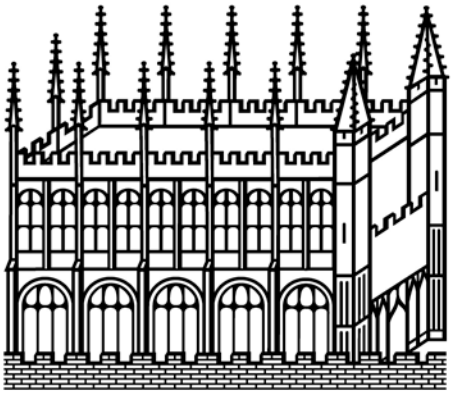

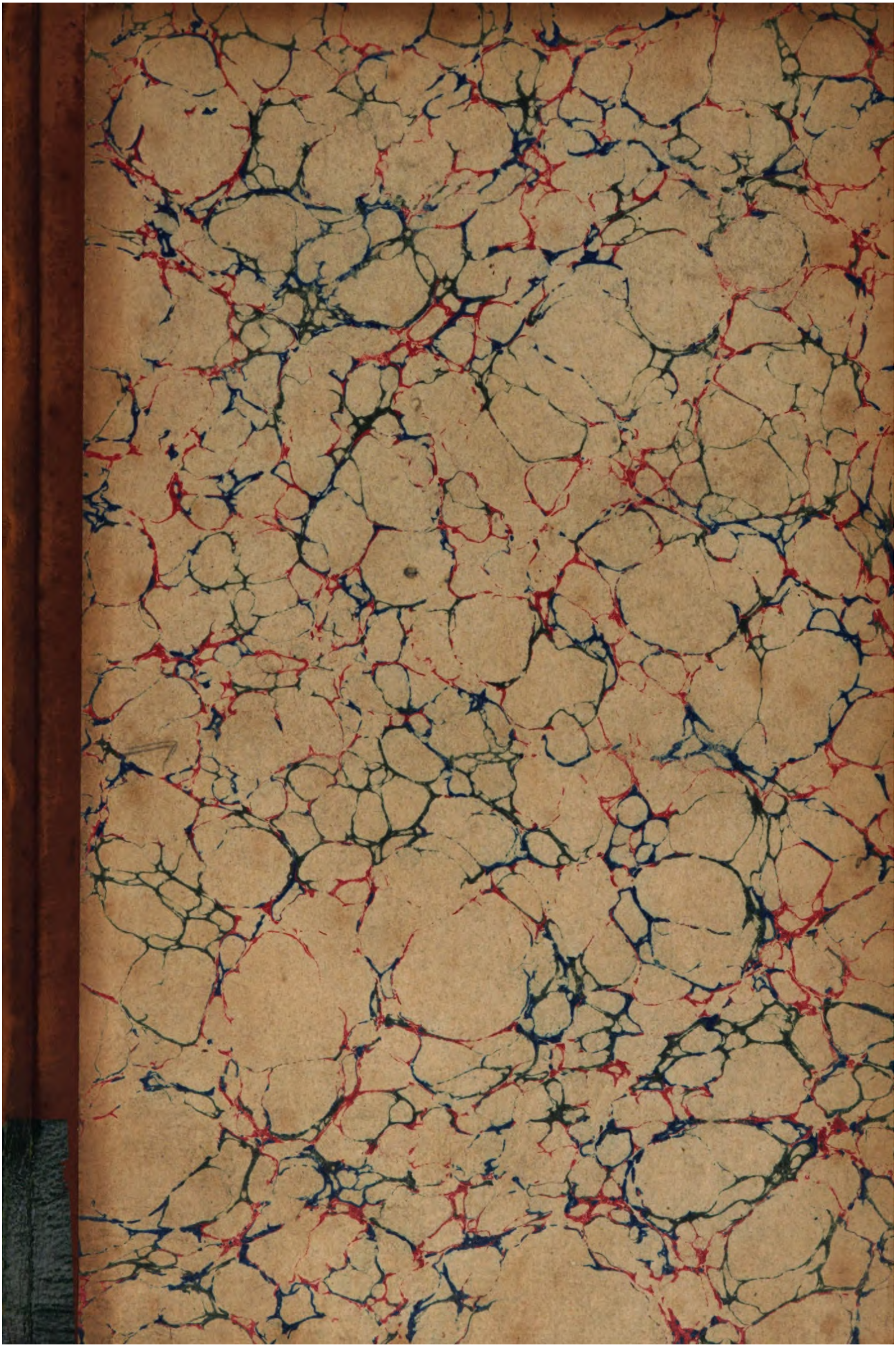

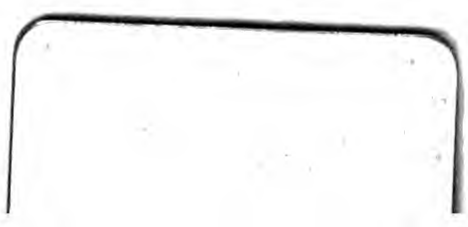

THE

HAND-BOOK

OF

VILLA GARDENING:

IN

A SERIES OF LETTERS TO A FRIEND.

"A garden is the purest of human pleasures: it is the greatest refreshment to the spirit of man."—Lord Bacon.

BY WILLIAM PAUL,

AUTHOR OF THE "ROSE GARDEN," &c.

PIPER, STEPHENSON, AND SPENCE,

PATERNOSTER ROW.

1855.

PREFACE.

THE following Letters, originally written to a friend residing in the vicinity of a manufacturing town, have been revised and published with the view of filling a blank in Garden Literature, caused as much by the rapid advancement of gardening as an art, as by the social changes of time and fashion.

A few years since, gardening was the recreation of the few—the opulent, the scholar, the man of leisure. Reared on a botanical basis, it was scientific rather than popular; and collections of plants with botanical names was the chief aim of the cultivator.

In recent times, the art has undergone an entire change, and what was of old the pursuit of the few, has, in varied forms, become the recreation and delight of the many. Nothing can be more favourable to the progress of a science or an art than extended patronage. Encouraged by this, the Florist has laboured ardently among the botanical and hybridized species, till he has raised up those brilliant and imposing forms which constitute a new era in English gardening. And happily these revolutions have been accomplished in the most peaceful and quiet way. There have been no convulsions in the kingdom of Flora.

The class who followed gardening in days of yore are its patrons still. The scholar finds health and relaxation in the study and culture of his favourite natural groups, which his learning surrounds with a host of classic associations. The highest in the land delight as much as ever in their parks and pleasure-grounds; while a more numerous class, though with less extent of territory, and often less leisure, find the same delight in the "Villa Garden," with its choice collections of trees and flowers.

Since London, and the large and wealthy towns in England, have been brought in close contact with the country by means of the iron-way, villas innumerable have sprung up on every side of them. Pleasantly and healthfully situated, tastefully built, and elegantly furnished, they are models of comfort and luxurious ease. But one of the chief appendages, the Garden, how often do we find this, not omitted, but neglected and mismanaged? It is rare indeed, in the country, that a house of any pretensions is without a garden. Modern requirements pronounce it as necessary to comfort as the drawing-room or the library. But while there are few who do not enjoy this healthful and delightful recreation, there are many who, from various causes, have not become familiar with its practices, and hence we often hear of losses and disappointments which should not and need not be. My "Bedding plants have done very badly this season," says one;" "I cannot understand it," says another, "but my trees and shrubs do not look half so thrifty as my neighbour's, although

growing in precisely the same atmosphere and soil." And then, if by chance you see the plants, or hear more of their history, you will discover that their owner's discomfiture arises from his system of *mis*management.

The Author has often been requested by the proprietors of suburban villas to write a book embracing the rationale of Villa Gardening, (sufficiently brief) that the reader might be saved the trouble of wading through a mass of details for the sake of arriving at a few simple rules of practice. It has been his sincere and earnest desire to execute this somewhat difficult task by the publication of the following Letters. How far he may have succeeded he must leave others to determine.

NURSERIES, CHESHUNT, HERTS,
March, 1855.

CONTENTS.

HAND-BOOK

OF

VILLA GARDENING.

LETTER I.

Edgar—Before you fight the battle, ope this letter.

King Lear.

