches. When fully matured, it is excellent and extremely beautiful; but, to be eaten in perfection, it should have been gathered a few days. It is said to force well, which is an important quality; for, from want of solar heat in this climate, all the Clingstone Peaches acquire their flavour most perfectly in a forcing-house. It is an abundant bearer, and, according to Forsyth, well adapted for tarts. The Incomparable Peach is nearly the same as the Catherine, but is distinguished by its higher colour, both inside and outside, and by its flavour being inferior. On account of its superior beauty, it is the more cultivated of the two."

10. *The Borovitsky Apple.* A middle-sized, roundish, and rather angular fruit, from the Taurida gardens in St. Petersburg. "So few of the early summer apples which are commonly cultivated possess any merit, that it is very desirable to substitute some new kinds." The Borovitsky is proposed as worthy of a second place to the Sugarloaf Pippin.

11. *The Hemskirke Apricot.* A middle-sized, roundish fruit, very much like a small Moorpark, of unknown origin. "It bears freely on an east wall, where it ripens thoroughly by the end of July, acquiring a high luscious flavour, superior even to that of the Moorpark. From the Royal Apricot, (described p. 250. No. 2.) it differs in having a more tender flesh and richer flavour, and also in the greater sweetness of its kernel. While excellent varieties like this and a few others are to be obtained, one cannot avoid being surprised at walls in small gardens being encumbered with such inferior sorts as the Roman and the Brussels apricots."

12. *Crompton's* (erroneously Compton's) *Sheba Queen Gooseberry.* White, roundish oblong, ripens early, rich flavour, and a good bearer. "One of the Lancashire show gooseberries, which are cultivated more on account of their size as prize fruits, than for their merits in the dessert."

No. IV. for February, contains

13. *The Roman Apricot, Abricot commun, Fr.* "The most common apricot that is cultivated, and with the exception, perhaps, of the Masculine, the worst. It is not, therefore, its merit that has gained it a place in this work; but the being an old variety, which has acquired a station it does not deserve, its only good quality being its productiveness."

14. *The Summer Bon Chrétien Pear.* "A valuable well known Autumn Pear, the origin of which is lost in the darkness of antiquity. It has long been cultivated all over Europe, for the sake of the size and the delicious flavour of its fruit."

15. *The Malta Peach.* "One of the very best of the melting peaches, ripening about the end of August," and said to ripen well on a standard tree in Normandy, "a climate so little different from our own, that it is to be presumed this kind will be found to possess the same property in England."

16. *The Washington Plum.* Of uncertain origin, the parent tree being a sucker in a garden at New York, in the end of the last century, from whence plants were sent to R. Barclay, Esq., of Bury Hill, in 1819. "It is certainly not surpassed in richness of flavour, beauty, and other good qualities, by any. In flavour, it is fully equal to the Green Gage, and Coe's Golden Drop; and the beauty of its foliage, which is very remarkable, is quite unlike the usual shabby aspect of a plum tree." Colour, a yellowish green; form like that of the Green Gage, but much larger.

Mitchell, J., F.J.B.S. and M.N.A. [?], Eleven Years Foreman to Messrs. Eames and Webb, Professional New Ground Workmen and Landscape-Gardeners, and afterwards Steward of Stansted, in Sussex; a man of great experience, and highly spoken of by a correspondent on whom we can rely:

1. *Dendrològia*; or, a Treatise of Forest Trees, with Evelyn's *Sylva* revised, corrected, and abridged. London. 8vo. 15s.
2. *Sketches on Agriculture*; or, Farmer's Remembrancer. London, 8vo. 12s.
3. *The Grazier's Estimator.* London. 8vo. 2s. 6d.

These works we shall perhaps analyse in future Numbers. In the mean time, should Mr. Mitchell come to London, we shall be happy to make his personal acquaintance.

Pontey, Mr. William, Nurseryman and Landscape-Gardener at Huddersfield; a strong-minded man, of great experience as a practical planter: *The Profitable Planter, a Treatise on the Theory and Practice of Planting Forest Trees, in every Description of Soil and Situation.* London. 8vo, plates, 4th edit. 10s. 6d.

A well known and justly esteemed work. It is some years since we had the pleasure of seeing its author; we regret to hear that he is in bad health; should he see this, we hope he will convince us that he is still able to write, by becoming one of our contributors.

Steuart, Sir Henry, Bart., LL.D. F.R.S.E. &c.: *The Planter's Guide*; or, a Practical Essay on the best Method of giving immediate Effect to Wood, by the Removal of large Trees and Underwood; being an Attempt to place the Art on fixed Principles, and to apply it to general Purposes, useful and ornamental; chiefly intended for the Climate of Scotland. Edinburgh. 8vo, 5 plates, pp. 475. 18s.

We have just received this work in time to say that it appears to be one of great interest, both to the planter and landscape-gardener. In future Numbers we shall analyse it in detail; in the mean time, from a very slight glance, we can see that it deserves a place in every country gentleman's library, where it ought to be placed between the new edition of Evelyn's *Sylva*, by Mitchell, just published by Baldwin and Co., and Price's *Essays on the Picturesque*. Gardeners may safely speak of it to their employers.

The British Almanac, for the Year MDCCCXXVIII. 2s. 5d.

This work is published under the superintendence of the Society for the Diffusion of Useful Knowledge; and this single service, if the Society never perform any other, will render the public for ever its debtors. The influence of the common almanacs of Moore and of Partridge upon country people, and especially upon mothers and children of the lowest classes, is as great as that of the Bible and the Shorter Catechism in Scotland. The compilations, bearing the names of Moore and Partridge, to which we allude, originally appeared above a century ago, and they continue to be published with much of the astrological predictions and prophetic imposture peculiar to that time. "These works profess, in the plainest terms, to foretell the weather, even to a day, stating that on one day there will be rain, on another snow, and on a third thunder. They also prophesy as to political events with nearly equal confidence, though not quite so distinctly. Thus, one says that at a particular time 'there will arrive good news from Cadiz, Scotland, and Naples;' and another tells you that, about such a date, 'a great minister will be impeached,' or 'a dignitary of the church driven from his preferment.' Nor are they free from party politics. One gives intimations, and even prints, of a nature calculated to set different religious sects in conflict; and another dates the year as the 150th from the '*horrid Popish Jacobite plot*;' thus keeping alive, for the purpose of exciting religious animosity, the memory of transactions which are a disgrace to the character of this country, and the worst blot upon the history of its law; affirming as real crimes in a great degree imaginary, and grossly mistaking even the notions respecting that plot which prevailed at the time. Some parts of these almanacs are not marked by much regard to decency; but there are others, also greatly circulated, which are utterly obscene, and could never be admitted into any decent house, had not habit unfortunately reconciled the community to such things, as well as to the absurdities of their astrology."

— *Introduc.*

When it is mentioned that the sale of these works exceeds annually 500,000, some idea may be conceived of the tendency which they have to perpetuate notions which are far more adverse to the diffusion of enlightened ideas than ignorance itself. An ignorant mind will imbibe knowledge when it is presented; a mind prejudiced or bigoted repels every idea not in accordance with those already there. The one case is like sowing on a fallow field, the other like sowing on a field of weeds. The *British Almanac* is a combination of all that is good or founded on truth in the other almanacs, and contains, besides, a variety of original matter. There are some excellent preliminary observations on the weather; useful directions for each month, including a gardener's calendar, drawn up, we have reason for believing, by our correspondent, Mr. Main; the management of a farm, by another of our correspondents; the preservation of health, and medicinal plants which should be gathered monthly, attributed to Professor Dr. A. T. Thomson; and a variety of other matter of every day utility, respecting government, legislation, morals, education, and commerce, furnished by different individuals of high scientific and literary attainments.

No power but that of the government, or such a society as the promoters of the *British Almanac*, could have attacked, with any hope of success, so powerful a body as the Stationers' Company. The publication of such an almanac was therefore a work peculiarly fitting for them to undertake. That it will have the effect of reforming those to be published by this Company in future, there can be no doubt, and though it would be too much to expect that the opinions which have been disseminated by this Company will be rooted out from the present generation, yet it is something to have paved the way for saving from a portion of mental slavery the generations to come.

There is scarcely a country labourer who does not purchase an almanac, and we rely upon every reader, at all events, upon every gardener, purchasing and recommending that which, as a man of honesty and liberal principles, he cannot but consider as the best.

The Library of Useful Knowledge continues to be published regularly. The last number (xviii.) is the second part of Lord Bacon's *Novum Organon Scientiarum*. We mention these treatises, because one of them, No. xiv., part i. of *Vegetable Physiology*, is peculiarly in our way. It is attributed to Professor A. T. Thomson, and may be easily recognised as his, by those who are acquainted with the subject, by the great care and pains with which it is composed, by the number of explanatory wood-cuts, by the appropriation of the discoveries of Dutrochet (p. 78.), and by a number of original discoveries and views made by the Professor himself. The number of wood engravings in this sixpenny tract is no fewer than 81. As the subject is deeply interesting to every gardener and farmer, and the price may almost be called merely nominal, we should be sorry to suppose that there is a single journeyman or apprentice gardener so dead to his own interest as not to become a purchaser.

AUSTRALASIA.

Busby, James: A Treatise on the Culture of the Vine, and the Art of making Wine; compiled from the works of Chaptal, and other French writers; and from the Notes of the Compiler, during a residence in some of the Wine Provinces of France. Australia, 1825. 8vo, pp. 270.

This is the first book which has been printed in N. S. Wales, being 37 years after the first landing in that country. It is a judicious compilation from French and English works on the same subject, and will prove highly useful.

Bent, Mr. Andrew, Editor and Printer of the *Colonial Times Newspaper*: The Tasmanian Almanac for 1827. Hobart Town. 18mo.

We notice this work chiefly on account of the gardener's calendar which it contains, and from which a very good idea may be formed of the kitchen-gardening of that part of the world. The spring months in Van Dieman's Land are September, October, and November. Potatoes are stated to be successfully cultivated, putting in the garden crop about the 10th of September, and the field crop from the beginning of October to the 10th of December. "A garden winter crop may be planted in January or February." New potatoes are generally obtained by the 1st of December, which is there the first month of summer. The Swedish turnip is said to grow enormously large here; it is sown where it is to remain, and also transplanted. Asparagus is grown with much success. Cauliflowers "do well twice a year, but are generally planted in the months of August and September;" at no period of their growth is glasses or frames necessary. "Peas and beans may be cultivated near the sea coast in almost any season; but for a general crop, throughout the interior and places subject to frost, they should not be planted earlier than the first or middle of July; and it is advisable that the ground should be as strong as possible, and even that a little manure should be added." The climate and soil are said to be particularly adapted for onions, which are sown in the last week of April. The potato onion is very productive, and is planted in May, the last week of their autumn. Carrots and parsnips grow to an extraordinary size. Cucumbers, pompions, and melons are cultivated with much success; they are raised under glass during winter and spring, and in summer grown on dung beds in the open air. Cabbages do well at any season. Turnips grow to an extraordinary size. Artichokes are very large. Leeks are transplanted in the month of April. Horseradish, common red radish, lettuce, celery, and shallots, are enumerated as "doing well." It is stated that, "as all kinds

of vegetables pay uncommonly well for the expense and labour of planting, it would be advisable for the small settler residing near Hobart Town, to give his particular attention to their culture; indeed, too much time could not be bestowed in this occupation, as it would afford him a certain means of supporting his family, by supplying the shipping and the town. But it may not be useless to add, that a much more considerable portion of care is required to secure horticultural success in this colony than in England; and as the summer rains are not to be depended upon, it is pressingly expedient that no garden should be made on too steep a rising ground, down which the moisture would drain before it could assist vegetation."

Fruit Gardens. — Under this head it is stated that the produce of grapes is wonderfully great; that "this fruit will no doubt, in the course of a few years, be of considerable benefit to the colony, not only to supply wines for our consumption, but for exportation, as one gentleman last year made upwards of 200 gallons from the produce of his own garden." Strawberries "grow wonderfully to leaf in this country, and are not of certain produce; but the fruit is always very fine." Raspberries "are a favourite fruit, of certain produce, and extremely delicious." Mulberries are highly flavoured, and the tree bears as well as it does in England, if not better. The apple and peach are the two most plentiful fruits in the island. "The apple is so astonishingly prolific, that instances have been known of very young trees having borne fruit the season immediately after they were grafted." The cherry, especially the Kentish, appears to be very well adapted for this climate. Pears are uncommonly productive. Filberts and cobnuts have not yet borne, but walnuts and chestnuts have. The fig tree bears much fruit, but the frosts of autumn set in before it arrives at maturity. The elder grows in several places, and wine of a very superior quality has already been made of the berries. The green gage and damson plum are becoming plentiful. Currants and gooseberries grow luxuriantly. The quince bears abundantly, and the loquat has been introduced, and ripened fruit.

Forest Trees and Shrubs. — "Sweet briar, English hawthorn, the broom, the furze, and in fact every other plant and shrub grow luxuriantly in this climate, and perhaps more so than in any other part of the world. The English oak, and a great number of other favourite trees, are also growing in many places here in the greatest luxuriance. Among those lately introduced into the colony are, the sweet Spanish chestnut, as well as the common horsechestnut, the oak, the beech, the ash, the fir, the Norfolk pine, and the willow."

It is curious to observe the gardening instructions of the almanac of a new country concluding with injunctions to plant timber trees for the benefit of posterity. In new countries cutting down is generally much more necessary than planting; that this should not be the case here, proves how very favourable the situation is for British emigrants. In point of soil and climate, indeed, we believe Van Dieman's Land to come nearer to England than to any other country in the world, and the consequence is, that every gardening and agricultural plant and practice of England, may be considered the plants and practices of Van Dieman's Land.

We are sorry to find that the *Tasmanian Almanac* is not without a fragment of the bad part of the common almanacs of the mother country. We did not expect to meet, in a work compiled by the Editor of the *Colonial Times*, "the dominion of the moon in man's body passing under the twelve zodiacal constellations." People in the agricultural stage of domestication, living in log-houses and cooking their own dinners, one would think, would hardly find time to attend to the corporal pains for every day in the year. But a hint is sufficient, and we have no doubt the example of the *British Almanac* (p. 461.) will be followed in future editions of that of Tasmania.

PART III.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

SUPPOSED Influence of the Moon. — There is an impression very general with gardeners, that the moon has a particular effect on plants, especially in certain months. The gardeners near Paris gave the name of the *lune roussé* to the moon which, beginning in April, becomes full either at the end of the month, or more generally in May. According to them, the light of the moon, in the months of April and May, injures the shoots of plants; and, when the sky is clear, the leaves and buds exposed to this light become red or brown, and are killed, though the thermometer in the atmosphere is several degrees above the freezing point: they confirm this observation by remarking that, when the rays of the moon are stopped in consequence of the existence of clouds in the air, that then the plants are not injured, although the temperature and other circumstances are the same.

M. Arago explains this observation of practical men by a reference to the facts and principles established by Dr. Wells. He has shown that, in a clear night, exposed bodies may frequently have their temperatures reduced below that of the surrounding atmosphere, solely by the effect of radiation, the difference being as much as six, seven, ten, or more degrees, but that it does not take place when the heavens are obscured. M. Arago then observes that the temperature is often more than four, five, or six degrees above the freezing point during the nights of April and May, and that when the night is clear, consequently, when the moon is bright, the temperature of the leaves and buds may often be brought, by radiation, below the freezing point, whilst the air remains above it, and, consequently, an effect be produced, which, though not dependent upon, accompanies the brilliant unobserved state of the moon; the absence of these injurious effects, when the moon is obscured, being also as perfectly accounted for by these principles, from the knowledge that the same clouds which obscure the moon will prevent the radiation of heat from the plants. Hence, as M. Arago remarks, the observation of the gardener is correct as far as it goes, though the interpretation of the effect which he generally gives is incorrect. (*Annuaire du Bureau des Long., Bul. Un., and Quar. Jour.*, October, 1827.)

Destruction of Snails by common Salt. — M. Em. Rousseau had applied common salt as a manure to a small piece of garden, and remarked that where snails had come in contact with the salt they quickly died. Wishing to confirm the fact, he strewed some salt upon the ground, and placed a number of snails amongst it; all those which came out of their shells and touched the salt immediately threw out a greenish globular froth, and in a few minutes were dead. The fact may be turned to account by agriculturists and gardeners. (*Bul. Un. and Brande's Jour.*, Jan., 1828, p.495.)

A much more effectual mode of destroying snails, worms, and similar insects, and one with which, unlike salt, there is no danger of injuring plants, is the use of lime water. Nothing astonishes us more than the tardy dissemination of this fact among gardeners.

Importing Orange and other Trees from France is sometimes resorted to on the principle of economy; but the result is not unfrequently the reverse, in consequence of the enormous expense of carriage and shipping charges. A case has lately come to our knowledge, in which the shipping charges on some trees in tubs from Rouen came to three times the price of what the trees could be purchased for in London. We would recommend those who order garden articles from abroad, to contract for their delivery in a British port at a certain price, free of all charges whatever. Something like the cost of the articles will then be ascertained beforehand.

PORTUGAL.

Elvas, November 13. — St. Martin's is the day fixed for proving the quality of the new *wines*, which this year prove remarkably good; but the quantity is very small, about one fourth of last year's crop, or not so much. The price last year was from 600 to 700 reis (2s. 6d. to 3s.) per almunda ($4\frac{1}{2}$ galls.) in Borba; in Vella Born it is lower. The method of making wines here is much cleaner than in the neighbourhood of Lisbon. The grapes are spread on a clean brick floor, in the centre of which is a cistern to receive the juice, and are broken by men trampling upon them with wooden shoes. The pulp is then collected and pressed. After the fermentation, it is put into large earthen pots, containing from 52 to 57 almundas (a pipe and a quarter). At the top of the jar they pour oil upon the wine, and add no other covering. When they want to prove it, they blow the oil aside with their breath, and take out a small quantity of wine in a little cork dish; they say any thing else will injure it. There are wines of many different qualities, white and red, and both excellent. The best quality of red is the Bastard and White, of the flavour of Bucellas; but the transportation is so enormous, together with the duties and other expenses that none can in the present state of things ever find its way to Lisbon.

The collecting of the *olives* has just commenced, and their quality never was surpassed, and the quantity not often equalled. The olives here are not the little black fruit you see in the north of Italy, but of a fine bright green, very fleshy, and some as large as plums. The trees have not that sombre appearance, which is so tiresome in the north of Italy: here they are regularly pruned, and the leaf has a rich velvety appearance. The country is thickly covered with them, and, from its diversity of hill and dale, forms a delightful prospect at every season of the year.

Every inch beneath these is cultivated, and produces fine crops of wheat, beans, peas, &c.; Indian corn is not cultivated in this quarter. From the month of October asparagus springs up wild among the other crops, which is plentiful until the month of June, and many persons get a living by bringing it to market; it is sold at from 15 to 30 reis ($\frac{3}{4}$ d. to $1\frac{1}{2}$ d.) per bundle, a very respectable quantity, quite as much as one person can eat. In the spring artichokes are uncommonly plentiful, and are sold at from 20 to 30 per penny; they also grow wild. They are rounder than ours, and the bottom parts more fleshy, and of excellent flavour. (*Newsp.*, Nov.)

NORTH AMERICA.

Linnean Botanic Garden, Flushing, Long Island, near New York, Dec. 6. 1827. — Dear Sir, I lately sent you a barrel of different sorts of apples, and

some potatoes and wine; and I have just shipped you a present of the following plants, which I hope you will receive safe:—

1. *Maclura aurantiaca* mascula, a fine old plant.

2. *Berberis Aquifolium*.

For these two plants I have never received less than from four to five guineas each.

3. *Sine qua non* Apple. One of the very finest early apples, of a green colour, and high flavour.

4. Monstrous Pippin, or New York Gloria Mundi. One of the largest American apples, an autumn and early winter fruit; white colour and good flavour; slightly acid. [Is this the large apple formerly known in Scotland by the name of Monstrous Reinette?—*J. M.*]

5. Red Baldwin. An apple held in great estimation.

6. Prince's Duke. The largest of American cherries.

7. Plumstone Morello. The largest of Morellos, with an eye shaped like that of a plum.

8. Jaques's Yellow Rare Ripe. A new peach of superior quality.

9. Diana. A beautiful peach.

10. Prince's Red Rare Ripe. A very fine freestone peach.

11. Yellow Mélecoton. A very luscious freestone peach; yellow, with a red cheek.

12. *Amgdalus communis* flore pleno. I do not observe this mentioned in the London catalogues.

13. Prince's St. Germain Pear. The fine hybrid referred to in your Magazine (vol. ii. p. 90.), and which was originated by cross fecundation, long before I ever heard of an attempt of the kind having been made.

14. *Quercus ambigua* of Pursh, borealis of Michaux. Very rare.

15. Elk-horn Cherry. Very large, black; ripens here two weeks after the Black Tartarian. The fruit is remarkable for its leathery or liver-like consistence.

16. Grand Sachem Apple. A new fruit, much admired.

17. *Ribes aureum* fructu flavo.

18. *Vitis Labrusca* var. *Isabélla*. The grape most celebrated here as a great bearer, and the fruit yielding such wine as the sample heretofore sent you. Quite hardy.

19. Double Blue *Hibiscus syriacus*, } New seedlings originated here.

20. Double Red *Hibiscus syriacus*, }

21. Kenrick's Heath. A much esteemed freestone peach.

22. Prince's Gage Plum. A seedling of the green gage; the fruit very large and fine.

23. Prince's Late Virgouleuse Pear. A seedling of St. Michael's.

24. *Rosa parviflora* plena. A very delicate blush American rose, flowering from July to winter; found double in a wild state.

25. White Gage Plum.

In the extracts from my letters (p. 27.), you make me state that this establishment has been conducted by me for nearly eighty years: it should have been by my father and myself for eighty years. I hope I have procured for you as correspondents, George Carter, Esq., Oatland Mills, Virginia, and General Forman, of Maryland. I will also recommend other intelligent gentlemen in different sections of our country to become contributors to your work. I am, dear Sir, &c.—*William Prince*.

For so magnificent a present we return our best thanks to Mr. Prince. If he or any of his family should ever come to England, we hope to be able to show him or them that we have taken good care of so many valuable articles. We have published the list for the benefit of nurserymen and others, who may wish to order the same things. We should be sorry to be exclusively in possession of them.

ART. II. *Domestic Notices.*

ENGLAND.

THE supplying of London with pure Water has of late occupied a good deal of the public attention. According to the Report of a Committee appointed to enquire into the subject, and according to all the public journals, except the journal "edited at the Royal Institution of Great Britain," no water procured from the Thames, between Greenwich and Brentford, can be considered pure. A supply must therefore be obtained either by intercepting other rivers proceeding from the north or south to the Thames, or by intercepting a portion of the Thames between Brentford and Windsor. Supposing the situation of two reservoirs to be Blackheath and the neighbourhood of Primrose Hill; then a canal course from each of these reservoirs, with the same rise as that of the New River, might proceed westward, following the inclination of the ground, descending under roads and navigable canals, and passing circuitously by houses and gardens in the usual way, till at last the two canals intercepted the Thames; the supply thus procured would be adequate to London with thrice its present population, and a great deal might be spared from the canals in their progress, for domestic, agricultural, or gardening purposes. A walk or road accompanying these canals might be rendered most ornamental, and would form an admirable and desirable addition to the sources of recreation of the metropolis. Invalid soldiers might be stationed all along this road, to prevent idle persons from throwing any thing into the water, and for the general purposes of patrols and watchmen.

The Thames Tunnel.— Few works have excited more public interest than this new and gigantic undertaking. It is impossible not deeply to admire the original ingenuity of the scheme, and the skill and perseverance, in carrying it into execution, of the inventor and engineer, Mr. Brunel. The accidents which have occurred under so eminent an engineer, may be considered as proving that no human skill could foresee the difficulties of the undertaking. We trust, however, it will ultimately be accomplished. So great is the public sympathy with Mr. Brunel's situation, that, since the late accident about the beginning of this year, he has received no fewer than 300 written suggestions for a remedy, besides upwards of 200 verbal suggestions. (See Mr. Brunel's letter in the *Times*, Jan. 26.) A number of plans for such a tunnel, all differing from that invented by Mr. Brunel, have appeared in different publications. As far as we have been able to judge of these plans, as compared with Mr. Brunel's, we think none of them equal to his, where the bed of a river is of perfectly solid earth; but, where the bed is so little to be depended upon as that of the Thames, it appears to us that the plan of enclosing the space for the tunnel in small portions at a time, digging out the earth up to the surface, or *to the day*, as the miners term it, and building the arch so that its summit may be merely a yard or two below the water, would have been the safest and cheapest mode. It is not, however, applicable where Mr. Brunel's plan has been commenced, and is therefore only mentioned here with a view to future tunnels under rivers. It is highly satisfactory to learn from Mr. Brunel's letter, that almost the whole of the 500 suggestions alluded to, concur in the principle which he has adopted, viz. that of stopping the breach by a covering above. A public subscription has been opened, by which, we have no doubt, a sum sufficient to complete the work will be raised. Perhaps, also, something might be got by the sale of tickets, to pass through the tunnel when finished, at 1s. each, or for perpetual pass-tickets, transferable at a larger sum.

We should wish every gardener to subscribe; because there is something grand in feeling an interest and sympathy in public works and national undertakings; and because we would wish every gardener to participate in generous and elevating sentiments. Joining in a subscription is a sensible evidence to ourselves and others of this feeling; and, therefore, we hope every gardener, who would not wish to be considered destitute of soul, patriotism, or philanthropy, will put down something, however little. The amount of the subscription has nothing to do with the feeling connected with it; the noblest and the most useful subscriptions are those that are made in the smallest coin. The idea of accomplishing a great national undertaking, at a penny a head, volunteered by men, women, and children of all ranks, is sublime. The man who subscribes to a public work for the first time in his life, is using the means for giving a new impulse to the higher order of human feelings. He is adopting a course calculated to impress on the mind the consciousness of sentiments far above those which have reference merely, or chiefly, to self-preservation or advancement in the world; and which in man, at a certain stage of his progress to intellectual enjoyment, must be hailed as a new sense. The influence of this impulse will be felt from that day to the end of life. To subscribe for the tunnel, for instance, will not only lend an interest to all that concerns that particular undertaking, but will give rise to sentiments of an order unexperienced before, on the projection or execution of future tunnels, bridges, canals, and other public works. There is such a thing, as Mrs. Hoffland has observed, as a "sense of elegant enjoyment." It is elevating to feel ourselves connected with our country and mankind by sentiments common to great minds in all ages; and it is ennobling to reflect that the poorest of us may participate in these sentiments as well as the richest. There are many worthy persons who have a proper relish for personal and social comforts and enjoyments, who yet cannot rise so high as to partake of this feeling. But it is within the compass of human enjoyment, and therefore ought to be aimed at by every one who is desirous of making the most of the gift of life. Let every gardener, therefore, who has not subscribed to any public work before, take our advice, and try an experiment upon himself by giving something towards the completion of this tunnel. The highest amount which, under any circumstances, ought to be given by men so poor as we gardeners generally are, may be according to the following scale: apprentices, and journeymen in nurseries or out of place, 6*d.* each; journeymen, and masters in nurseries or out of place, 1*s.* each; masters in place, 2*s.* each. But we should be still better pleased with collections of the smallest coin, and should like to see in the list of subscriptions to the tunnel, published in the newspapers, such items as, "Thirty gardeners out of place, now at work in Lee's nursery at 12*s.* a week, 2*s.* 6*d.*" "The Subscribers to the Clapton Nursery Library, collected in halfpence, 3*s.*" &c. Tradesmen gardeners may subscribe what they please.

English Elm.—Mr. Monteath advises planting the Scotch or wych elm, which, he says, is excellent timber, and used in ship-building. This may be the case, but surely it is inferior in every respect to the English elm; the latter possessing a property which few equally good forest trees have; and that is, when once planted in woods or hedge-rows (for which it is superior to all others), in suitable soil, it perpetuates itself by abundance of suckers from the root. This remark should be attended to by planters; to choose young English elm plants raised from layers, and not such as have been grafted, which was once a practice in the public nurseries. (*Brit. Farmer's Magazine*, p. 705.)