THE receipt of your letter, wherein you inform me that you have decided on GARDENING as a source of recreation, affords me much pleasure. It is my firm conviction, founded on observation, that an active mind requires something more than family and business matters to complete the sum of secular occupation; and a "hobby," *rightly pursued*, rather than interfering with the great duties of life, intensifies the powers, and leads to a greater and more complete success. I am not, however, so enamoured of my own profession, as to think that gardening is the right "hobby" for every one. A more ardent nature might prefer shooting, hunting, or some one of our English sports, whose chief characteristics are muscular exertion and strong excitement; while a less active temperament would find a suitable "hobby" in the study of science or philosophy, in poetry or music. But I think it will be generally admitted that gardening possesses these advantages over the former, that it is accessible to every

one, is comparatively inexpensive, *and may be pursued in our own way;* while the latter, however accessible and delightful in themselves, do not afford exactly the relief required by an occupation engaging the mind rather than the body. This much may be said of gardening—it combines physical exertion with intellectual recreation, in so charming a way, that it acts beneficially on both mind and body; and the great LORD BACON uttered but one of his remarkable truisms, when he said, "*it is the greatest refreshment to the spirit of man.*"

But I must not pursue these reflections further, and therefore turn to consider the two great difficulties which appear to lie in your path; namely, "your proximity to a large town," and what you are pleased to term "your ignorance of gardening."

It is difficult to say how near to a town a garden may be successfully cultivated. Where towns are spacious, airy, and not of great population, many plants will thrive in their very midst; while, on the other hand, a closely-built town, smoky and densely populated, will not allow of varied and successful gardening within a mile or so of its confines: of course, there are intermediate cases. You have adopted an excellent plan in resolving to get as far from the smoke as your town duties will allow, and then *to cultivate only such plants as will flourish in the locality. Adhere tenaciously to this last resolution.* Do not attempt too much at first, and every thing that you do, *do well.* Gardening, to be satisfactory, should at all times be done well; and the disadvantages consequent on the proximity to a large town may be nearly counterbalanced by a close attention to rules of culture, which, under more favourable circumstances, may be unimportant or superfluous. The second point you mention does not cause me a moment's

anxiety, as a willing mind quickly gathers knowledge. You will, of course, require a gardener, either occasionally or constantly. Slight difficulties will accrue, over which you will presently obtain the mastery; and the daily ovations of fragrant and beautiful flowers, which the earth triumphantly brings forth in honour of your toil, will pleasantly remind you of the past, and stimulate you to future exertions.

Permit me to say here, that a knowledge of gardening must be gathered from practice and observation, rather than from books. Works of reference are, however, of undoubted value. Much may be learned, and learned pleasantly, in this way. "Paxton's Botanical Dictionary," "Mackintosh's Book of the Garden," or "Loudon's Encyclopædia of Gardening," will settle many doubts and queries that may from time to time cross your mind, and open many a page that otherwise would remain shut. Periodicals, such as the "Gardeners' Chronicle," the "Cottage Gardener," and "The Florist," are also useful as chronicles of gardening. Your future may require an addition to these. For instance, should any particular flower—as the rose, the dahlia, or the pelargonium—so win your esteem as to lead to its *special cultivation*, then the best author on that flower should be read and mastered. It will be my aim, in the few letters that I may from time to time address to you, merely to put you on the right track. More than this, if attained by greater effort on my part, would call up corresponding labour on yours, for which I am disposed to think you would hardly thank me. Assuring you that I shall be only too happy, as my leisure may allow, to correspond further on this subject,

I remain, &c.

LETTER II.

"The fertility of a soil is much influenced by its physical properties, such as its porosity, colour, attraction for moisture, or state of disintegration. But, independently of these conditions, the fertility depends on the chemical constituents of which the soil is composed."—LIEBIG.

YOUR question—"What should first be done with a garden that has long been neglected, and is altogether out of order," cannot, I fear, be answered in a few words. Were I called upon to visit a garden, new or old, with the view of effecting improvements, the first question I should propose to myself would be—*What is the nature, condition, and capabilities of the soil?* If wet, it should be drained; if poor or exhausted, renovated by deep trenching, and bringing new earth to the surface, and mixing with it appropriate fertilizers. Draining, though not always necessary, is frequently of the highest importance. A wet soil is cold, and partially closed to the genial and fertilizing influences of the sun and air. Many plants which defy a town atmosphere, dwindle and become unhealthy in an ill-drained soil, and even the hardiest suffer from it. Few gardens are without an outlet for water, either to some stream, ditch, or sewer; and if there is not a natural fall in the ground, the water must be got rid of by gradually deepening the drains towards the point of effluence.* Draining being accomplished, we turn to consider the

* The drains should be near or far apart, according to the nature of the ground: the more retentive of moisture, the closer they should be laid, and in few cases *less* than two feet beneath the surface. Tiles are preferable to pipes, and they may be used double, or with a sole: over these two or three inches of stones, coarse gravel, or rubble of any kind, may be strewed, with a final layer of furze, heath, or evergreen boughs, prior to filling in the earth.

garden generally, which, if "long neglected," will probably present a very sorry aspect. The beds, borders, and walks, overgrown with weeds; the lawn bare in places, in others moss-grown, or filled with coarse grasses; the trees of various descriptions barren and unsightly from age or want of attention;—these are the usual consequences arising from long neglect. Sometimes the desired improvements may be effected by weeding and digging the borders, sowing the lawn, and gravelling the walks, felling some trees, and pruning others. It often, however, is less expensive in the end, and far more satisfactory, to re-form the whole. Should this course be decided on, first mark out where trees, beds, borders, and lawn are to be, in order that you may have a distinct view of the finished whole before the mind, prior to commencing any part. This will probably save you some labour in doing and undoing, and prevent a patched appearance in the end, although it need not hinder you from seizing and carrying out any improvements arising in the mind as the work proceeds.

I now turn to consider the soil, its improvement or renovation, in order that it may become as fertile as possible. I advocate strongly deep trenching, and should trench two-spit deep every part accessible without injuring the roots of trees destined to remain permanently; and should not hesitate to remove a few plants or young trees in order to accomplish this. Trenching affords a good opportunity for ascertaining the nature of the soil, which the practised hand and eye will be able to do with sufficient accuracy for general purposes, by gathering and rubbing it in the hand. It not unfrequently happens that Villa Gardens, as well as others, possess great inequalities of soil, both in regard to their physical and chemical

properties. In the same garden may at times be found clayey loam, peat, and ordinary soil. In such cases means should be taken by the operator to equalise as much as possible these heterogeneous materials, making them qualify and assist each other: this, of course, must be done on general principles, as explained hereafter As is well known, some soils contain within themselves all the elementary substances necessary for the growth of plants, but are rendered sterile by some physical defect—the want or excess of porosity for example. The cabinet is richly stored within, but before we can handle and use its treasures, we must possess the key to unlock it. Other soils are rich in organic matters, while deficient in the inorganic; and the reverse of this is still oftener the case. Now, when it is understood that the absence of either of these constituent parts will "impede growth," it will be evident how essential is the presence of both. In regard to garden culture, the value of the inorganic constituents of soils is too often under-estimated or overlooked; and, as a consequence, decaying animal and vegetable substances are applied where superabounding, while the materials really wanted—as sand, lime, magnesia, sulphuric acid, &c.—are never once thought of. With certain exceptions for ordinary loamy soils, there is perhaps no better fertilisers than partially decayed stable manure, and gypsum or bones, with sulphuric acid, termed superphosphates. For hot, dry, or porous soils, a compost of loam and cow-dung, with a small mixture of nitrate of soda, are excellent. Where the soil is too sandy or light, persons living in marl districts will do well to avail themselves of the fixing properties of the latter, and what is called slate marl is the best to work. Light soils should also be rendered deep, for a deep root in a fair medium will often