By comparing this paragraph with Cobbett's opinion (p. 508.) the reader will learn how very differently practical men think on the same subject. It is easy, however, to reconcile the opinions of Cobbett, Monteath, and the

reviewer in the *Farmer's Magazine*, who is one of our principal correspondents. Cobbett wishes to recommend his seedlings, raised from American seeds; Monteath has seen large trees of the Scotch elm in Scotland, but never of the English elm there; and the reviewer is chiefly conversant with the English elm, which we agree with him in considering one of the best of trees for hedge-rows, and one which will produce a greater bulk of straight timber on a given surface than any other. In pastures its suckers are troublesome, but in hedges and strips these are invaluable. With respect to a layer's being always merely a limb of a tree, the assertion will only hold good under certain circumstances, such as layers made at the extremities of old branches; but even these, if once well rooted in good soil and cut over by the surface, will send up shoots; one of which being selected, and the rest removed, will become in all respects as bulky and valuable a tree as if it had been raised from seed; for it may be adopted as a law of vegetable nature, that buds, bulbs, and seeds are essentially the same. We know that some eminent men, both theoretical and practical, are of a different opinion, which is one reason why we have repeatedly stated our conviction on the subject, in order that it may lead to discussion and truth.

The Zoological Garden, of which the projected plan was given some time ago in the *Literary Gazette*, continues to be carried into execution. Some very neat and judiciously contrived lodges for the birds and other animals are erected, and the whole is already well worth public inspection. When completed, the exhibition here will be one of the most interesting and original about the metropolis, and only equalled by that of the zoological department of the *Jardin des Plantes* at Paris.

London University.—This building, the joint design of Wilkins and Gandy, two of the first of our architects, is proceeding with rapidity, and, it is calculated, will be open for public instruction in October next. The elevation is characterised by that simple, elegant grandeur which may truly be said to pervade all the Grecian buildings of Mr. Wilkins. When completed, it will be one of the first ornaments of the metropolis; being in a style which has stood the test of many ages, and whose beauty will, like that of a dead language, be as much approved and admired thousands of years hence as it now is, and as it was thousands of years ago. The professors already appointed are men of distinguished character. Our highly valued correspondent, Dr. A. T. Thomson, author of *Lectures on Botany*, a work the original and valuable views of which have been ably pointed out by our correspondent, Investigator, in a paper which will appear in a future Number, is appointed to the professorship of *Materia Medica*; and Dr. Grant to that of *Zoology*. It has been stated that ground for a botanic garden has been contributed by Dr. Fellowes, and we understand that there are differences of opinion as to the eligibility of the situation. It is very desirable that a garden should be obtained in the Regent's Park, for the joint use of the Zoological Society and the University, on the plan of the *Jardin des Plantes* at Paris. We trust that a garden will be formed, and we have no doubt that presents of plants and seeds will be poured into it from all quarters, as specimens of plants, animals, and minerals, and curiosities of many kinds, will be sent to the museum. The funds for carrying on this noble feature of modern improvement are raised by the sale of shares of 100*l.* each, which are payable by instalments of 10 per cent. Shareholders who have children will possess many advantages in respect to their education; and we should consider ourselves wanting in our duty to such gardeners and gentlemen's farmers and stewards, as can afford to educate their sons for physic (the most universal of all professions), or for law (by which, being called to the bar, a man, however low his birth, is elevated to the

rank of a gentleman), if we did not strongly recommend each parent so situated to purchase a share. An interest of 4 per cent. is guaranteed to the shareholders. A prospectus may be had at Mr. Murray's, in Albemarle Street, and at the office of the University, in Percy Street.

Kensington Gardens, and the Parks adjoining.—The erection of lodges for the doorkeepers, as suggested in our First Volume, p. 285., was commenced last autumn, and has recently been completed. They are square boxes, with fire-places, chimneys built according to the plan of Mr. Hiort, which deserves universal adoption, boarded floors, and, with the exception of one of thatch, slated roofs. We are happy to see them, because we know they will add much to the comfort of the doorkeepers, without injury to the gardens or to any person or thing whatever. The bridge (Vol. I. p. 284. *fig.* 56.) is completed: it is, as we said it would be, a handsome object of itself; but, considered as a work of utility, a most egregious folly, and, in regard to the beauty of the scene of which it forms a part, an excrescence or monstrosity, which, by disturbing the harmony of what surrounds it, completely destroys the natural character of the grounds. In common parlance, it is too big for every thing. We are exactly of the opinion expressed (Vol. I. p. 280.) by our esteemed correspondent, Mr. Thomson (now in Australasia), as to what ought to have been done with Hyde Park as connected with Kensington Gardens; and, though it would be too much to expect that this bridge should be pulled down, we should like much to know, as our suggestion of removing the cascade has been adopted, what could be said against continuing the river to Hyde Park Corner, and under the road into the Green Park, on one level, as shown in Mr. Thompson's plan. (Vol. I. p. 281.) Of the piece of water now forming in St. James's Park, we shall say nothing till it is completed, though we cannot help thinking the formal style would have been better adapted for that very limited and formal situation. Many, we know, think the healthiness of that part of the metropolis would have been better consulted by having no water there at all.

Labels for Trees.—I send you a sketch (*fig.* 169.), which will answer either for parchment or thin lead. For the common uses of the nurseryman, it may be of parchment, and written on with common ink; for sending trees abroad, or for a gentleman's grounds, it may be of thin sheet-lead, with letters or figures impressed on it by steel types; or the label may be painted white, and written on with oil paint of any dark colour. The advantage of this plan for permanently naming trees or shrubs in a gentleman's grounds is, that as the branch increases in size, the label will give out. Yours, &c. — G. B. & N. Lynn, October 3. 1827.

Salt and the Vegetable Marrow.—Whether salt is manure appears to be still a question. I will relate a circumstance which occurred a few weeks ago. My attention was attracted by a dead leaf of vegetable marrow, of most singular appearance, which was grown on a piece of ground dressed with salt in the proportion of 3 oz. to each square yard; it was so fully impregnated with salt, which it absorbed from the soil, that it appeared in innumerable concretions on the surface, which presented a singular and beautiful appearance through a good microscope. The leaves of this plant abounded with such a



quantity of salt that it requires no chemical analysis to discover it; it is perfectly obvious to sight, touch, and taste. I shall make no further observations on this case at present, but only remark that, if this is not decisive of the dispute, I think nothing can be. I herewith send you some of the leaves, and also some of the seeds, which were brought by a gentleman from the West Indies. It is an uncommonly great bearer, and of superior flavour to any other sort I ever tasted. The fruit should be gathered before they exceed 4 in. in length, and never should be allowed to remain on the vine longer than till they arrive at that size, unless you wish to save one for seed. The more you gather the more the plant will produce; but, if the fruit are allowed to grow large, the vine ceases to produce more. — *W. Green, jun. Stepney, August 51. 1827.*

A Transmitting-heat Wall for the Ripening of Fruit. — A patent for this improvement has been taken out by James Andrew Hunt Grubble, of Stanton, Saint Bernard, Wilts, clerk, dated January 9th, 1828; the specification to be given in six months. (*Repertory of Arts*, Feb., p. 159.)

A fine Bunch of Asparagus was gathered in an open garden at Attercliffe, near Sheffield, on Christmas day last. (*Sheffield Courant*.)

SCOTLAND.

Leith Walk Linnæan Society. — In April, 1815, about twenty of the journeymen gardeners then employed in the Edinburgh College botanic garden and the Leith Walk nursery, formed themselves into a society for mutual instruction in matters relating to their profession. As the unsettled nature of their employment at the time prevented their entering into a permanent scheme, it was resolved, as an experiment, to devote the summer months to practical botany; and, as a preliminary step, to set about acquiring an accurate knowledge of the plants indigenous to the neighbourhood of Edinburgh. The meetings were held every Monday evening in a school-room hired for the purpose. The subscription was 6d. each per week; the amount was laid out weekly in the purchase of elementary books, suited to the subject then under consideration. Willdenow's *Elements of*, and Smith's *Introduction to, Botany*, Hull's *British Flora*, Martin's *Language of Botany*, and the *Epitome of Hortus Kewensis*, were soon procured. The worthy president, Mr. Mackay (now of Clapton), favoured the Society with the use of Lightfoot's *Flora Scotica*. Such formed the library at the outset; the books were lent out to the best advantage, and seemed to answer. The plan adopted was to appoint two of the members weekly, in their turn, to proceed in certain directions, and to collect all the indigenous plants they found in flower, which were handed to the secretary to arrange and name previously to laying before the meeting. At the meeting, all the plants collected in the course of the week were exhibited, and their habitats stated; the descriptions were read by the president from Lightfoot's *Flora*, and every term explained from Martin's *Language of Botany*.

By these means the members not only became practically acquainted with the native plants and their habitats, but they were gradually led into classification and terminology, in a way not unlikely to fix them on the memory. An alphabetical list of the plants examined was weekly handed to the collectors, in order that they might avoid gathering duplicates. In the course of the summer, most of the indigenous Flora of the neighbourhood were collected, and a great taste for rural botany, and a spirit of emulation, excited. In autumn, many of the members, as well as myself, left Edinburgh, to fill situations in various parts of the country; those who remained commenced *de novo* next spring, but with what success I never heard. In the course of my peregrinations throughout the empire, I have

met with several of the original members, filling highly respectable situations, and who assured me that they looked back upon the summer of 1815 as one of the most profitable and pleasant periods of their lives.—*G. W. Irvine. Dublin, March, 1827.*

Double Cropping.—A plot of ground, on which I had a crop of early peas, happened to be manured with the litter and sweepings of my potato cellar. After removing the haulm of the peas, I found the ground covered with young plants of potatoes. I had the surface stirred up, the weeds removed, and a shower of rain happening to come soon after, the plants grew vigorously. In a fortnight they appeared to be too thick; I therefore took up half of them, and planted them in rows, at the usual distance, on a piece of fresh ground. Soon after this, both crops were earthed up; the autumn being mild, they grew till November, and about the 12th of that month I dug them up, and found a very large crop of middle-sized potatoes. On trying them, I found them not very mealy, because they were not very ripe; but thinking that, according to the account of some of your correspondents, they were all the better for seed, I laid them aside for that purpose, and have no doubt they will answer well. I do not mean to recommend, from this accidental circumstance, that peas and potatoes should be sown together, but only that, when occasion requires it, any straggling young potato plants that are found in a garden or field may be taken up and transplanted with advantage. It is too common, at least in this part of the country, to treat potato plants which have come up among other crops as weeds; but I have proved that, whenever it is desirable, they may be turned to profit. When wheat has been sown after potatoes, young potato plants very often come up early in spring; and, I am persuaded, cottagers who have gardens might turn them to good account, by lifting them at that season, and transplanting them into their gardens for an early crop. The farmer, at the same time, would be benefited, because, relatively to the wheat crop, they are weeds. But I merely throw out the hint for others to improve on. Dear Sir, yours, truly,—*Charles Sidey, bookseller. Perth, Jan. 16. 1828.*

Edinburgh Botanic Garden, Dec. 10. 1827.—Dr. Graham has communicated to Jameson's Journal the following names of rare plants which have flowered there during the preceding three months. *Buddlëia madagascariënsis*, *Cássia opàca*, *Leonôtis nepetifolia*, *Lòäsa pátula*, *Polemòonium Richardsonü*, *Salpiglóssis atropurpùrea*, *Verbèna barbàta*.

IRELAND.

Agricultural Model School in the Province of Munster.—We are glad to perceive, from a little tract that has been sent us, (*Outlines of a Plan for the Establishment of an Agricultural Model School in the Province of Munster*, as recommended by the Irish Relief Committee in London of 1822, who appropriated Three Thousand Pounds of their remaining Funds to aid in carrying this object into effect. Cork. Edwards and Savage. Small 8vo, pp. 56.) that attention is beginning to be paid to the useful and scientific education of the agricultural classes. It appears that "the London Relief Committee, in 1825, appropriated six thousand pounds of their remaining funds to the establishment of two agricultural schools, one in the province of Munster, the other in the province of Connaught; and appointed resident committees in both provinces, to carry these, and other plans tending to improvement, into effect. Will it be believed that, after an interval of more than two years, no arrangements have been made to apply to their intended purposes, either in the province of Munster or of Connaught, the three thousand pounds still at the call of each, for the establishment of agricultural schools?" (p. 5.)

In the north, without this aid, near Londonderry, an agricultural and scientific seminary has been established, and is now in active operation. The object of the Munster school is excellent; the motives, we have no doubt, are pure and patriotic; and if only a part of the good which is anticipated be the result, the consequences to Ireland cannot be otherwise than beneficial. The plan of combining labour with instruction is judicious; because the one will give a zest to the other, and the former contribute to health and industrious habits at the same time. It is gratifying to contemplate in perspective the time, which, from the progress of things, must certainly one day arrive, when every gardener, agricultural labourer, and shepherd shall have received the education contemplated in the following paragraph; in other words, when all these different branches of knowledge shall be taught in every parish school in the empire, and when every parish school shall have a large garden attached. How much more agreeable, entertaining, and invigorating it would be for schoolmasters and their pupils to go through such a course of instruction, than through the dull, half-useless routine at present followed, every gardener who has spent half a dozen years of his life attending a parish school in Scotland can very well judge.

“The education of both classes of pupils should consist of a knowledge of nature, or of minerals, plants, and animals, including physical geography (termed natural history); of chemistry, analysing, making new compounds, and turning to use the component parts of these bodies; of mechanics, bringing under controul and rendering efficient, directing, concentrating, or diffusing, many of the *motive-powers* which chemistry and observation discover; of as much of mathematics (or the knowledge of the relations of numbers and quantities) as may be necessary to surveying, civil engineering, and other practical arts; and of the *practical application* , by the pupils themselves, of these branches of knowledge, chiefly to agricultural operations, including the culture of gardens, fruit, and forest trees. Drawing, as well as writing, should be taught, as a necessary accessory to the acquisition of all these branches of knowledge. History including geography, legislation, political economy including statistics, intellectual philosophy, poetry, and miscellaneous literature should be secondary objects occasionally lectured on, chiefly with a view to private cultivation by means of a well selected library. Music, dancing, and gymnastic exercises should be cultivated as amusements; and facilities for such amusements should be afforded to the pupils.” (p. 9.)