compensate in dry weather for a want of soundness in the staple of the soil. For close, heavy, or adhesive soils, any decaying animal or vegetable matter, flint, lime, peat, burnt earth, and charcoal, are all great improvers. In the neighbourhood of towns, however, so much material may be found highly qualified to improve both the physical and chemical properties of the soil, that persons thus situated should be on the look out for them, both to reclaim neglected soils, and to add occasionally to the compost yard. The fact is, town materials are too apt to be despised because abundant, and their application is often ill understood. Nightsoil is one of the richest and most valuable of manures, and an improver of nearly all soils. One most valuable material, especially for adhesive soils, is the debris from old buildings, such as broken bricks, lime rubbish, old plaster, and the like. For such soils, waste shavings of wood, &c., may be blended with the hot manure and sawdust put away in a shed to mix with soot and guano, for top dressing in spring and summer. Old tan is also very useful, in a dry and mellow state, especially to soils deficient in vegetable matter. When the soil is a stubborn clayey loam, resting on a subsoil more tenacious still, after draining, sand or loose soil, debris of imperishable materials, even cinder ashes, and especially charred rubbish, may be well mixed with the surface soil in the act of trenching: the latter process may be carried so far as to bring up a couple of inches of the subsoil to lie for a winter's fallow, subsoiling a spade's depth of the clayey subsoil, which consists in digging the bottom without bringing it to the surface, leaving it still in its native situation. Peaty soils become more fertile by the addition of clay or loam, with lime, cow-dung, and burnt earth. If the natural soil of a garden be peat, it will re-

quire little alteration for the growth of "American plants" (Rhododendrons, Kalmias, &c.;) and as these are the most beautiful of flowering evergreens, and quite appropriate for a Villa Garden, they should be planted extensively under such circumstances, adding, in some instances, a little sand. In no case can American plants be entirely dispensed with; and where the soil is not naturally suitable for them, it should be made so by removing it to the depth of eighteen inches, and replacing it with a proper material. It is not absolutely essential that natural peat be used, for if expensive to obtain, all vegetable matters which have attained that condition termed "humus" are eligible as part of a compost for these delightful evergreens. Thus leaf-soil, decayed weeds, old saw-dust, old tan, &c., are adapted to the purpose; and a soil composed of equal parts of sand or sandy turf, peat, or, in place of the latter, the black residue alluded to above, will grow them very well.

Much of the comfort and enjoyment in a garden depends on the state of the walks. Their formation may appear a simple matter, but it is one that requires attention. In wet and retentive soils the earth should be removed to the depth of a foot or so, and a foundation laid of broken bricks, rubble, or coarse gravel; over these, successive coats of finer gravel may be laid, keeping the centre of the walk slightly raised, and contriving a fall when possible, that the effects of a heavy shower may the more speedily pass away. It is very pleasant to be able to traverse the principal walks of a garden with comfort five minutes after a spring shower, and there is no reason why this should not be done, if they are properly contrived.

These are what may be called the preliminary steps towards renewing an effete garden, or furnishing a new one. Other questions now arise. "What is the aspect,

what the soil and climate, and what trees and plants are most suitable to them?" These satisfactorily determined, we commence planting; but that subject is too extensive to be entered on near the close of a letter; and I promise you to return to it as early as possible.

LETTER III.

"The rudest habitation, the most unpromising and scanty portion of land, in the hands of an Englishman of taste becomes a little paradise."

WASHINGTON IRVING.

YOU ask me to furnish you with my ideas of what a Villa Garden should be, and to this task I will at once apply myself. Two of the first things to consider are, aspect and soil; and, if a choice is at hand, I should examine and weigh well these very important matters, before fixing on a situation. I should avoid the north-east side of a large town, because the wind, except in special cases, prevailing from the opposite quarter in spring, the smoke would prove peculiarly noxious there at this early period of vegetable life. In very smoky localities, ground situated higher than the town is preferable to that which is lower, as trees are found to suffer less in such positions; and the most favourable soil for house and garden is perhaps a friable loam, of sufficient substance and depth that it may not become parched by the heat of summer, and the sub-soil so porous that the excess of rain in winter may readily pass away. As to the shape of the ground, I should not be very particular in that respect, so that the angles were neither many nor acute: an oblong or parallelogram, for example, admit of a very satisfactory arrangement. In regard to the style of the dwelling-house, I must confess my

preference for the individualism and fairy lightness of Gothic architecture; you probably will prefer the Grecian; and with some this would be a matter of indifference, provided the house was convenient, the rooms spacious and lofty, with an air of congruity, neatness, and finish pervading the whole.* If the house be near to a good road, the approach may be by a footway, laid solid or paved, that it may be dry at all times; if distant, a carriage drive may be desirable; and in either case there will probably be room on the road-front for a few trees, shrubs, and flowers, and perhaps a grass-plot also. This road-front garden may be more or less blinded from public view, according to taste: some, perhaps, would shut it quite up, others blind it only so much as to *show it to ad-*

* The style of gardening must of course be adapted to the house. The geometric is a style much approved for small gardens, and numberless pleasing examples are floating on the memory while I write. In some cases, however, the English, or irregular style, is preferable. A visit to one or two of the most reputed gardens in your neighbourhood will give you far clearer and more definite ideas than any thing I could pen or draw. The book of gardening is to be quickly read by every diligent observer, and a cultivated taste will usually save the learner from egregious errors. When visiting gardens, whatever offends should be noted, as well as what pleases, and the causes of these different emotions traced to their legitimate sources. You would hardly think, however, of planning or remodelling a garden without first seeking professional advice. By this course you would find great assistance in the working out of your own ideas, occasionally valuable hints, *and always a great saving in the cost of the work.* It is also worthy of remark, that the situation and style of the house should decide in a great measure the character of trees that surround it. The sombre and massive yew tree would, in many instances, be inappropriate as a leading tree, and in other cases the light aërial forms of the weeping birch, and the like, would be equally out of character. This, with many things of a like nature, is a matter of taste and judgment.

vantage. For my part, I would retain my principal garden private, that I might walk or work in it in dressing-gown and slippers, when such was my humour. But the garden entrance should not be so secluded: it should be open to the free gaze of the passer-by; and I would take care that every thing there was in taste and keeping, that it might instruct and refine, as well as gratify.* I have often admired the villas in the environs of Paris, springing up amidst a paradise of flowers—roses, geraniums, pæonies, and various gay and odorous plants—almost overwhelming you with their fragrance and beauty as you gaze on them through the garden-gate, or neatly-framed lattice.

Let us now pass to the principal garden. Extending along one front of the house, a good effect may be produced by a terrace walk, raised above the surrounding garden, gravelled, with a band of grass on either side, and a grassy slope to the ground below, which may be reached from one or two points by a flight of steps. On the bands of grass by the side of the walk, Irish yews, Irish junipers, or other formal trees may be planted.

It is often in good taste to have the side of a terrace-walk next the garden fenced off with an open and low wall of ornamental stone work, at the foot of which is a narrow border for the reception of flowering or bedding plants. This, of course, displaces the grass bands and

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* When passing the closely-fenced villas abounding in some districts, I often think of your favourite author, Dr. Arnold, of whom we are told, that, in his rural retreat in the Lake district, he used his influence to retain the wild flowers in their natural haunts by the way-side, that others might enjoy them as well as himself.—*Stanley's Life of Arnold.*

formal evergreens, and is a richer, but also more expensive, style of gardening.

In the neighbourhood of large towns, where ground is valuable, and the garden consequently small, the want of space is often compensated for by working up architecture and gardening together. In such cases the free use of verandahs, balconies, pedestals, terraces, fountains, sun-dials, figures, and vases, are not only allowable, but even desirable, provided they harmonize in style with the architecture of the mansion. Suitable flowering plants and evergreens placed in them, on them, and against them, combine to produce a most agreeable and imposing effect. It is often good to train climbing plants up the side of the house, and to place an occasional shrub or tree so near to it, as to form a connecting link between the house and garden; and if architectural ornaments be approved, vases filled with choice flowers may be placed on either side the steps.

In some cases terraces may be out of character with the surrounding scenery, or objected to on the ground of expense. Then a lawn may be formed on the same level as the house, gently undulating, dotted here and there with a single evergreen of rarity and beauty, and a *few* clumps or rustic baskets.* The latter should be filled with scarlet geraniums, verbenas, and the like, in summer, and dwarf evergreens in winter. In addition to the lawn, with

* I remember visiting a country-house, in front of which was a flower-garden formed on a lawn with great taste, and on the north side stood a group of lofty elms, the ground beneath completely covered with ivy, which occasionally rose and wreathed itself around the stems of the trees.