To all who are interested in the establishment of provincial schools in Ireland, or indeed in any country, we recommend the perusal of this little pamphlet.

ART. III. *Horticultural Society and Garden.*

DEC. 4.—*Read.* An account of Scotch Pears, by Mr. Archibald Gorrie, C.M.H.S. Description of a Hot-bed Frame, by Sir George Stewart Macenzie, Bart. F.H.S.

Exhibited. Fruit of the long variety of Li-tchi, from John Reeves, Esq., F.H.S. *Anandssa bracteata*, from Robert Barclay, Esq. F.H.S. Sturmer Pippins, and Apples unnamed, from Mr. E. Dillistone, of Sturmer. One hundred and twenty-three sorts of Apples, from the Herefordshire Horticultural Society, sent by the Secretary, Richard Parkinson, Esq. Newtown Pippins and Calville Blanche Apples, from James Webster, Esq. F.H.S.

Also, from the Garden of the Society. Flowers of seven sorts of Chrysanthemums, four sorts of Pears, and five sorts of Apples.

Dec. 18.—*Read.* An account of a new method of Grafting, by Mr. Alexander Diack, C.M.H.S. On the treatment of *Nymphæa rubra*, by Mr. Christie Duff, C.M.H.S.

Exhibited. Twenty-one sorts of Apples, from Richard Waring, M.D. F.H.S. Three sorts of Apples and seven sorts of Pears, from Mr. Peter Langelier, C.M.H.S. Twenty-one sorts of Apples, and specimens of American St. Germain Pears, from the garden of George Tollit, Esq., of Bentley Hall, Staffordshire, sent by John Wedgewood, Esq. F.H.S. Two sorts of Apples, from Mr. Robert Donald, F.H.S. Four sorts of Apples, from Mr. James Veitch, of Killerton. Seven sorts of Apples, from Josias Baker, Esq. F.H.S. Specimens of an Apple unnamed, and Bergamotte de la Pentecôte Pear, from Mr. James Young, F.H.S. Nonpareils, from Mr. John Maher, F.H.S. Various Seedling Apples, from Mr. John Oliver, gardener to the Earl Craven, at Croombe Abbey, Warwickshire. Pomo Caroli, from the Right Honourable Augustus John Foster, F.H.S., at Turin. Ive's Seedling Apple, and a Seedling Pear from the Crassanne, from Mr. William Masters, F.H.S.

Also, from the Garden of the Society. Two sorts of Apples, three sorts of Pears, four sorts of Succory, and two sorts of forced Potatoes.

Jan. 1.—Read. A simplified method of marking Numbers on Tallies, by Sir George Stewart Mackenzie, Bart., F.H.S.

Exhibited. Fifty-five sorts of Apples from the Carse of Gowrie, from Patrick Mathew, Esq.

Also, from the Garden of the Society. Large pale red and Ox-Noble Potatoes, forced in boxes in mould. Common Succory, forced in a dark-house. Asparagus, forced in beds in the open ground. Flowers of *Tussilago frâgrans* and *Chimonanthus frâgrans*; Lemon's Queen Pine-apple; St. Germain and Bergamotte de la Pentecôte Pears.

Jan 15.—Read. Observations upon temporary Copings for Garden Walls. By Alexander Seton, Esq. F.H.S.

Exhibited. Newtown Pippins from America, Old Nonpareils, Old Golden Pippins, Colmar Pears, and St. Germain Pears.

Also, from the Garden of the Society. Pastorale Pears, Blotched-leaved Succory, and common Succory forced in a dark-house.

Heating by hot Water.—In the Horticultural Society's library are some models illustrative of this mode of heating, which are well worthy the inspection of those who do not clearly understand the scheme. We would also recommend the inspection of a variety of models for the same purpose at Messrs. Cottam and Hallen's manufactory, Winsley Street, opposite the Pantheon, Oxford Street. Mr. Cottam, at the suggestion of Mr. Cubit, the engineer, has made a very important improvement on the construction of the boilers, and also an addition of air tubes to the pipes; both of which are calculated to procure additional heat from the fuel expended, and circulate the water with greater rapidity.

The Fear of giving Offence.—Sir, You have, in different parts of your excellent Magazine, stated various advantages and disadvantages that result to horticultural science from the power and influence of the Horticultural Society; but it appears to me that you have totally overlooked one evil. It is this: many gardeners who are your friends, and who are capable of contributing much interesting and valuable matter to your Magazine, are deterred from doing so from a fear of offending individuals in office and power in the Horticultural Society. I could name a great number of instances, and I dare say you cannot be ignorant of some of them yourself; and it rather surprises me that you have not taken some notice of the circumstance. It certainly deserves to be recorded in your pages, were it only to let posterity know the state of horticultural feeling of the times in which we live. I am, Sir, &c.—*A Wellwisher.* Dec. 20. 1827.

What our correspondent states is perfectly correct, and he might have added to his last sentence, "and the obligations of the Gardener's Magazine to its independent supporters." We have had many letters to the same effect, but we really do not believe that gardeners are more afraid of giving

offence to the Horticultural Society than many of their masters. Gardeners, like other men, are no doubt wise in their generation, and will not give wilful offence in any quarter whence they might receive a service; but are gentlemen less feelingly alive to the supposed advantages of getting seeds or grafts from the Society? Both parties act wisely. — *Cond.*

ART. IV. *Linnean Society.*

FEB. 5. 1825. — *Read.* Part of a paper, entitled “Remarks on the Flora of Great Britain, as connected with Geography and Geology.” By J. E. Bicheno, F.R.S. Sec. Lin. Soc.

The author proposes, in this paper, to make some observations on the geography of plants, which has lately attracted so much attention; but, instead of connecting plants with particular temperatures, which has been the chief object of those who have preceded him, he wishes to extend his subject, and to show how far geological structure may have contributed to extend or limit the range of plants upon the earth's surface.

Before entering upon this question, he thinks it necessary to ascertain what plants are really indigenous, and what have been introduced and propagated by artificial means. This he regards as raising many curious enquiries. For example, among other instances he says that *Corónopus didýma* is with us a coast plant, and that, whether the traveller goes to Lisbon, or Madeira, or the Cape, or Sydney, in all these places he will find this species, to which it is not indigenous. He thinks the *Crucíferæ*, as a family, have many of them this migratory disposition. *Sisýmbrium Lilio* and *Thlâspi arvêuse* are among the number.

He rejects also, as unfit for indicating geological strata, all those plants which follow the footsteps of man. Such are the *Chenopôdeæ*, the mugwort, the docks, the plantains, and the mallows. Wherever, in Europe, man plants his habitation, even at the height of 7 or 8000 feet above the level of the sea, there we may expect to find many of these species following after him.

Then he would set aside plants which affect towns and villages, as not assisting him. Those localities offer many curious attachments, and comprehend a much larger class than is commonly thought. Chamomile is found on every green about London, yet does not appear to be indigenous there. Superstition, medical and religions, has contributed again to every Flora. He then went on to state that many species terminate their northern range on walls, such are *Teucrium Chamædryis*, *Holósteum umbellatum*, *Antirrhinum majus*, &c. &c.; many, again, upon the sea shore, where the temperature favours their growth; many upon strata which are of a warmer nature, and which the same species is not inclined to in more southern latitudes. He asserts that plants become a delicate test of strata as they approach their limits; and that many which have no choice of soil at their head-quarters, are observed to be very select when they get to their northern boundary. (See *Gard. Mag.*, vol. ii. p. 405.)

Description of a splendid new Genus of Plants from Ava, by Dr. Wallich, and which he has named, in compliment to the Countess Amherst, *Amhêrstia nobilis*, *Diadélphia Decándria*, and *Leguminôsæ*.

The *Amhêrstia* is a large tree, with the habit of *Erythrîna*; leaves 2 ft. long, composed of 8 or 10 pair of large leaflets of a delicate glaucous colour. The cluster of flowers is pyramidal, 2 ft. or more in length, with a peduncle of 15 in.; the whole of a brilliant scarlet. The petals are 1 in. in breadth, each furnished with a yellow spot at the apex. Four trees have only as

yet been found by Dr. Wallich. Dr. Wallich also notices another remarkable genus, which he has named *Phytocrene* (literally, plant spring), allied to *Araliææ*. Its trunk is as thick as a man's thigh; and, on being divided, yields a large quantity of a limpid, tasteless, and very wholesome water. The plant is well known to the natives.

ART. V. *Covent Garden Market.*

THE mild open winter renders our supply of all common vegetables abundant and cheap. Fine white broccoli, at from 1s. to 2s. per bunch of six or eight heads; purple broccoli, at the same price per bunch of from eight to ten heads; sea-kale, from 1s. 6d. to 4s. per punnet, or dish; asparagus, plentiful and cheap, at from 1s. to 8s. per hundred; onions, from 2s. to 3s. 6d. per bushel. Potatoes, English Kidneys, 4l.; Scotch Reds, from 3l. to 3l. 10s.; Marsh Champions, from 3l. 10s. to 4l.; Ox-nobles and Shaws, from 2l. 10s. to 3l. per ton. A large supply of Newtown Pippins has been imported, but they arrived in bad order; the best sell at from 2s. to 3s. per dozen. The best apple generally received from France is the Reinette Grise; but of this sort few have come over this season, and they are consequently dear. Kitchen apples of our own growth are from 7s. to 10s. per bushel. — *J. G. Jan. 26.*

February 9. — Savoy cabbages, from 1s. 6d. to 3s. per dozen heads. Horseradish, from 1s. 6d. to 4s.; broccoli, from 2s. to 5s.; forced asparagus, from 5s. to 9s.; and celery, from 1s. to 2s. per bundle. Carrots, from 4s. 6d. to 8s.; turnips, from 2s. to 4s.; coleworts, or greens, from 1s. 9d. to 4s.; and leeks, from 1s. to 1s. 6d. per dozen bunches. Spinach, from 1s. to 1s. 6d.; apples, from 5s. 6d. to 10s.; and pears, from 2s. 6d. to 10s. per half sieve. About a third of a bushel walnuts, from 1s. to 2s.; new sweet oranges, from 4s. to 8s.; Seville oranges, from 8s. to 10s.; and lemons, from 8s. to 10s. per hundred. Spanish chestnuts, from 4s. 6d. to 10s.; French chestnuts, from 5s. 6d. to 7s.; Spanish hazel nuts, from 5s. to 6s.; and French walnuts, from 5s. to 6s. per peck. Grapes, from 1s. 6d. to 5s. per lb.; sea-kale, from 2s. to 5s. per punnet. Supply good. Trade rather dull. Prices about as on this day sennight.

New and old Measures. — Is the act of parliament concerning measures a nullity, or is it in force? Look at the measures of this and all other markets; half sieves, from 9 to 10 quarts, and bushel baskets, so called, about 5 pecks! The variation in the measures spoils more of the housewife's made wines than any thing else. If they buy from a conscientious grower, they get 24 quarts of currants to the sieve; from another only 18; and as two sieves were the quantity, if I recollect right, my good mother used to an 18-gallon cask, you may suppose the difference which trusting to measure would make. I really think this wants a little of your pen. I believe, without the party declaring the contents of his measure, according to the imperial standard, he cannot recover his demand. If it is so, a few refusals to pay would bring the Winchester measurers to their senses. I know no better way of paying a cheat than in his own coin. — *Superficial. Brixton Villa, Jan.*

ART. VI. *Architecture.*

BUCKINGHAM Palace. — We have formerly (Vol. II. p. 371.), expressed our approbation of the garden front of this building, and regret to be obliged

to indicate, in common with almost every other journalist, a very contrary feeling with respect to the entrance front, and the angular and side views of this edifice. These display a want of simplicity, grandeur, and dignity. There are too many parts, and consequently most of them are small; there is an unhappy termination of a wall with Doric columns at the extremes of the two wings, indicating poverty of invention, one of the last defects which we should expect to find in Mr. Nash. Two elevated vulgar forms, one in each wing, resemble what are called cockney cottages, and seem to be forced up into that situation as finishings to the regal building. We wonder how they came there, and can hardly restrain our conviction that they really are blue slate cottages, from the small bedroom windows in their sides. There never was a more unhappy introduction of vulgar forms in a building pretending to the character of a palace. We appeal to any one who has ever looked down to this edifice from Piccadilly. More might be said, but the public opinion as to this structure so entirely agrees with our own, that we consider it superfluous.

Grosvenor Palace. — It is gratifying to find a nobleman with a princely fortune, like Earl Grosvenor, not doing good with his money indirectly through the proprietors of gambling-houses, horse-keepers, or others of different kinds, who supply animal and degrading pleasures to the wealthy, but laying it out directly through his own servants and artists in the building of palaces and the formation of gardens. Of the palace and gardens of Eaton Hall we have already spoken. (Vol. I. p. 509.) A design for a town residence is in part executed in Park Lane, which, we wish we could say, will probably be as eminent as a Grecian structure, as Eaton Hall is celebrated as a specimen of palace Gothic. The part of this Grecian building which is finished is not extensive; but it contains one fault, which respect for the architect intrusted with so great a work will not allow us to pass over in silence. The part of the building to which we allude is a picture gallery, which being lighted from the roof, no windows are required in the sides, or at least not on that side which forms a part of the principal front. To vary what would otherwise be a blank wall, three-quarter Corinthian columns are employed, and between these blank windows are introduced. It is these blank windows that we object to, as indicating vulgarity of idea, and poverty of invention. The naked wall would have been preferable, because it would have been negatively instead of positively bad. But what does Grecian architecture suggest for such a situation? Certainly, not windows, but niches for statues below, and over them, if any thing, panels of sculpture; or the whole might have been treated as one grand panel of sculpture, screened by the three fourth, or detached columns; statues and sculpture without, would have been peculiarly appropriate for the picture gallery within. Small panels of sculpture are indeed introduced in one part; but they merely display wreaths of flowers and fruits, objects of very little meaning, and here executed on such a large scale, as to be by far too conspicuous, and consequently add to their insignificance of expression. It is the mind and character displayed by basso and alto relievos, that give them their great interest, and even if at a distance the story cannot be made out, still we know that a story is there, and something to exercise the mind upon, if we were nearer and had leisure. Such flowers and fruits as are met with in sculpture hardly give rise to two ideas; if they were correct imitations of nature, they would be better; but as they generally are, they are merely of use in a picturesque point of view, to supply roughness and shade. There is a noble group of sculpture in the centre pediment of one of the ranges of buildings in the Regent's Park, put up, as we understand, at the expense of the builder, a private tradesman. Such instances of taste and spirit deserve the highest applause.