The effect was most imposing, and the ready access to their cool and refreshing shade must, in summer time, have proved particularly agreeable.

its clumps and trees, it is most desirable to have borders by the sides of walks, to contain roses, dahlias, hollyhocks, &c., with an admixture, or separate masses, of early flowering perennials, annuals, and bulbs, that the garden may not only be rendered as gay as possible in summer and autumn, but also interesting and cheerful in the first bursts of vernal sunshine.

I should hardly recommend the cultivation of vegetables in a Villa Garden, although, in particular cases, they cannot be dispensed with; but in these days of rapid transit they can usually be bought cheaper and better in the neighbourhood of almost every town. But if the garden be not too prescribed in extent, I should expect to find a space set apart for the culture of the most useful fruits. Apples, pears, cherries, plums, &c., may be produced in as great perfection here as anywhere, while the change from the beautiful to the useful would often prove both agreeable and refreshing.

Leaving the interior of the garden, which we will suppose principally occupied with flowers, we turn towards the boundary, the more natural position for trees. What we expect to obtain by their presence is, shelter, shade, and privacy.* All who value the products of the garden should, however, avoid hedging it entirely in with lofty trees: a free exposure to the south is most desirable. In forming a belt of trees for shelter, we should first plant at the

* Shelter is required against strong winds and smoke. If a garden stand south-west of a town, a belt on the town side will usually answer both ends. If, however, the situation be north, north-east, or north-west, a belt on either side may be desirable. It is generally considered that one part of a garden should be appropriated to retirement, and it is often necessary to plant blinds where we otherwise should not, to attain this end. I can say nothing further on this head, than that it is most unfortunate, if, after having to fence one side

boundary-line two rows deep of evergreens and deciduous trees alternately, introducing as great a variety as can be obtained from among kinds suited to the situation, and of different rates of growth, to avoid a regular sky outline. In front of these lines we should like to see masses of humbler growth planted *thickly*, so as to hide the fence, and irregularly, so that recesses are left on the garden-front of the belt. If the proprietor be fond of statuary, here again would seem a fitting opportunity for its introduction; and, whether vases or statues, they should be appropriate in character, good in quality, and few in number. On the face, or in a recess of the belt at some turn of a walk, an arbour may be placed to advantage. This is a real luxury in a garden, provided it be kept dry and clean; but too often these buildings are so temporary in character, that they do not respond to either of these requirements, and consequently excite disgust, rather than pleasure. If such a building be introduced, it should be substantially built, harmonizing in style with the house and garden. A circular room, boarded half round, the other half open to an interesting part of the garden, and the roof supported with pillars, forms a cool and agreeable retreat. This structure may be roofed with tiles or thatch, the interior covered with a suitable paper, and the floor boarded, or paved with ornamented tiles. In the place of paper, the interior may be covered with the bark of trees, cones of firs, shells, &c., according to the fancy of the proprietor. The exterior, if partly surrounded with ever-

against smoke, and another against boisterous winds, a third has to be closed for the sake of privacy. In such a strait, it should be the endeavour to leave loop-holes somewhere for sun and air; and the situation, together with the temperament of the proprietor, must determine whether wind, smoke, or publicity can be best borne with.

greens for the sake of shade and coolness, will yet allow of the introduction of flowers: roses, honeysuckles, jessamines, and other sweet-smelling climbing plants, may be planted against the side and front pillars.

Shade is unquestionably a luxury in a garden, and may also be found in the recesses of the belts under large trees. An arcade, formed with rustic poles, and covered with roses, honeysuckles, and various summer-blooming climbers of rapid growth, will afford an agreeable shady walk with little cost: the same object may be attained, though more slowly, by planting elm, lime, hornbeam, or similar trees, on each side of a walk, and bending them downwards, and keeping them tied over and clipped.

After proceeding thus far, it is quite possible that you may find certain odd nooks and corners, or spots unfavourable to general vegetation, still uncovered. Such a circumstance need create no difficulty. It offers a capital opportunity for the introduction of St. John's wort, periwinkles, Irish ivy, and the like plants, distinct in character, and always highly interesting.

We are still on the boundary-line of the garden, and what more should we be seeking there? A pleasant outlook over hill and dale, embracing wood, water, rock, &c., is almost too much to ask for in a Villa Garden. Ordinarily, land is too valuable, and the houses too close together, to admit of this. Where, however, such natural beauties exist, every available use should be made of them. Green fields—especially if the surface be undulated, diversified with trees, and enlivened with cattle, a river rushing over its pebbly bed, or slowly winding through the landscape; a time-honoured wood skirting the horizon, or the less fertile though more romantic prospect of a rocky territory; any one of these features existing in the surrounding

country, should, if possible, be turned to account: a view of them from the garden will give scope and finish to it, forming, as it were, a frame to the picture.

One leading feature of the Villa Garden is glass, and no garden can be considered complete without it. A Conservatory adjoining the house, and accessible from the drawing-room, or by a short dry walk from the principal entrance, and a Greenhouse, or range of pits, with which to stock the Conservatory, make this department tolerably complete. On these structures, as well as on trees, flowers, and fruits, we shall have something more to say by and by.

Before, however, concluding this letter, let me point to one very necessary appurtenance of a Villa Garden possessing plant houses of any kind; I mean, a compost yard. I do not wish to alarm you with the idea of a toilsome and expensive affair; it is a very simple matter, and, rightly understood, will tend ultimately to economy. No gardening is more expensive than bad gardening, and the neglect of composts has ever been one of the characteristics of the negligent or bad gardener. A very small corner will suffice for a Villa Garden, and it should be thought of when those necessary appendages called sheds are under consideration, for a proper compost yard demands a potting-shed also. I need scarcely say that the position of a potting-shed will be ruled in the main by its necessary connection with the plant-house or houses; of course as near to them as can be well managed. In close connection, then, with this little shed should be a small plot of land, enclosed from trespass, and it should be a rather elevated site, or so managed as neither to receive superflous moisture, nor to retain it. On one side of the interior of the potting-shed there should be a bench three feet high, and at one end provision for garden pots, &c.

Indeed with a very little scheming, this may be made to serve a double purpose—potting-shed and tool-house.

In the compost yard must be kept a small supply of peat or heath soil, turfy loam, and some old vegetable soil: silver sand and charcoal grit may have a bin in the shed.

I may just add, that as the compost-yard will at all times have to receive materials from the stable yard, it is essential that it be so placed as to be capable of speedy access therefrom; and, as a closing piece of advice, it should be concealed by planting, and the exterior made to subserve the general outline of some portion of the grounds.

LETTER IV.

"To discern a beautiful thing, to be penetrated with its beauty, to make it evident, and make others participate in our sentiment, is an exquisite joy, a generous task."

Lectures on the Beautiful, by M. V. Cousin.

In the present letter I shall confine my remarks to the selection, introduction, and planting of trees, evergreens, and flowering shrubs. This is a most important branch of gardening, for on it depends mainly the *general effect* of a garden. It is a matter of surprise to me that so many of our lawns and gardens round London, and elsewhere, should be *suffered* to *remain* crowded with the lumpish and unmeaning trees and shrubs planted half a century ago. I do not wish to carp or cavil at the doings of our forefathers: the specimens of beautiful trees often met with in old gardens, obtained then at great cost, shew their thoughtfulness for the future. They could not, in the olden times, obtain the richness and variety of scenery displayed in modern gardening, because the objects composing it are chiefly the

result of recent discoveries. The surprise is, that we should not now avail ourselves of these introductions for surrounding our dwellings with objects more pleasing to the eye, more expressive, and more conformable to the requirements of domestic life. I can readily conceive that the associations wound up with many of these old shrubs and trees may, in certain instances, render them dearer than the most beautiful novelties. But I cannot help thinking that the ugliness here complained of is frequently borne with from a disinclination to disturb existing arrangements, and repeated, alas! too often, from the habit of copying from others, or because certain materials are readiest at hand.

In the choice and arrangement of trees and shrubs there is employment for any amount of professional knowledge and taste; and it is a pity that minds otherwise occupied should leave the adjustment of so important a matter to inefficient persons, or suffer themselves to be guided by taste and judgment inferior to their own.

While freely allowing that some of our old trees and shrubs are still unsurpassed, it does not admit of question that many of recent introduction are great improvements on the majority formerly cultivated. This remark, while true in general, has especial reference to that comprehensive and beautiful tribe spoken of collectively as Conifers. Many of these are found to thrive in proximity to large towns, and such are of great value on account of their rich and varying aspect: spring, summer, autumn, and winter, they are, at all seasons, different, but always beautiful. Who has not paused in admiration before individuals of the fir tribe (conifers) on a stormy day in autumn, and marked with delight their waving masses of glossy and impenetrable verdure? In winter, too, when

shrouded with Nature's mantle of congealed vapour, how beautiful to watch the sun's rays melting the frost into dew-drops, which, hanging from the points of the needle-shaped leaves, star the sunny side of the tree with gold, while the shady-side remains embossed with silver. Then there is that charming contrast in the dark and pale green produced by the annual growth of spring; and who would reject the agreeable and refreshing coolness of their shade in summer?

With all our fondness for Evergreens, the Conifers espepecially, we are not, however, prepared to recommend their *exclusive* use in planting a Villa Garden. This we should regard as a faulty extreme; for while advocating the superior claims of a perpetual verdure, we are fully alive to the beauty and interest of deciduous trees. The changing leaf of autumn is beautiful; and the falling leaf, if producing untidyness in a garden, may be borne with for a season. It is a phenomenon of nature, and without it we should be denied the variety and contrast in the admixture of the evergreen and leafless trees in winter, and the poetic freshness visible in the re-animation of vegetable life in spring.

The skilful blending of the evergreen and deciduous forms appears to me the perfection of art in the arrangement of ornamental trees, and the planter should avail himself of the handsomest forms of each that can be obtained.

With these preliminary remarks on trees in general, we turn to consider their arrangement with the view of obtaining the best effect in ornamental planting. Be it remarked, with botanical classification we have nothing to do; internal organization, or the affinities of plants, need not trouble us here: our practice will be drawn from studying their external aspects. And without entering too minutely into these, we may at once seize the leading

features, as, size, form, colour, &c., and strike a few salient points within the limits of which most of our trees and shrubs may fall.*

1. Size: *Large:* Example, trees which exceed 30 feet in height.
   Medium: Example, trees ordinarily ranging between 10 and 20 feet in height.
   Small: Example, shrubs and evergreens rarely exceeding 6 feet in height.
2. Form: *Columnar:* Example, *Irish yew, *common cypress, Lombardy poplar.
   Rigid: Example, *Araucaria imbricata.
   Free: Example, *Abies Douglassii, *common yew.
   Pendulous: Examples, *Abies deodara, weeping birch.
   Prostrate: Examples, *Cotoneaster, *carpet juniper, honeysuckles, *ivy, *Vincas.
3. Colour of Leaves: *Purple*: Examples, purple nut, purple beech.
   Dark green: Examples, *yew *green holly.
   Light green: Examples, *arborvitæ, lime-tree.
   Gold: Examples, *golden yew, *golden holly, variegated Spanish chestnut.
   Silver: Examples, abele poplar, *lavender cotton, some varieties of *Abies deodara.
4 Character of Leaves: *Linear*: needle and bodkin-shaped leaves, as the pines and firs.
   Simple: Composed of one piece only, as in the oak, elm, &c.
   Compound: Composed of several leaflets, as in the ash, walnut, &c.

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* In the following arrangement those marked thus * are evergreens.

When I commenced this letter I intended to follow the subject to its legitimate conclusion. But I find there is too much to say to allow me to do so at present. Having laid before you the leading points of character in the objects with which you will have to deal, permit me to recommend a careful study of them in nature, and I will return to the work in hand at an early period.

LETTER V.

"Princess," said I, "the gardens of Nero can have presented no scenes more beautiful than these. He who designed these avenues and groups of flowers and trees, these frequent statues and fountains, bowers and mimic temples, and made them bear to each other these perfect proportions and relations, had no less knowledge, methinks, of the true principles of taste, and of the very secrets of beauty, than the great Longinus himself."—*Letters from Palmyra.*

I HASTEN to continue the subject of my last letter. A point of importance when choosing trees and shrubs is to procure them from a source where they have been often transplanted from the very earliest stage of growth. This system of cultivation does not always present to the view the most vigorous and healthful-looking specimens. Trees frequently transplanted have sometimes a stunted appearance; but they had better look stunted in the nurseries, and become vigorous when transferred to your soil, than vigorous in the nurseries, and thin and meagre after their final transplantation.

Allow me to say here, that after placing your permanent trees in your beds or shrubberies, there will

remain spaces of bare ground, which, if suffered to lie uncovered, the whole will have an unfinished appearance. To obviate this disadvantage, fill up at once with cheap but handsome plants, such as firs, laurels, and mahonias, which may be gradually cut away as the choicer plants extend over the ground. This will add a mere trifle to the first cost of the work, and give you at once a finished picture.

The compressed sketch offered at the close of my last letter was made in order to shew you the richness and variety of materials among trees, and with such resources at command, it will surely be your own fault if your garden is chargeable with inelegance, sameness, or bareness. You have doubtless remarked, that in planting the beds of flower gardens it is not customary to plant the whole with red, blue, or white flowers, nor with plants of similar growth. The judiciousness of this plan is universally admitted, as relates to flowers, and why should not the same principle be acted on in planting trees? If such decided and striking contrasts of colours are not to be found among trees as flowers, that defect is in great measure made up by the large masses of colour, the greater distinction of forms, and the breadth of light and shade. It will be found, that, by choosing from the various divisions there shewn, and placing in juxta-position trees of different forms and colours, it is easy to produce a pleasing variety, as well as pictorial effect.

But let me strike a little deeper into this matter. As regards the first division—*Size*—I need say nothing, as your own judgment will be a sufficient guide as to whether a large, medium, or small tree, is most appropriate for a given place. In reference to *Form*, I would merely remark, that, in planting lawns, shrubberies, or belts, two

trees, similar in this respect, should not be placed side by side: let the columnar stand in combination with the free, the rigid with the pendulous, and so on. Of course there are exceptions to this, as where groups or masses of the same tree are required. The like principle holds good with regard to the characters of the leaves: we may find a harmony in contrast, a unity in variety, as well as in resemblance. Another source of distinction exists in the colours of the leaves, graduating as they do from purple through the different shades of green to gold and silver. Green should, in all cases, be the predominant colour, the silver, gold, and purple figuring sparingly; the two former in contrast with dark green, the latter with light. Perhaps it is not possible to give any precise rules for the working up of these materials, or rather, not possible to combine them to greatest advantage by following mere rules. This can only be accomplished after studying long and earnestly in the school of Nature, seeking an interpretation of her harmonies and beauties in living examples rather than in books. The banks of the Rhine, Switzerland, the Highlands of Scotland, the English lakes—not to mention more distant scenery—offer boundless fields for the cultivation of taste. But if taste exist, we can hardly look into nature without improving it. What can be more beautiful than the holly and whitethorn, so carelessly entwined in almost every glade of Epping Forest, on the outskirts of London? Here is a natural combination which may be copied, for it could scarcely be surpassed by any effort in the school of art. Not that we undervalue the latter: true art acknowledges nature for its model, and, in landscape gardening, beautiful illustrations of this fact may be almost daily met with.

The landscape scenery of the English lakes will be

found particularly suggestive to the tyro, because there art and nature are in many instances combined,—the finished scenery of the garden blends appropriately with the wild grandeur and sublimity of nature.