ART. VII. *Domestic Economy.*

SPRUCE Beer.—Early in the spring, cut off the young branches of the pine or fir three or four inches in length, and break them into small pieces; boil them in water, and, after filtering the extract through a sieve, add to sixteen gallons of it about six pounds of sugar. It may then, by boiling, or evaporating in a hot-house, be reduced to a syrup, which will keep in bottles for a length of time. For beer, mix three pints of this extract with thirty of water; boil it for about two hours, and, when cold, put it into a cask, and ferment it in the usual method.

Tea and Balm Tea.—With regard to tea, for which we pay such immense sums to China, it is stated that the first leaves of the whortleberry, properly gathered and dried in the shade, cannot be distinguished from real teas. This is the berry on which the black cock feeds, so that by the culture of it we may secure two good things. Be it known to all that John Hussey, of Sydenham, who lived to 119 years of age, took nothing to his breakfast, for fifty years, but balm tea sweetened with honey. (*Art of Preserving Health.*)

Bread from Turnips.—Let the turnips first be peeled, and boiled in water till soft and tender; then, strongly pressing out the juice, mix them together, and, when dry (beaten or pounded very fine), with their weight of wheat meal; season it as you do other bread, and knead it up; then, letting the dough remain a little to ferment, fashion the paste into loaves, and bake it like common bread. Some roast turnips in a paper under the embers, and eat them with sugar and butter (*Evelyn's Misc. Writings*, p. 756.)

Cheap Soap.—Potatoes, three parts boiled, afford a very good substitute, especially for washing the hands. (*Brit. Mir.*)

Tainted wooden Casks, of every description, may be rendered perfectly sweet and wholesome by washing with diluted sulphuric acid, and afterwards with lime water and pure water. (*Journal d'Agric des Pays Bas*, December, 1826, p. 374.)

ART. VIII. *Hints for Improvements.*

NEW Ideas.—In *The Mummy*, a tale of the twenty-second century, an attempt is made to predestinate the application of steam, and other modern improvements, which, whether intended in the way of ridicule or effect, it may not be altogether useless to notice. A patent steam mowing apparatus is set to work in a hay field, and the weather being foggy the hay is dried with the use of a burning glass! A field of barley, in a very dry state, is watered by the farmer, who, seeing “a nice black heavy-looking cloud sailing by,” gets out his electrical machine, and draws it down in five minutes. Communications are held with every part of the world by means of telegraphs, and a private gentleman, whose son is engaged in battle in Germany, hears the result of an engagement a few minutes after it happens. A steam digging machine is mentioned; cooking is effected by a chemical preparation, without the use of fire; it is the fashion for great people to have only one dish, and fricasees and ragouts are only devoured by the *canaille*; beds are inflated with air instead of feathers; house servants, of every description, are poets, artists, and philosophers; water is turned into ice by mechanical pressure; fog and vapour is turned into snow or rain at pleasure, by withdrawing electricity; all travelling is performed in balloons; the tour of the whole world can be made in six weeks; and great people, finding it so very easy to be transported from one place to another, have

left off travelling, and seldom leave their country seats. In a grand procession and ovation celebrated in Black Heath Square, said to be the largest and finest square in the world, the air was thronged with balloons, and with a variety of aerial horses, bestrode by city dandies, whilst others floated upon wings, or glided along on aerial sledges. "The throng of the balloons was very dense. Some young city apprentices, having hired each a pair of wings for the day, and not exactly knowing how to manage them, a dreadful tumult ensued, and the balloons became entangled with the winged heroes and each other in inextricable confusion. The noise now became tremendous; the conductors of the balloons swearing at each other the most refined oaths, and the ladies screaming in concert. Several balloons were rent in the scuffle, and fell with tremendous force upon the earth; whilst some cars were torn from the supporting ropes, and others roughly upset. Luckily, however, the whole of England was at this time so completely excavated, that falling upon the surface of the earth was like tumbling upon the parchment of an immense drum, and, consequently, only a deep hollow sound was returned as cargo after cargo of the demolished balloons struck upon it; some of them, indeed, rebounded several yards with the violence of the shock.

The country is governed by an absolute queen, who is "full of wild-goose schemes." — "Only imagine, Sir Ambrose, she showed me this morning a plan for making aerial bridges to convey heavy weights from one steeple to another; a machine for stamping shoes and boots at one blow out of a solid piece of leather; a steam-engine for milking cows; and an elastic summer-house, that might be folded up so as to be put into a man's pocket!"

Coal and other fuel having been long in disuse, smoke is unknown in London, and the English are the first sculptors in the world. The gardens of the nobility, who have town-houses, extend from the Strand to the Thames, and all of them are open to the public. Nothing in summer can be more enchanting than these gardens, filled with statues and beautiful originals; in winter the Thames "was frozen, and persons glided along it in glittering *traineaux*, or skated gracefully with infinite variety of movement; whilst, every now and then, a steam-percussion-movable bridge shot across the stream, loaded with goods and passengers, collapsing again the instant its burthen was safely landed on the other side."

There is a patent steam book manufactory in Hatton Garden, where also quotations are cut, dried, and made up into pills for the use of authors. Every regiment, ship, and private family has its philosopher as well as its chaplain and surgeon. The government of England is an absolute monarchy; Ireland and Scotland are separate kingdoms; the Catholic religion is every where established; the most enlightened part of society believe in ghosts and goblins, and the reason given is, "because the extremes of ignorance and civilisation tend alike to produce credulity."

The most extravagant and impracticable ideas will sometimes aid in forming new and useful combinations; and it is good to see the subject of scientific invention, and intellectual improvement, pushed to the extreme point, in order to show the absurdities to which every thing human is liable to give rise.

ART. IX. *Antiquities of Gardening.*

FOUNTAINS and Jets of Water in the Gardens of the Romans. — It is difficult to conceive how the Romans could render water so great a source of artificial ornament in their gardens, without the use of lead pipes, and yet

it has long been a prevailing opinion that water was conducted by that people in open channels only, or by means of pipes of wood or earthenware. The contrary, however, proves to be the fact, for specimens of Roman leaden pipes are now to be seen in the Museum of Natural Philosophy in the University of Edinburgh. (*Jam. Jour.*, Dec. 1827. p. 201.)

Inventor of serpentine Rivers.— Christopher Wren, chaplain to King Charles I., dean of Windsor, and father of Sir Christopher, the architect, claimed the origin of serpentine rivers as his invention. In a marginal note affixed to Sir Henry Wotton's *Elements of Architecture*, published in 1624, he says, "For disposing the current of a river to a mightie length in a little space, I invented the serpentine, a form admirably conveyeing the current in circular and yet contrary motions upon one and the same level, with walks and retirements betweene, to the advantage of all purposes, either of gardenings, plantings, or banquetings, or aery delights, and the multiplying of infinite fish in a little compass of ground, without any sense of their being restrained. In brief, it is to reduce the current of a mile's length into the compass of an orchard."

ART. X. *Calls at Suburban Gardens.*

BATTERSEA Nursery, January 8.— This is a new establishment by Mr. Russel, chiefly for the propagation of ornamental shrubs, showy flowers, and green-house plants. He has built a green-house, seed-room, and dwelling-house. The green-house is heated by a smoke flue, composed of tubes of stone ware, of his own invention, and which are made at a manufactory for this sort of ware at Battersea. The section of these tubes exhibits a square with an elliptic top; they are in lengths of 2 ft. with a shoulder at one end, and a rebate at the other, for the purpose of being neatly fitted together. The thickness of the material is $1\frac{1}{2}$ in., and the clear width within 12 in. by 8 in. In the middle of the bottom of each length is an opening, 6 in. by 4 in., for the purpose of putting in the hand and a brush for cleaning the flue; a cover fits this opening very accurately, and is kept in its place by a small cross-bar of earthenware. Mr. Russel values a flue constructed of this description of tubes, for the neatness of its appearance, and for the ease with which it is heated, and consequent rapid effect in raising the temperature of the house. He has had much experience at Kew, and other places, in managing hot-houses, and has often found the greatest inconvenience from thick brick flues on the old plan, when the weather has suddenly changed during the night. At Kew he has had thirty fires to attend to at one time; and sometimes, in consequence of a sudden change of weather, to light the green-house fires at ten o'clock at night. Although the furnaces, fuel, and flues were good, no exertion on his part could bring the house up to a proper temperature in less than two or three hours; but, with his own stone ware tubes as flues, he can raise a green-house to the required heat at any time in fifteen minutes. He approves highly of the mode of heating hot-houses by hot water, but very properly states that, in the case of green-houses, some inconvenience will be found when a sudden increase of temperature is required, in consequence of the slowness with which water is heated, and gives out its heat. Mr. Russel thinks that tubes of stone ware, of the same material as his flue tubes, might answer very well for circulating hot water; he has some experiments with a view to that end in progress, and has promised that we shall hear from him again on the subject.

The composition of the material, and the manufacture of Mr. Russel's flue tubes, he says, are only known to the person who has the manufactory at Battersea. In appearance it seems to come nearer the Bath stone than any other, is as firm and hard as metal, and fire, water, and weather proof. Mr. Russel will undertake to get it manufactured of any form, and to send it to any part of the united kingdom.

The Sun Inn, Maidenhead, July 25. — From Dropmore to Maidenhead the road presents a series of views of richly wooded, highly cultivated, and considerably varied surface; with, every now and then, the winding waters of the Thames bursting into view. It is highly gratifying to observe the excellent gardens of many of the country inns in England: to those who have a garden of their own, it keeps up the illusion of home; and nothing can be more for the interest of the innkeepers, than to heighten this illusion as much as possible. In Poland and Russia, where the public inns do not even supply beds for travellers, no one can ever forget where he is; in England, if the inn is in a quiet situation, and surrounded by a large garden, a rich man travelling with his family has almost every thing he could wish for. The gardens of the inn at Salthill are not only extensive and abounding in flowers and trees, but varied in surface, full of romantic shady walks, covered seats, bowers, and picturesque views. The ornamental garden of the Sun Inn at Maidenhead is neatly laid out; and it is pleasing to recognise in it the taste for grotesque masses of roots, mosses, and flowers, which seems to have been introduced into this part of the country by Lady Grenville. The kitchen-garden is well stocked with every culinary vegetable; and, in a range of brick-built pits, asparagus, sea-kale, kidney-beans, potatoes, and mushrooms are forced, and are succeeded by cucumbers and melons.

Perhaps the time is not far distant, when libraries, more or less extensive, will be kept at every inn, and even at every public-house, for the use of the guests. At very large inns there might be a public room devoted to books and intellectual entertainment; occasionally, dramatic public readings, sermons, lectures, philosophical experiments, tableaux (*Encyc. of Gard.*, § 281.) &c. To inns having such institutions there ought to be a tutor, or, as *The Mummy* suggests, a philosopher, attached; and it might be well, perhaps, in some cases to have a family governess to assist in the concerts, and form the nucleus of small parties of bachelors and strangers, who might prefer spending their evenings in a public library, and with a degree of allusion to family society, to sitting alone in a room. At any rate, if it be allowable to contemplate improvement in every other thing, why not in public inns?

ART. XI. *Retrospective Criticism.*

ACCENTING the Names of Plants. — Sir, Amongst the many useful articles contained in your valuable Magazine, I consider the accenting the names of plants, so as to direct gardeners to the right pronunciation of them, not one of the least, of which the alteration you have made in the last number, is a considerable improvement, in making use of the two accents (the grave and the acute) to mark the long and the short syllable. There are some names of plants which all the country gardeners pronounce wrong; and, by the habit of doing so, have taught ladies and gentlemen who are not botanists to do the same: so that, if a good botanist happens to be in company with such ladies or gentlemen, inspecting a collection of plants, and hears them mispronounce the name of any plant which he has to name after-

For Cistinææ read Cistinææ.
 For Corypha read Córypha.
 For Glycine read Glýcine.
 For Oxális read O'xalis.
 For Spártium nubigénium read S. nubigenum.

VOL. III.

Page line
 48. 29. for Lýcium read Lýcium.
 49. 16. for Lýcium read Lýcium.
 50. 18. for monogýnum read monógynum.
 33. for Mária read Marica.
 52. 10. for euryoides * read euryoides.
 53. 27. for Lipàris read Liparis.
 28. for cælogýne read cælogýne.
 40. for ixioïdes read ixioïdes.
 68. 30. for ericoïdes read ericoïdes.
 31. for Empetrææ read Empètrææ.
 37. for urticææ read urticaæ.
 39. for Thymelææ read Thymèleæ.
 69. 8. for iridioides read iridioides.
 71. 10. for Myrtææ read Mýrtææ.

Page line
 13. and 73. for Iridææ read Iridææ.
 24. for diversilòbum read diversilòbum.
 25. for lasiocaulon read lasiocaulon. †
 32. for streptánthera read streptánthèra.
 33. for Iridææ read Iridææ.
 35. for Asphodelææ read Asphodèleæ.
 42. for Smilacææ read Smilacææ.
 72. 8. for Cistinææ read Cistinææ.
 24. for Achilleæ read Achilleæ.
 27. for saxifraga read saxifraga.
 7. from bot. for farfàra read farfàra.
 80. 29. for colutèa † read colùtea.
 105. 46. for Oxális read O'xalis.
 106. 16. from bot. for CEnóthèra r. CEnothèra.
 6. from bot. for Glycine read Glýcine.
 107. 40. for CEnóthèra read CEnothèra.
 107. 34. for Iridææ read Iridææ.
 182. 4. from bot. for cerasus read cérasus.
 196. 10. for Asàrum read A'sarum. †
 37. for cyanèum read cyàneum.
 2. and 4. from bot. for Cyclàmen read Cýclamen.

Accenting Botanical Names.—“Etymologia Græca plantarum difficillime eruitur in plerisque plantis, adeoque conjecturæ sæpius satisfaciunt.” *Linnæi Philosoph. Botan.*, s. 240. —“The Greek derivations of the names of many plants are extremely difficult to discover, and therefore we must often be satisfied by conjecture.”

“Auctoritas vocum petendaest patribus.” *Ib.*, s. 241. —“The authority of a word is to be sought for from its originator.”

Sir, I am much interested in the success of the Gardener's Magazine, because I think it calculated to diffuse useful and agreeable information.

Since you have adopted the accentuation of Latin words, I have carefully noted the variations which have crept in, probably from the difficulty of correcting the press. Allow me to make some enquiries on this subject. I have before me at present only Nos. VIII. and IX. of the Gardener's Magazine, but the observations arising from the pages of these will have a more extensive reference.

First, as to the accentuation of *Genera*.

Vol. II. page 397. and 442. You accentuate *Berberis* on the second syllable; but in No. IX. p. 97., *Bérberis* on the first. Which is right, and on what authority? [Answ. *Bérberis*.]

397. *Tropæolum*. Why not *Tropæ'olum*?

Phaseólus. Why not *Phaseólus*?

398. *Aráchis*. From what derivation? [It is a name of Pliny for a plant which, he says, has neither leaves nor stems.]

422. *Glycine*; and p. 106., No IX. Why not *Glýcine*?

436. for *Hénricus lege Henricus*.

437. *CEnóthèra*, and 484., and No. IX. p. 107., must be *CEnothèra*; *θηρα* being the original name, or, as you quote it, *thera*.

442. *Arbùtus* is *A'rbùtus*, on the authority of Virgil.

454. *Atrópa* is as certainly *A'trópa*, from *Ατροπος*.

* In all words of this kind, ending in *oides*, which signify the form or shape of another plant, the *oi* is to be pronounced as two syllables, as *euryo-ides*, with the accent on the *i*, which is long in the Greek word whence it is taken. Thus, in *ixio-ides*, *ides* signifies the form or shape, and *ixio*, of an *ixia*; so in *erico-ides*, *ides* is the form or shape, and *erico*, of an *erica*.

† This word is commonly pronounced *colutèa*; but this is certainly wrong, for it is taken from the Greek word *coloutca* of Theophrastus, in which the *e* is the short *e* in Greek.

455. Hellebórus ought to be Hellèbornus, from βορα; but this accuracy may be resisted by custom, as in Anènone, which is certainly Anemòne, on the authority of Theocritus; but the Greek lexicons seem aware that Anènone is equally correct, from the derivation from ἀνεμος and μενω.
455. Oléa is incorrect. O'lea, in No. IX. p. 106., is Virgil's accentuation. Why Asárum, and Junipérus, in opposition to Virgil, and not A'sarum and Juníperus?
472. Ornithogárum must be wrong: the stress must be on the third syllable, ornithògárum, in our English pronunciation, although the third syllable be in truth short.
484. On what authority is Jasmínium accented on the *second* syllable? and why Jalàpa, instead of Jásminium, and Jálapa?
- Vol. III. page 49. Pittospòrum ought to have the accent on the *second* syllable, though, I admit, it will sound harsh as Pittòsporum; but σπορος ought to guide us.
50. Azedarach. Is the *local* pronunciation on the third syllable? [It should be *Azedarách.*]
Verónica will probably retain its usual pronunciation, as accented here; but the third syllable is long, from εικων.
53. Cœlogýne; and 60. Monogýnum, both wrong; as the first syllable in γυνη is short, in Homer, I think, repeatedly.
70. Pimèlea, from πιμελη; I prefer, therefore, Pimelèa.
72. Saxifràga, certainly wrong, on the authority of Horace, "mare naufrágum." [Saxifraga.]

Secondly, I have doubts and questions as to *specific* names accented in Nos. VIII. and IX.

No. VIII. page 397. Humìlis must be a mere erratum for hùmìlis.

451. Apocynèa is one of a numerous class, in which the accent can scarcely be correct as placed on the antepenultimate, as in Cistinèa and Lotèa: the *e* is, by position, short.
452. Eriocaúlon should have the accent marked, if it can, so as to show that the stress is on the *au*, not on either vowel separately. *
453. Crucifèræ, a mere erratum, as well as
462. nubigénium, for Crucifèræ and nubígenium.
469. Serotinùm. *Quære*, and not Serótinum?
484. Campanula medium, instead of medià, is an error produced by C. *speculum*.
486. Aurantiàca I do not like, but cannot improve, without laying the stress on the *i*, a short vowel. I think, however, that such is the usual mode of pronunciation.
- No. IX. page 71. Diversilòbum. Where do we find authority? Homer has it λοςος; therefore we shall be more nearly correct by pronouncing it diversilòbum.

Can we not attempt to form a few rules on the subject of pronouncing Greek and Latin words, where the genius of our language cannot distinctly note the proper quantity of the syllables? I suggest, as *Rule I.*, where the concurrence of several short syllables in a *polysyllable* precludes a perfect attention to the true quantity of each syllable, that we place the accent on the antepenultimate, as in Eupatòrium, diversilòbum, ornithògárum, &c.; or, in compound adjectives, as diversilòbum, we divide them diversilòbum. *Rule II.* Where trisyllables *cannot* be pronounced according to the precise quantity of each, that we place the accent on the antepenultimate syllable.

* In future the diæresis will be used in cases where a diphthong is not intended. — *Cond.*

I have marked the erroneous and doubtful accentuation of No. X., but withhold it until I learn your wishes. Sir, yours, &c. — *T. B.* Dec. 3. 1827.

For these corrections we return our best thanks, and shall feel greatly obliged by their being continued. In future, we hope to render them less necessary. In our *Hortus Britannicus* we have, in almost every case, followed Donn's *Hortus Cantabrigiensis*, and meant to have done so here; the above, therefore, are inadvertencies, which we hope to avoid in future.

— *Cond.*

Beauty in Masses. — Sir, An observation of yours in the description of the grounds at Dropmore, with which you have recently favoured the public, having struck me as something incongruous in the general manner in which you have made it, I take the liberty, though neither author nor botanist, of addressing you on the subject, in the hope of eliciting from you at some future time some new lights upon it, or of rendering more bright, or directing more wisely, those dim ones which I may have at present.

You speak highly of the advantage of placing beauty in masses. A general idea, and so placed as to make me think that you mean to speak of every kind of beauty, and therefore, without diverging even from the subject of gardening (if I understood it), I think, from the known effect of beauty in other matters, I shall be able to give at least some reason for dissenting from you in this. But I must premise that, notwithstanding the beauty of my subject, and the admiration which, as a true lover of beauty, I must have for the curve and elliptic, all I have to say will nevertheless be in parallels. I bespeak your patience; in other words, I presume not to be circuitous, and to begin a species of interrogative comparison with the liberal arts. In poetry, which, I would ask, has the greater effect? a single fine thought, simile, or allusion, or a string or collection of them? Which, in painting, are the more generally admired pictures, speaking of immediate effect, those in which a mass of one tint in colour predominates, or those in which there is a happy blending or mixing of colours? And in music, are we more affected by a particular note long held, or by undulating swells or cadences? To speak on a subject still more generally understood and felt, what is the effect of beauty in those locomotive flowers of creation, women? Does the presence of one beautiful woman among a crowd of others who are not so, create more or less effect than when beautiful women are seen more numerous? Or, to speak more directly still, is feminine beauty more prized, admired, or striking in Greece, where it is seen *en masse*, as one may say, or in France, where truth obliges us to confess that it is comparatively rare? You will say, perhaps, that masses of flowers of one sort in a garden are in direct imitation of nature herself, who in a wild state scatters profusely *en masse*. It may be so; but I never knew that it was in any particular form, segment, or circle. The little hillocks of wild thyme that scent the air so agreeably for the traveller, the modest forget-me-not that borders the rivulets, and the scented violet that creeps along the shade, may indeed be seen in profusion where they are found; but they are nevertheless so disposed by "nature's sweet and cunning hand," as to set at nought the proportions of square or round, oblong or semicircular. If art means therefore to trammel her by line and rule, and to take off her beautiful wildness and whimsicality, she ought at least to supply her with elegance, which is scarcely found *en masse*. On this very account how exceedingly beautiful and pleasing was the manner in which the chrysanthemums were disposed in the Horticultural Society's garden last season. Had these fanciful children of the garden been arranged in masses, according to their tints and shades, how formal and unnatural would the effect have been, at least according to my opinion. The relation between art and nature has always appeared to me of the same kind as that between judgment and imagination; the latter, uncorrected by the

former, presents to the mind perhaps the most beautiful and sublime pictures, but they are always wild and fantastic. If, however, she permits judgment to advise and criticise without meddling too much in the affair, perfection is likely to ensue, which would never perhaps be the case if the imagination were left entirely to herself, or that judgment sat coolly down to make a picture of her own, instead of making a corrected and more elegant copy of that which was presented by her volatile friend. I remain, Sir, &c. — *Variiegata*. January, 1828.

If the general manner in which we have expressed ourselves in favour of "beauty in masses," in the article alluded to, be liable to misconception, our elegant and ingenious correspondent, if she will take the trouble of referring to other parts of the Gardener's Magazine, will find that we had previously endeavoured to explain our ideas on this subject. We refer *Variiegata* to our note in Vol. II. p. 309. Beauty may be in masses, without being in formal masses; but even formal masses of beauty, beauty in curved forms, or in beds bounded by parallel lines, is to be admired in its way; for neither in nature or art is every thing in the superlative. Beauty is not of one but of many kinds. We cannot agree with *Variiegata* in admiring the manner in which the chrysanthemums were disposed in the Horticultural Society's garden last season, for reasons so fully detailed in the note referred to, that we need only request *Variiegata* to reconsider that note, and to favour us with some farther remarks on the subject. — *Cond.*

Planting Hyacinths.—Your correspondent, *Rusticus in Urbe* (p. 162.), is completely wrong in regard to the cause of the excellence of Mr. Campbell's hyacinths. He says, "the great merit of Mr. Campbell's mode of treating hyacinths depends entirely on the depth, 4 in., at which he plants them." Quite the contrary. The merit consists, as Mr. Campbell has shown, in planting them only 1 in. under the surface. The dung which Mr. Campbell puts over them is for the purpose of keeping out the frost, and keeping in the moisture: it is quite loose, dry, and porous; otherwise it would not have either of these effects. So far from the wild hyacinth, or harebell, in our hedges and woods, naturally rooting deep, I can affirm, from observation, that they only do this on very soft soils, and that, when they do so, the plants are always weak, and never flower well. If *Rusticus in Urbe* will look into any wood where the harebell abounds at this season, he will find the strongest bulbs invariably near the surface, and in general within an inch of it, or even less. I refer *Rusticus in Urbe*, or any other of your readers, to the woods at Caenwood, at Hampstead, where the wild hyacinth abounds, and where, from recent inspection, I can affirm, from my own knowledge, that the facts are as stated above. Yours, truly,—*Rusticus Sylvanus*. Sept. 25. 1827.

We have shown the communication of *Rusticus Sylvanus* to our neighbour, Mr. Campbell, who entirely agrees with what R. S. has stated. We can affirm the same thing, having lately been in woods in Hertfordshire where the hyacinth abounds. — *Cond.*

Cobbett's Garden. (p. 564.)—As I am not an admirer of this person, I am not likely to say any thing in his praise; but I think you are not just in your observations on his prices. If you have seen in his shop-window the branch of the fall-apple, I think you will allow, from the appearance of the specimen, that it is not only a great bearer, but a very handsome apple. The branch is about a foot long, with four very large and beautiful apples upon it, and several excellent blossom buds for the next year; and 9d. for a one-year grafted tree, or 1s. 3d. for a larger, say of two years, is much below the usual rate; the price of Keen's seedling strawberry is very low also. I have myself this autumn paid 4s. per hundred, and I think at Mr.

Keen's, at Isleworth, you will pay 10s. Cobbett selling at 2s. 6d. per hundred is doing, I think, a great service to us Cockneys.