Although you may pronounce me somewhat discursive, I cannot help referring here to some scenery of this nature. It may have little to do *directly* with Villa Gardening, but it has an indirect bearing on the subject, which it seems undesirable to pass by. It is a beautiful ride from Greenloaning to Crieff, and from among the many interesting matters connected with this Highland town I would glance cursorily at Drummond Castle gardens. On entering the park which surrounds the castle you commence a gentle ascent, passing through an avenue of beech trees a mile and a quarter long, and which, but for a contiguous one of greater magnitude and beauty, would be considered remarkable. The castle stands on the summit of a rock, whose sides are coloured with patches of the usual cryptogamic plants. As the eye wanders over a most extensive prospect, there is no want felt of any element of picturesque beauty; around and beneath, water, wood, and rock abound. In the distance, on the one hand are the Grampians, their tops often shrouded with mist, and one of which bears on its side the town of Crieff; on the other hand, the garden in front of and below the castle is composed of several terraces, with flowers and clipped trees judiciously interspersed, and which, viewed from the court-yard above, present a most imposing effect. At the time I saw these gardens the relative quantity of varied foliage and flowers seemed to have been so happily combined as to leave nothing to be desired: the garden was as far from melancholy as from gaiety: there was solidity and grandeur without gloom, cheerfulness without frivolity.

Looking outwards, the flowers seemed to diminish, and the trees to increase in number and wildness. Towards the extremity of the garden, birch, fir, plane, and other forest trees, of various forms and tints, were arranged with consummate skill, and the outline so broken, that the eye passed smoothly forward from the garden below to the park and forest beyond, where youthful and aged trees were mingled in sublimest unity. Thus the most refined and cultivated scenes were blended with the wildest and grandest, without doing violence to the feelings. Here, art had been successfully employed amid the very strongholds of rude, uncultivated nature: it had harmonized and intensified, rather than transformed her sublimest characteristics, and thrown among them shades of refinement and beauty, which taste and genius, those high gifts of God to man, alone could execute.

The theory of planting evergreen trees for pictorial effect—a winter garden—has been skilfully and perseveringly wrought out at Elvaston Castle gardens, near Derby.

As before stated, I have no faith in the effect of a large garden composed of evergreen trees alone, and shall give you a brief description of that now introduced, and a free opinion of it.

Few, perhaps, would pronounce the gardens at Elvaston, AS A WHOLE, satisfactory. You stumble frequently on delicious strokes of art—the lake and rock-work, for example—and instantly acknowledge the superiority of the mind that planned and the hand that executed them. But there is a heaviness arising from the excessive quantity of the fir trees and their allies, and this, perhaps, is increased by the clipping, twisting, and tight-lacing, everywhere apparent, creating far too many dandies and eccentricities. Then the same objects and ideas recurring

so often, *when by repeated visits they become familiar*, the thing, as a whole, grows tiresome and vapid. Permit me to extend these observations. I will suppose a person of taste, and fond of gardening, to be first shown the garden on the south-front of the mansion, where the large golden yews and other formal trees, interspersed with bowers and statuary, combine to produce a most agreeable picture. By this I should expect the most apathetic or fastidious to be at once roused and delighted. But as he proceeds outwards to encounter similar trees, clipped hedges, and statuary, terrace succeeding terrace, novelty—the great source of his surprise and delight—vanishes. Now the numerous groups and lines of clipped, pinioned, and formal trees, rising spectre-like over and over again, produce a tightness and gloom upon the mind; the spirits lose their elasticity; like the wedding guest in the "Ancient Mariner," spell-bound he "cannot choose but hear," but dare scarcely raise his eyes lest he encounter something for which the mind is not altogether prepared.

It may be said, this is paying the highest possible compliment to the artist. Be it so. My aim is not to depreciate, but to give you my honest impressions; to bring prominently into view what appears to me worthy of imitation, and to prevent the reproduction of what is faulty and undesirable.

As we pass onward, we are at length arrested by the lake and rock-work, which may safely be pronounced a masterpiece of art. It may be the more striking and impressive, because seen after moving among so many objects similar to each other in appearance; but making due allowance for this, I do not remember ever to have encountered any thing of the kind at all comparable to it. The islands and opposite shores of the lake are beautiful. The varied

colours of the materials with which the rock-work is composed contrast admirably with the different shades of foliage, while the water and the water fowl impart life and spirit to all around.

While fully acknowledging the beauty of this scene, which, with good judgment, is usually the last shown, it does not always suffice to efface the impressions previously stamped upon the mind.

I have several times walked over the gardens at Elvaston, the last time immediately before visiting those at Alton Towers, a well-known mansion of the Earl of Shrewsbury. How refreshing the change! It was like passing from the cemetery of Père la Chaise to the Jardin des Tuilleries. And an after excursion through Nithsdale, a beautiful valley in Dumfries-shire, confirmed me in my dislike of a large garden formed of evergreen trees alone. Beautiful indeed is the scenery in which this valley of the Nith rejoices. Setting aside the varied undulations of the ground —the occasional sudden deviations of the road—the sparkling of the water as it hurries over its rocky bed,—setting aside these material elements of picturesque beauty, how agreeable and free from monotony were the road-side plantations and distant tree-clad hills! Well we remember the changing foliage of the deciduous trees, mingling with the more sober hues of the fir tribe, producing a most charming picture, combining lightness and elegance with solidity and grandeur. Certainly neither the evergreen nor the deciduous trees could have been withdrawn from this valley without lessening the beauty of the whole; and the questions naturally arose in my mind, "Would not the gardens at Elvaston have a more cheerful and buoyant aspect, were a goodly portion of these lighter forms distributed there? What a joyous freshness would the tender

green of the acacia, birch, &c., spread over the funereal character of Elvaston in spring! Would not the coolness of the summer scene be heightened by the presence of a few of the white-leaved trees; and the gloomy days of November be enlivened by the vermilion tints of the scarlet oak, the liquidamber, &c. ?"

What lover of nature can mark unmoved the brilliant and varied glow of these " children of the autumnal whirlwind "—

> " ——Those bright leaves whose decay,
> Red, yellow, or ethereally pale,
> Rival the pride of summer."

I am aware how slight has been this sketch, from the subject rising in magnitude on the mind while writing, and I have with difficulty restricted it to its present limits. Less I could not say. I know you have already visited Elvaston. Perhaps no other garden in England is attracting more attention at the present time, and surely none possesses so stupendous a collection of certain rare and beautiful hardy trees. As a garden, it stands out in bold relief from all others; it is a thing apart; it will perhaps never be copied; the authors would probably not wish it to be.

You will find it a capital plan, before forming or improving your own garden, to visit the most celebrated in your neighbourhood, and, if possible, those in different styles. A single visit will often convey more to an observing mind and correct taste, than can be gleaned from an octavo volume. And fortunately every district of happy England abounds in examples of gardening as an art.

Taste is not confined to any one spot or class: while we naturally expect a display of it in and around the mansions of the rich, we also rejoice to recognise it

among the habitations of the poor. I have wandered bewildered through the wondrous and fantastic mazes of Elvaston, and roamed in ecstasy among the rare and gigantic trees so gloriously scattered over the free wilds of Dropmore; and have paused before the cotter's door in admiration of a blue hepatica encircled with a ring of red daisies. Here were Nature's living rubies and amethysts brought together in beautiful contrast, and set off with a profusion of emerald green.

LETTER VI.

"This natural order* contains some of the most beautiful plants of which we have any knowledge."—"*The Vegetable Kingdom*," *Dr. Lindley*.

AMERICAN plants is a term which embraces a variety of flowering shrubs, mostly evergreen, which are found to thrive best in a peat or bog soil. The most popular examples are the rhododendron, the kalmia, the hardy azalea, and the hardy heath. Who that has any knowledge of gardening is not familiar with one or other of these plants? The rich dark foliage and splendid blossoms of the rhododendron, the chaste and delicate kalmia, the brilliant and varied colours of the azalea, have deservedly gained for them a prominent place in English gardens; and if there is one position where they are more valuable than elsewhere, it is in Villa Gardens, where, for want of space, it is always desirable to combine in one object as many separate points of beauty as possible. So desirable do I consider them—the rhododendron especially—for this

* Ericaceæ.

purpose, that I intend to devote this letter solely to their consideration and culture.

If we look into old works on gardening—aye, and many of the best modern ones—we shall find a peat soil, natural or artificial, considered essential to their successful cultivation; but some modern writers seem to have suddenly exploded this idea, by the discovery that they will grow in almost any soil. I would have you guard against this dogma. Believe it if you will, but do not practise it, lest disappointment should ensue. To me, the discovery is nothing more than an attempt to meet the practical requirements of the age, by a bold stroke of the pen; and it cannot be conceded in truth that American plants will flourish, except in a soil which, if not genuine peat, resembles it at least so far as to be loose, light, and porous.