I intend, if you will give them room, to send you my experiments on growing strawberries in small gardens. I have produced thirty-six pottles (weight 28 lbs.) on seven square yards of ground, of the Bostock or Wellington, in ten months after planting, and though the dry summers have hindered my continuing it, my soil being a hot gravelly one, I do not doubt I shall be able to do it again. — *Superficial. Brixton Villa, January.*

Double Yellow Rose. — I have heard that this flower cannot be blown near London; is it true? — *Id.*

The Grub of the Cockchaffer (p. 295, 334.) in French is called *mante*, and is very destructive to coss lettuces when first transplanted. A neighbour of mine, whose gardener had manured a border with dung full of the grubs, which he carelessly did not pick out, had this year three transplanted crops of lettuces destroyed. When a lettuce flags, by digging the root out with a trowel, the insect I call *mante* will be found: it is an ugly grub, about the size of the two top joints of the little finger, of a dirty white, with brown legs, and is always in a bent state. When I break up my little melon bed every autumn, I generally find a great many in the dung, about 6 in. from the top, exactly under the place where the woodwork of the frame stood. Knowing what mischief they do, I carefully turn the dung over two or three times before I use it. Being no entomologist, I turned to Samouelle's work, to make out what insect the *Anomalia hortensis* was, and am no wiser. Is it the green gold beetle, usually called the May bug, that is very fond of roses and lilies, and also often found in cucumber frames? [We believe so; if we are wrong, Mr. Swainson will correct us.] The sparrows are great enemies to the chaffer, but they are much destroyed, for the mischief they do to early peas, &c. If hops, after brewing, are strewed between the rows, I have found it preserve peas much; the sparrows prefer the hop-seed to any thing. I myself think sparrows of great service in the close gardens in the vicinity of London. I recollect stopping a putlog hole where a pair used to breed, and I never had a fair bloom on a large maiden's blush rose afterwards; before, I had watched them for hours opening the leaves, and carrying off the green caterpillars, which infests this rose more than any other near London. The cockchaffer can be caught in great numbers by shaking the trees they frequent when the sun is out; they will fall to the ground, and can there be picked up and destroyed. — *Id.*

Knowledge for the Poor. (p. 342.) — Though I have had very little practice in French for some years, I should prefer, and I think understand, the book of Baron Dupin better than the English works by the Society for the Diffusion of Useful Knowledge. The French have the tact of writing home to the ignorant, so that one who reads French can understand them; but our works in general require not only two or three languages, but a complete mathematical knowledge, or a better education than in general falls to the lot of those who wish to read them. — *Id.*

Scraping off the old Bark of Fruit Trees, by Mr. Thomson (p. 309.), is not a new discovery. (See *Lyon on Fruit Trees*. Edin. 1816.) — *Id.*

The Pomological Magazine is certainly not a cheap work, compared with either the old *Botanical Magazine* or the *Botanical Register*. Though the colouring is good, I do not think, from the description of the fruits, that the drawings are correct; e. g. the Royal Apricot is described as a less fruit than the Moorpark! Look at the fruit! I do not pretend to say that there never was such a sized fruit, but I only know that if I were to describe the natives of the sister island, I should not figure the Irish giant as a specimen. The apple, Sugar-loaf Pippin, seems put to a branch that did

not belong to it. I trust the publishers will not abridge the profit of the booksellers an eighth, as they did in the *Botanical Register* after they had got the work forward: I assure them I am not the only one that recollects it. In short, your observations on the *Pomological Magazine*, I think, show that it is a work conducted in any way but the right. Mr. M. H. is certainly correct in his observations concerning the language. Let me add an observation of John Nicholson, Esq., author of the *Farmer's Assistant*, printed at Albany, in America, 1814, who, speaking of English authors, says, "We have plain English enough for every purpose of this kind, and there is no need of farmers' having a vocabulary for cattle, consisting of barbarous words, which none but themselves would be likely to understand." — *Id.*

An Orchard in Miniature. (p. 281.) — As trees are sold by the nurserymen by the names of Free and Paradise Stocks, I should conceive any purchaser would be disappointed in ordering plants on the small wild crab; therefore, with submission to those who know better, their orders should be for plants on Paradise stocks. There are good collections of choice apples both at Barr and Brookes's, and Chandler and Buckingham's: price for small trees at Barr's, on crab stocks, 1s.; on Paradise stocks, 1s. 6d.; and, I believe, the same at Chandler's. If they are large trees, or have been removed to throw them into fruit, 6d. to 1s. each more will be charged. I had a dozen from Barr at 18s. two years ago; many bore the first year, and now show much bloom for next year, and they can be well managed at the distance mentioned, though I fear the Hawthornden sort recommended would be apt to run too freely; it is a very strong grower on a free stock. I believe, where filberts are grown in Kent for sale, they are planted in the manner of the *orchard in miniature*, with some standard trees amongst them. I very much prefer young small trees, having always observed that in a few years they will beat those that were much larger when planted, not only in wood, but also in fruit. Ten years ago two Jargonelle pears were planted within 20 yards of each other; one cost 7s., the other 1s. 6d.; the large one never recovered, the other is a fine tree. — *Id.*

ART. XII. Answers to Queries, and Queries.

IRIDÆE, in Answer to Mr. Swainson. (p. 378.) — Sir, In answer to Mr. Swainson (the author, I presume, of many valuable and elegant works on conchology and other branches of natural history), I beg leave to say that it will give me very great pleasure if, by exchange of plants, or any other mode he may suggest, we can mutually assist each other in enlarging our collection of the beautiful genus *Iris*. I have therefore thought it advisable to send you a list of those species and varieties which are in my collection at present, and should you deem it worthy of a place in your interesting Magazine, it may be the means of supplying our desiderata, and of enlarging the collections of other individuals who may be engaged in the same manner, as I am convinced that many species are cultivated in the neighbourhood of London which are not to be met with in this part of the kingdom, I am, Sir, &c. — *David Falconar, Carlowrie, Kirkliston, near Edinburgh.*

I. BARBATÆ. — Bearded.

IRIS.

1. pumila.

1. purpurea. *Bot. Mag.*, vol. i. tab. 9.

2. violàcea. *Bot. Mag.*, vol. xxxi. tab. 1261.
 3. álba.
 4. cærùlea.
 5. lùtea. *Bot. Mag.*, vol. xxx. tab. 1209. Is this *I. lutescens* of authors?
 2. cristàta. *Bot. Mag.*, vol. xii. tab. 412.
 3. susiàna. *Bot. Mag.*, vol. iii. tab. 91.
 4. florentìna. *Bot. Mag.*, vol. xviii. tab. 671.
 5. aphýlla.
 1. plicàta. *Bot. Mag.*, vol. xxii. tab. 870.
 2. Swértii?
 6. variegàta. *Bot. Mag.*, vol. i. tab. 16.
 2 varieties.
 7. sambùcina. *Bot. Mag.*, vol. vi. tab. 187.
 8. squàlens. *Bot. Mag.*, vol. xxi. tab. 787.
 9. lùrida. *Bot. Mag.*, vol. xviii. tab. 619.
 10. fimbriàta. *Bot. Mag.*, vol. xi. tab. 373.
 11. germànica. *Bot. Mag.*, vol. xviii. tab. 670.
 12. pállida. *Bot. Mag.*, vol. xviii. tab. 685. Dalmatian *Iris* of the London nurserymen.
 13. dichótoma. *Sweet's British Flower-Garden*, tab. 96. *Iris pomeridiàna* of Fischer.
 14. sórdida. *Willdenow Enumeratio Plant.*, suppl., p. 4.
 15. furcàta. *Bot. Mag.*, vol. i. tab. 2561.
 16. negligèta. *Bot. Mag.*, vol. i. tab. 2436.
 17. sub-biflòra. *Bot. Mag.*, vol. xxviii. tab. 1150.
 18. hungàrica. *Sweet's British Flower-Garden*, tab. 74.

II. IMBE'RBES. — Not Bearded.

19. Pseùd-àcorus.
 20. foetidíssima.
 21. vírgínica. *Bot. Mag.*, vol. xix. tab. 703.
 22. versícolor. *Bot. Mag.*, vol. i. tab. 21.
 2 varieties.
 23. fúlva. *Bot. Mag.*, vol. xxxvi. tab. 1496. *Iris cùprea*.
 24. tridentàta. *Pursh's Flora. I. tripétala*, Walter.
 25. ochroleùca. *Bot. Mag.*, vol. ii. tab. 61.
 26. halóphíla. *Bot. Mag.*, vol. xxiii. tab. 1131.
 27. spùria.
 1. màjor. *Bot. Mag.*, vol. xxii. tab. 875.
 2. mìnor. *Bot. Mag.*, vol. ii. tab. 58.
 3. stenógyna. *Bot. Mag.*, vol. xxxvii. tab. 1515.
 4. desertòrum. *Bot. Mag.*, vol. xxxvii. tab. 1514.
 28. vérna. *Sweet's British Flower-Garden*, tab. 68.
 29. gramínea. *Bot. Mag.*, vol. xviii. tab. 681.
 30. ensàta.
 31. sibérica. *Bot. Mag.*, vol. ii. tab. 50.
 flòre álbo. *Bot. Mag.*, vol. xxix. tab. 1163, and *I. flexuòsa* of Murray?
 altàica.
 32. hæmatophýlla. *Bot. Mag.*, vol. xxxix. tab. 1604. *Sweet's British Flower-Garden*, tab. 118.
 33. acùta. *Willd. Enum. Plant. suppl.*, p. 4.
 34. triflòra. *Link. Enum. Plant.*
 35. prismàtica. *Bot. Mag.*, vol. xxxvii. tab. 1504.
 1. caroliniàna, } of London nurseries.
 2. missouriénsis, }

36. ruthénica, var. 6. *Bot. Mag.*, vol. xxxiv. tab. 1395.
 37. nepalénsis ?
 38. Pallásii chinénsis. *Bot. Mag.*, vol. xlix. tab. 2331.
 39. cœlestina ?
 40. pennsylvánica, of the London nurserymen.
 41. biglumis. *Willd. Enum. Plant. suppl.*
 42. tuberòsa. *Bot. Mag.*
 43. Xíphium.
 44. pérsica.
 45. sp. ? Found growing on old walls near Paris, with pale yellow flowers, resembles *I. germánica*.
 46. Guldenstädii atomaria.

I have six plants apparently different from any of the above, but as they have not flowered I cannot ascertain the species. I beg leave to add the following species to my desiderata before sent you. (p. 118.)

1. *Iris lívida*. *Sweet's Hort. Britt.*
2. *Iris longiflora*. *Roemer and Schultes.*
3. *Iris grácilis*. *Begelow, from North America.*
4. *Iris lacústris*. *Nuttal, North America.*

D. F.

Oxalis caprina. — Dear Sir, *Oxalis caprina*, *Botanical Magazine*, 237., mentioned in your account of Dropmore, at p. 260., in your last Number, is the *O. cernua* of Thunberg, which name, being the original one, should be adopted, as has been already done by Decandolle in his *Prodromus*, p. 696.; and by Sweet in his *Hortus Britannicus*, p. 86., it is characterised by having a little stem, and a many-flowered scape, with drooping yellow flowers; whereas, on the contrary, the *O. caprina* of Linnæus has no stem, a two to four flowered scape, and red flowers. The present *O. cernua* is a charming subject, nearly hardy, requiring only to be planted in light soil, and to be protected with a little mulch in severe weather, where it will increase and flower in profusion. I have the honour to be, &c. — *Botanicus. January 15. 1827.*

Earthenware Pipes. — Sir, In reply to the query of your correspondent, J. M. of Brighton (p. 575.), respecting the earthenware pipes, &c., used at Bickley, I have to state that the pipes made use of here are not watertight, nor do I suppose it possible by Roman cement, or any other means, to render earthenware pipes so entirely tight as to prevent any exudation of water from them.

The reservoir I consider very requisite, as by replenishing it with cold water instead of the boiler, it prevents the heat of the water in the latter from being checked, and consequently precludes any variation in the temperature of the house; a point, I imagine, of paramount importance. — *T. Wells. Bickly Gardens, Jan. 26. 1828.*

Disease of the Anemone, in Answer to A. B. — Sir, From the account which your correspondent, A. B. of Warwick, has given in the last Number of the Gardener's Magazine, p. 382., of a disease which affected the *Anemone coronaria* in his garden last year, I am inclined to think it must have been occasioned by a species of *Æcidium*, a small parasitical fungus, which I have observed for these five or six years past to attack the leaves of that species of anemone in the Oxford botanic garden. The first appearance of this fungus is that of lightish coloured spots on the under surface of the leaves, these spots soon become small tuberculate membranaceous bodies, or peridia, which protrude themselves through the epidermis of the leaf; they are at first closed, but afterwards open at the apex into four or five, and sometimes more, broad, reflected segments; by this

opening the sporidia, or minute bodies which contain the spórulæ, or seeds, make their escape.

This curious little parasite is generally very regularly dispersed over the inferior surface of the leaves, giving them a pale and sickly appearance, and for the most part rendering the plants attacked by it barren of flowers. I do not find that it has been noticed in any work on British plants, but it is described by M. De Candolle in the *Encyclopédie Botanique*, vol. viii. p. 255., and in the *Flore Française*, vol. vi. p. 90., under the name of *Æcidium quadrifidum*. Professor Link has also described it in his continuation of Willdenow's *Species Plantarum*, vol. vi. part ii. p. 65., by the name of *Cœoma quadrifidum*.

The common wood anemone, *Anemone nemorosa*, in the neighbourhood of Oxford, is often attacked by the *Æcidium leucospèrmum* of De Candolle, *Æ. anemones* of Persoon and Relhan. This differs from *Æ. quadrifidum* in being smaller, of a whiter colour, and in the apex opening into a greater number of lobes; it is scattered very regularly over the under side of the leaves, and such leaves as are affected by it may be distinguished, even at a considerable distance, by their growing much higher than those which are free from its attacks. I have sometimes found it on the involucre and corolla, as well as on the leaves, but it is very seldom that plants which are affected by it produce flowers. A history and description of this epiphyllous fungus, by Dr. Pulteney, may be seen in the second volume of the *Transactions of the Linnean Society of London*, p. 505—512.

Another parasite, equally common on the wood anemone here, is the *Puccinia anemones* of Persoon, *Æcidium fuscum* of Sibthorp. This, also, grows on the under side of the leaves, giving them somewhat the appearance of a species of fern in fructification; and, as such, a leaf of the anemone, with the *Puccinia* upon it, was figured by Dillenius in the third edition of Ray's *Synopsis*, t. 5. f. 1. It is there, at page 124., said to have been gathered by the Conjuror of Chalgrave, whence it has been called the Conjuror of Chalgrave's Fern. Some botanists appear to have considered this and the *Æcidium leucospèrmum* as the same, but they are very distinct, and may be readily distinguished from each other, even by the naked eye, the *Æcidium* being white, and furnished with a peridium; the *Puccinia* of a reddish brown colour, and without a true peridium, what sometimes appears to be such being only the epidermis of the leaf, which often forms a border round the base of each mass of sporidia.

Some authors have quoted the description in Ray's *Synopsis*, ed. 5. p. 124. t. 5. f. 1., as a synonym to *Æcidium leucospèrmum*, but that it belongs to the present species of *Puccinia*, I have been able to ascertain from an inspection of the original specimen, which is still preserved in Bobart's *Herbarium*. Dr. Hill, in his *British Herbal*, p. 12., has blamed Dillenius for following Bobart in considering this specimen as a species of fern, but the Doctor himself was certainly under a greater mistake than either of those distinguished botanists, when he described the round dots, as he called them, on the leaves of the anemone, as the eggs of an insect.

I have sent with this specimens of each of the fungi mentioned above for your inspection, accompanied by all the synonyms I have been able to collect, that I believe to belong to each of them, and I trust they will be found to be correct. I am, Sir, &c. — *William Baxter. Botanic Garden, Oxford, January 15. 1828.*

We shall be happy to hear frequently from Mr. Baxter. The specimens of anemone leaves, with fungi on them, which he has sent, are left with the publishers, and addressed to A. B. of Warwick, who will be so good as send for them, and we hope he will favour us with his opinion in respect

to the conjectures of so very intelligent a cryptogamic botanist as Mr. Baxter. — *Cond.*

Protecting the Blossoms of Peach Trees by Fern. — Amateur of Berkhamstead's query, as to the proper mode of using fern for protecting fig trees, may be considered as answered by the following communication: — "Just before the buds begin to expand, I collect a quantity of the *Aspidium aculeatum*, *Smith Fl. Brit.*; the stalk of the frond I introduce into a shred, and the point of it is brought to the point of the shoot; it is there wound once or twice round the nail near the point of the shoot, taking care to reserve an inch or two of the point of the frond to be turned in between the point of the shoot and the wall, which is a sufficient fastening, if properly done. A tree, when covered in this manner, has at a small distance the appearance of being in full leaf. As soon as the fruit is set, the fern is taken off, to prevent injury to the young foliage by confining it. This is a neat, light, and effectual covering, which I have practised these last ten years." — *Wm. Hurst. Hitcham Gardens, Nov. 23. 1826.*

Cutting over young Forest Trees. (p. 119.) — In reply to Mr. Thonville, who wishes to know about the proper season for cutting over young trees that have become stunted in growth. During these four years past I have planted a good deal, and the greater part on chalk subsoil, and I have been under the necessity of cutting over a part of the young trees, partly from being eaten with hares, and partly from not having grown well. I have cut ash, beech, elm, sycamore, some the first year after planting, and some the second; those cut the second year after planting made the strongest shoots. I have cut the first and second week of April, although I think that rather too late for elm and sycamore. I have cut young oak trees over about the end of April, and have found them do well. Although I have cut beech over, I have scarcely got a good shoot from their stools. Ash, elm, sycamore, oak, and Spanish chestnut, I have found do well after cutting over. In performing the operation, my men use a cleft stick in the left hand to hold the tree off them in the operation of cutting: putting the stick close to the surface of the ground, and the tree coming into the cleft, the person with his right hand cuts the tree in a slanting direction, about half an in. above ground; the left hand pushing gently at the time of cutting, makes it cut clean, without being in any way split or fractured. However, I would advise that trees should not be cut over until the second year after planting; for I have seen some trees that appeared sickly during the first year after planting, that have taken hold and grown away afterwards, but such were generally in good soil. I have even a proof at this time of trees getting away well the third year, although they were a little stunted the first two years. I find cutting over quick wood plants, the year after planting, an excellent method for making them push strong and bushy. — *Quercus, Oct. 1827.*

Primula sinensis. — A Constant Reader wishes to know how the *Primula sinensis* may be increased. I have raised this year above 60 plants from seed. I recommend the plants from which seeds are to be saved, to be placed on a shelf in the green-house, and as soon as ripe the seeds should be sown, by which means you will have well established plants before winter. Sow the seeds in a shallow box, and transplant them as they become too thick. Having plenty of young plants, I have just put six into the open ground to try if they will stand the winter, placing little glasses over them at night. I have had six old plants out for about three months, which have done well; but, being a second bloom, the flowers are not so large; indeed they are the plants from which the young ones have been raised, and were turned out after the seed was gathered. — *Z. Nov. 3. 1827.*

Forming a new Garden. (In reply to *W. M.*, Vol. II. p. 254.)—I will endeavour to give what information I can from experience in a similar case; but first I must warn *W. M.* of the comparatively immense expense attending the forming and tilling a spot of earth such as he has named.

About four years ago I first began to improve a small spot of earth, partly composed of the strongest clay I ever saw; it cut out just like new cheese; the extent of the spot operated upon was 128 ft. by 15 ft. I first digged into the surface six large loads of small chalk rubbish from the limekiln, about the same quantity of sifted coal ashes, and a good dressing of dung; it was frequently digged and turned for the purpose of breaking the clods and rendering it friable; and being compelled to repeat the digging frequently, I was obliged to sacrifice many crops by getting them off the ground before they were properly matured. In the beginning of last April, I could not begin before, on account of the wetness of the earth (it was not *soil* yet), I trenched it 2½ ft. deep, took out the bottom, and turned down the top improved soil; digged in about four loads of screened brick rubbish, and old mortar from an old building, about two large cart loads of screened coal ashes, and a good dressing of dung; and it is not at present much more than half tilled. So much for the indispensable trouble, labour, and expense of improving a spot of ground only measuring 1920 ft. superficial, and containing only 4800 ft. cubic measure.

I am satisfied that *W. M.* cannot proceed in any other way with equal advantage, if the earth is of the strong nature he represents it to be. If he makes patchwork of it, by doing a bit at a time, it will never be done, or rendered into a good friable soil while he lives. I must caution *W. M.* not to use any road sand, I mean the scrapings of country roads; for although this is, under some circumstances, sufficiently friable, yet nothing binds harder in a moist situation when pressed by the feet, and this is unavoidable in performing the various operations of garden culture. From the foregoing facts and observations it may be learned, that no man can expect to do more than barely make a living upon a farm that is on a strong clayey soil, as one of only a moderate extent would swallow up a large fortune in an attempt to change the surface of it, if it were only to the depth of one foot. I herewith send you a sample of the earth in its improved state. [Red clay, as hard as sand stone.]—*W. Green, jun. Stepney.*

A large brown Grub.—Could you give us any information how to destroy the large brown grub, that is so destructive in the summer to the potatoes and other vegetables? We suffered severely by it last winter, and I see there are numbers of them still alive, now we are digging the ground. I tried salt, lime, soot, tobacco liquor, &c., last summer, with no effect.—*Walter Lee. Bristol, Feb. 1826.*

Destroying Insects by Toads.—Many gardeners constantly put a toad into their cucumber frames, merely giving him a pan of water, and they find that he clears their frames of slugs and millepedes, or wood lice. It has always been my opinion that toads live on slugs, as they never move out till the evening, when these creatures also are on the move. Can any of your correspondents inform me if this really is the case, to their certain knowledge?—*Rusticus in Urbe. January.*

Wire-worms.—I am teased to death with the wire-worm in my garden, which seems to revel on the *Irídeæ*, pinks, lobelias, and plants of that character. I have tried lime, sulphur, salt, potash, soot, all which kill them, it is true, but the quantity required would prove a worse remedy than the disease. With a coat of mail like Achilles's, this grub resists every ordinary application, and effects his purposes in security. Do you know of any remedy? I have seen two or three queries in the Magazine, but no

reply. My subsoil is a clay, which I fear is an unsurmountable evil. — *A. B. B. Caermarthen.* — We know of no remedy. Burying slices of turnip, potato, apple, or other supposed tempting bait, has been recommended, and taking up the bait every day or two, and picking off the worms till the ground was cleared. A moderate quantity of bait, it is supposed, might clear a whole garden or field. We wish much that some of our readers would try the experiment, and send us the result. They will find farther details in *Kirby and Spence's Entomology*, a work which we have already recommended every master who wishes to keep down insects to procure, and lend to his gardener. — *Cond.*

Urticæ. — I wish some one would be so kind as to inform me what resemblance there is between the *Ficus carica* and the nettle, as I find the common fig is classed under *Urticæ*, I am strongly inclined to suspect that this new system will never stand alone, but will always be coupled with the Linnean. — *W. G. Stepany, Aug. 1827.*

Powder of Horsechestnuts. (p. 552.) — How is it made? — *Superficial.* — By drying and grinding, we suppose. — *Cond.*

Woodpeckers, as Destroyers of Insects. — Would it be at all worth a line in your Magazine, to propose that the preservers of the Parks should enclose in nets a few of the most secluded spots in the Parks, and at Kensington Gardens, and, as the season approaches, employ persons in the country to catch pairs of woodpeckers, and other birds of similar habits, and shut them in these enclosures; and especially when the young ones are first hatched, and can be brought with the mother, and be confined while she is at liberty to range and provide for them? Might not all except the young at that season have their liberty, and would not parental care accustom the birds to the neighbourhood of their enemy man, especially if the keepers were numerous, and were to ward off the annoyance of boys, while the birds indulged in the superabundance and luxury which the Parks, according to all accounts, must afford.

The Germans destroyed these birds, and the evil of the insects increased, and they then ceased to kill even that portion which they had previously been used to destroy, and the evil was gradually and effectually removed; so said my informant in Saxony twenty-six years ago. — *O. T. April, 1827.*

Gigantic Pine. — I have cast up all the rubbish, chippings of stone, &c., into a mound on the outside of the wall of a very ancient camp, which bounds my place of residence, and I wish much to plant some curious gigantic pine on it as a landmark; can you help me by stating the sort that you think will answer, and where I shall be likely to find it? — *J. B. Kent, Feb. 7. 1827.*

ART. XIII. Obituary.

DIED, at Hull, on the 17th of December last, William Donn, C.M.H.S., Curator of the Botanic Garden of that place, which situation he held since its establishment sixteen years ago, and discharged the duties thereof to the entire satisfaction of the subscribers. It is but justice to the memory of Mr. Donn, to say that his knowledge of plants, and their mode of cultivation, was equal to that of most men of his day. His experience in horticulture commenced in Scotland, where he was born in Fifeshire, in 1787. He lived some years at the late Dr. Swainson's, of Twickenham, and afterwards at Sion House, under the late Mr. Hoy: thence he went to Hull. Mr. Donn was the nephew of the late Mr. Donn of Cambridge. — *B. Jan. 1828.*

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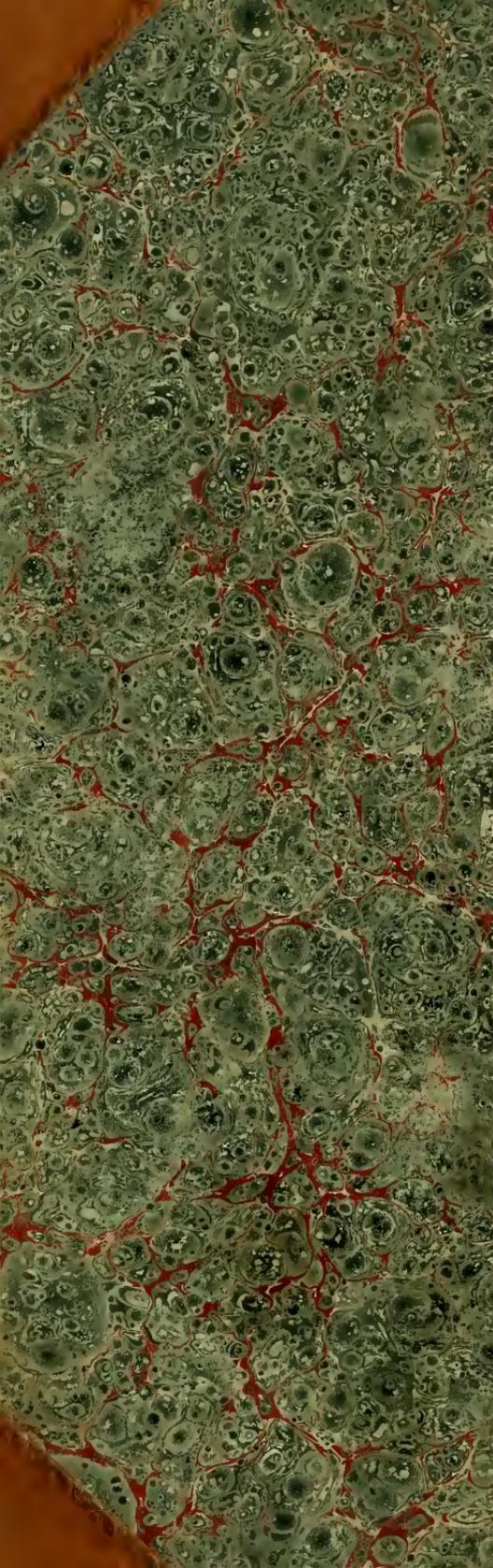
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February. — Inarch Fruit Trees, 68; force Cherries, 64.
March. — Exclude air from fruit room, 10; begin forcing Grapes for a late crop, 43; inarch fruit trees, 68; force Cherries, 64; sow Tobacco on a slight hot-bed, 85; pot *Gloxinia maculata*, 141; graft Peach and Nectarine trees, 149; sow Orache, 178; pot or sow Dahlias, 180; sow Melons, intended to be fruited in the open borders, 182; shift Pine suckers, 183; scrape off the old scabrous bark of trees, 309; sow seeds of *Ranunculus*, 310; sow seeds of *Dahlia*, 239.
April. — Sow Cardoons, 47; graft Camellias, 56; inarch fruit trees, 63; graft ditto, 63; sow seeds of *Amaryllis vittata* in boxes, 301; prick out Dahlias into a nursery bed, 439.
May. — Fruit, such as Apples in fruit room, not to be handled after this time, till used, 10; prepare to lay Vines, 24; graft Orange trees, 26; graft Fruit trees, 64; transplant Tobacco, 85; remove young fruit-bearing shoots of Raspberries, 174; ridge out Melons, 182; select for potting the best suckers of *Chrysanthemum indicum*, 291; plant out seedling Dahlias, 439.
June. — Bud Fruit trees, 64; pot Pine suckers, 183.
July. — Bud Fruit trees, 64; cover small Fruits with bunting, 176; shift Pine suckers, 183.
August. — Bud Peach and Nectarine trees, 149; prepare hot-beds for Kidneybeans, 339.
September. — Force grapes for a spring crop, 44; graft Camellias, 56; remove the young plants of *Chrysanthemum indicum* into the house, 291; graft *Pæonia moultan* cuttings from the tubers of *P. officinalis*, 293; pot early Cauliflower plants, 302; prepare old hot-beds for winter lettuce, 388.
October. — Blanch Cardoon, 47; graft Camellias, 56; cover Strawberry beds with mould from the alleys, 173; shift Pine suckers, 183; turn out seedling plants of *Petunia nycaginiflora* on warm borders, 297.
November. — Prune apple trees on walls, 1; sow Carrots, Radishes, small Salading, on old or new hot-beds, 390.
December. — Force Cherries, 64; fill Ice-houses 138.

END OF THE THIRD VOLUME.

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