If your garden is composed of only one sort of soil, you, I am sure, will not expect that all kinds of plants should thrive in it, unless, by labour and skill, you attain an approximation to those conditions under which they exist in nature. It would be as reasonable to expect every animal to subsist on the same diet, as every plant to flourish in the same soil.

Let us look at the rhododendron. It is found in a wild state, at various altitudes of the Himalaya mountains; it is found also in America, and other parts of the world; in almost all cases fixed on the margin of bogs, rivers, or lakes; some of the Himalayan species growing on the branches of trees, and drawing their sustenance principally from the abundant moisture of the atmosphere with which they are surrounded. Certainly a loose moist soil appears a necessary condition in their successful cultivation, and peat is of this nature. If your soil be peat, or this material be obtainable at small cost, you may grow American plants

in quantity; if peat is scarce or costly, grow fewer; but if grown at all (and they are almost indispensable), plant them in a soil in which they will not only live, but flourish.

In some districts, peat soil is scarcely accessible in quantity, while its component parts are readily obtainable in a separate state. Let us see, then, of what it is composed, with the view of manufacturing a suitable substitute.

Sand, the branches, leaves, and roots of plants, in a decayed state, make up nine-tenths of the substance called peat: the remaining tenth consists of various matters in small quantities, which enter into the composition of most soils. Thus, sand, with decayed turf, and any *thoroughly decomposed* vegetable matter, as stable manure, leaf mould, old tan, and the like, will form a soil at least mechanically similar to peat, and in such a soil American plants are found to thrive.

It should be borne in mind that American plants delight in shelter, shade, and moisture, and, when planting, these conditions should be secured as far as possible. By shade, I do not mean that overpowering gloom, caused by the proximity of large trees, which exclude both sun and air, and at once deluge the plants with their drip, and impoverish the soil by the excursions of their roots. Better none than this. But if shade can be secured by distant trees, especially from the afternoon sun, it will prove sufficiently advantageous to be worthy of attainment. In small gardens, American plants are usually introduced in a clump or clumps on the lawn, sometimes on the face of a shrubbery; and, where the soil is naturally suited for their growth, they will form a capital shrubbery of themselves. When necessary to introduce peat, the original soil should be first removed to the depth of eighteen inches in moist, and two and a-half feet in dry soils, and its place reoccupied by the

proper material. Where a plant is introduced here and there on the face of a shrubbery in an unfavourable soil, a large hole should be dug, the plant, when deposited in it, thoroughly surrounded with well-chopped peat pressed tolerably firm, and afterwards well soaked with water.

It is a bad plan with American, and all plants delighting in a moist soil, to raise the clumps above the surrounding surface, for by that method the rain passes away without nourishing the roots. It is, however, good practice, when filling beds with peat, to tread it firm, and leave it several days to settle down before planting; and if the peat is poor, a small portion of well-pulverised manure (cow-dung if attainable) should be worked in with it. Some writers, well worthy of attention, recommend the introduction of loose stones in peat beds. From the delicate hair-like roots of American plants, they are exposed to great injury from drought in soils not over-retentive of moisture; and in cases where stones have been introduced, the roots have been found working over their surface in a state of healthful luxuriance. Thus, stones would probably prove peculiarly beneficial in a dry, hot soil, for both coolness and moisture would be partially secured by their presence. In soils naturally dry, the water-pot should, however, be used freely throughout the growing and flowering season; and as the choice kinds of rhododendrons and azaleas are often grafted, it is necessary to look out and destroy any suckers that may sprout up from below, lest they should injure or destroy the better variety. Do not be afraid of pruning should any plant grow straggling or mis-shapen, and the month of October is a good time for the operation.

American plants may be transplanted at almost any time, as they usually rise from the ground with large balls of earth: autumn and spring are the most favourable seasons.

If removed in spring, they should be watered abundantly immediately after planting, and the operation repeated as often as the state of the weather may require. Be it remarked, however, that American plants, though partial to a moist soil, have no overweening fondness for a wet one; and stagnant water in a soil is as prejudicial to their growth as to that of plants in general.

The rhododendron ponticum, and azalea pontica, are, perhaps, the least particular of their class as to soil: they are the freest and cheapest also, and both excellent.

Formerly, nearly all the scarlet-flowering varieties of rhododendron bloomed so early in the year as to be destroyed by the spring frosts: February, March, and April was their season. This, however, thanks to modern cultivators, is no longer the case, for the handsomest kinds now bloom in April, May, and June.

Another genus of rare beauty belonging to the American plants is the Magnolia: the Exmouth variety of grandiflora and conspicua are the two best. Both require to be nailed against a wall with south aspect. The former is evergreen, and requires considerable space: the latter is deciduous, and of smaller growth. Both produce large egg-shaped, white, sweet-scented flowers.

If only two yards can be spared of a wall or fence with a southern or eastern aspect, by all means place against it the charming sweet-scented winter flower.* Nothing can be more valuable. Its modest primrose flowers, fragrant as orange blossom, expand in the very depth of winter, in defiance of frost and snow.

Some of the andromedas and vacciniums are also worthy of being mingled with the kinds already mentioned

* Chimonanthus fragrans.

but azaleas, rhododendrons, and kalmias are properly the leading plants.

There are likewise many *dwarf* flowering plants of great beauty admirably suited for the front row of borders or beds. To mention the dwarf species of rhododendron, the hardy heath, (a plant sufficiently important to form separate masses, where space is available,) the Menziesia, the empetrum, the ledum, the Gaultheria, the Polygala, the Pernettya, the Daphne, will be only to record a list of names that you may seek and become acquainted with them in your excursions among gardens and nurseries. Suffice it to say, they are all beautiful, and it is only the fear of becoming tedious that prevents me from describing their aspect and nature.

It must not be forgotten, while engaged with American plants, that they contribute some of the most suitable plants for forcing. The gaiety of the Conservatory in winter is due, in great measure, to the presence of the early-flowering rhododendrons, the Daphnes, azaleas, ledums, and the like.

LETTER VII.

She comes ; the goddess, through the whisp'ring air ;
Bright as the morn descends her blushing car ;
Each circling wheel a wreath of flowers entwines
And gemmed with flowers the silken harness shines ;
The golden bits with flowery studs are deck'd
And knots of flowers the crimson reins connect."

Darwin's Botanic Garden.

It seems a convenient plan for the present purpose to arrange flowers under the three following heads : 1. Hardy flowers, or such as remain always in the open air; 2. Flowers

which grow and blossom in the open air in summer and autumn, but require the protection of glass in winter and early spring; and, 3. Flowers which are cultivated in pots in the Conservatory or Greenhouse.

I shall now bring under notice the two first divisions, reserving what I have to say of the last for my next letter.

Among *Hardy flowers* may be classed numerous *Annuals*, as mignonette, larkspur, sweet-peas, &c., seeds of which, if sown in the open borders in autumn or spring, will flower, seed, and perish within a year. Here also belong *Biennials* as wallflowers, sweet-williams, and the like, which, sown in the open borders in July, and transplanted in September, will flower in the spring or summer following, and sometimes perish, also, after ripening their seeds. Next come *Perennials*, which may be raised in part from seed, but which are usually better obtained by cuttings, divisions of the roots, or bulbs. By Perennials I mean such plants as hepaticas, delphiniums, phloxes, lilies, anemones, and the like; which, if once put in the ground, usually grow and flower there for many years in succession. In every garden there should be, in addition to the clumps on lawns for bedding plants, a border set apart for the reception of sundries, and occupied chiefly with roses and Perennials. Such a border is at all times interesting, from the varying seasons at which its occupants bloom, and, if enriched by the addition of early bulbs, Biennials, and autumn-sown Annuals, it will become a dazzling and attractive spot in spring, before the "Bedding plants" are in flower. According to the modern fashion of gardening, a garden is expected to be gayest in summer and autumn, but there should be something to interest at all seasons; and winter and spring flowers should be prized, not only for their greater rarity, but also on account of the cheering

influence they exert over the spirits when winter is still lingering amid the woods and hills. I must confess to a great liking for early spring flowers, and think they are not half so much cultivated as they deserve to be. The first flowers of the garden and the first warblings of the grove, are alike harbingers of that genial season which few contemplate without pleasurable emotions. I would therefore plead for the introduction of a good stock of aconites, primroses, hepaticas, crocuses, snowdrops, and squills, among plants of lowly growth; and the pyrus japonica, the flowering currant, the mespilus, the almond, and the cherry-plum, among the shrubs and trees. Pardon, however, a word of caution here; and what I am about to say applies to all flowers, but more especially to Hardy Perennials. Do not trouble yourself with a long list of varieties, many of which have nothing to recommend them but hard names. Be select, very select; and choose a dozen of a sort of a good plant, rather than a dozen varieties to include eleven inferior things.

Roses, the greater part of which are hardy, are most valuable flowers for a Villa Garden. Great care, however, must be taken in selecting kinds suitable for the climate and soil, or they will prove a source of disappointment rather than of pleasure. If there is a spare clump on the lawn, it cannot be better occupied than with the "Queen of Flowers," sowing the ground beneath with some thin-growing annual, to prevent the impression of barrenness.

Thus it will be seen how a profusion of hardy flowers may be obtained, valuable chiefly for decorating the garden in spring and summer. Let us now turn to our second division, embracing flowers which grow and blossom in the open air in summer and autumn, but which require the protection of glass in winter and early spring. Here belong

numerous "*Bedding plants*,"* to which we look for the chief display in the garden in summer and autumn. In the first instance you will probably purchase these plants, maintaining the stock afterwards by propagating them from year to year. Of course there are failures in gardening as well as in every other recreation, and for these you must be prepared. Occasionally some particular plant may not do well, or something new may arise to supplant your old stock, and from these causes frequent purchases are necessary. But do not be discouraged by these incidents; they happen to the most skilled as well as to the tyro, and in the freshness of novelty consists one of the pleasures of gardening.

It is often discussed whether "Bedding plants" look best planted in separate masses of colour, or with the colours variously mixed. This, I submit, depends on the style of the garden. If a group of small beds are thrown together on a lawn, I should plant each with a separate colour, so contrasting the colours, &c., as to produce a pleasing and harmonious whole. If the beds are large, a mixture seems quite appropriate. I have often admired an arrangement in which the centre is filled with scarlet geraniums, and the circumference planted with the gold or silver-edged variety; the blue verbena, surrounded with the white alyssum, is another pleasing example. Again, when planting in borders, patches of three or four of a sort, disposed with due regard to colours, heights, &c., will have a pleasing effect. Indeed there is no limit to variety in the admixture or separate grouping of

* The term "Bedding plants" is applied to such as are annually planted out in the garden in spring, to bloom there in summer and autumn. On the approach of frost they are again removed under glass, or suffered to be destroyed. Geraniums, verbenas, fuchsias, calceolarias petunias, heliotropes, &c., are examples.

plants. It does not, however, seem desirable to pursue the subject further here. It may be safely left to your own taste and judgment. Bedding plants, which we will suppose to have been rooted in autumn or spring, should be gradually hardened to endure the open air by the middle of May, at which time they may usually be planted in the beds where required to flower, covering them with the pots from which they are turned for the first few nights. If the weather be mild and the soil in good order, they will soon take fresh root, and grow with surprising quickness; delighting you with the brilliancy and multiplicity of their flowers, till their growth is arrested by the winter's frost. Some few things usually treated as Bedding plants—the hardy fuchsias and œnotheras for example—may be left in the ground during winter, provided they are cut off level with the soil, and the crowns covered with an inch or two of sawdust or cinder ashes: any others you may wish to save should be dug up, potted, and placed in a cold frame or greenhouse on the approach of frost.

I have thus placed before you the principal materials which constitute the modern Flower-garden, and with them what varied and beautiful pictures may you not compose! I despair of pourtraying an ideal that shall at all equal your own conceptions of the beautiful, and therefore prefer offering a sketch of a Hertfordshire garden made on the spot some few years ago.* This will at least have the merit of being a reality that may be equalled or surpassed, which every ideal picture is not intended to be. You will remember, in the description of Elvaston, trees possessing a sameness of character were thought to superabound; in Drummond-Castle gardens the

* See my "Morning Rambles in the Rose Gardens of Hertfordshire."

trees and flowers were well varied, and held in a beautiful equilibrium; in the garden now about to be described you will probably think flowers are sufficiently in the ascendant.

"On entering the garden, and proceeding along the terrace leading from the mansion, I was first agreeably struck with the beauty of the climbing roses, trained against a south-wall, the flowers bathed in dew, and drooping in magnificent profusion. Tastefully intermingled with the roses, at equal distances, were other climbing plants—the sweet-scented clematis, the evergreen Magnolia, the Wistaria, and various kinds of honeysuckles. A few feet from the wall, and running parallel with it, is a terrace-walk, gravelled, and about three yards wide, with flower-beds on either side: behind these, on the one hand, is the lawn, with choice ornamental trees rising among various groups of flowering plants. A cluster of small beds, planted with well-contrasted verbenas, occupies the end of the lawn near the house. In the centre of these is a basin, ornamented with rock-work and enlivened with a pretty fountain, surrounding which is a circle of light Norman arches, connected with chains, over which the charming tropœolum trails with a careless grace. The simplicity and beauty of this arrangement are irresistible, and the effect is heightened by occasional glimpses of the fountain, and by the dazzling glow of the verbenas blossoming in the beds around.

"Although the surface of the garden is nearly flat, you are never once disturbed with the idea of monotony or sameness. The skilful disposition of flower-beds and choice evergreens, with views opening into the park beyond, abounding in magnificent trees, "which wear their crowns right kingly," create the impression of a rich and infinite variety. Near the end of the terrace, and

a little to the left of it, is a thatched arbour completely fenced in from the sun with yew and laurel, and planted behind with a collection of ferns, which luxuriate beneath the shade of two fine hickory trees. Quitting this spot, you turn into a winding walk, overarched with laburnums, whose golden racemes of flowers have doubtless a fine effect in their season. The next objects which strike the attention are two large rose-acacia trees which shelter the approach to a small hexagon garden, with an entrance on each side beneath light arches of trellis-work. There is a basin and fountain in the centre here, and the garden is filled with the usual brilliant and odorous bedding-plants. Adjoining this is the rosetum, and the perfumes wafted from it seem to invite you to pass onward. As you enter, a brilliant spectacle greets the sight: above, around, below, roses glitter everywhere. Walks wind gracefully among the trees, and the entire rosetum is hedged in with evergreens, principally laurel. In the interior a pretty effect is obtained by edging the beds with flints and pebbles, among which the golden moss (sedum acre), the alpine speedwell (veronica alpina), and various plants of lowly growth, are made to creep. At one end of the rosetum is a rustic temple or arbour, raised above the surrounding level, and covered with various interesting climbing plants, from the foreground of which a splendid *coup d'œil* of the rosetum is obtained. The ascent is by a short flight of steps, built in true rustic style. On either hand, twined over the balustrades, is a row of Fuchsias, whose coral-like blossoms hang in magnificent profusion, relieved by masses of the silver-edged vinca trailing at their feet, and supported by rhododendrons, which form a richly-clothed bank in the foreground."

LETTER VIII.

" Who loves a garden, loves a greenhouse too :
Unconscious of a less propitious clime,
There blooms exotic beauty, warm and snug,
While the winds whistle and the snows descend."—COWPER.

FLOWERS in winter cannot be expected, without the aid of glass structures; and many of the ordinary operations of gardening will be greatly facilitated by the use of a greenhouse or range of pits. Indeed, the latter are indispensable in every well-ordered garden, however small. Pits should slope towards the south, and they should be so built that the operator can readily reach across, say six feet from back to front. A flag pavement all round, four inches above the ground-level, will impart dignity, and secure a dry walk. It should be understood, that if pits of different capacity in point of height within are built, there is no occasion for them to be of varying heights in the roof. The height may be gained by excavating deeper in the interior. Pits should be built with nine-inch brick-work, which costs little more than four-inch, is more substantial, and excludes more frost. If the ground is perfectly dry at all seasons, they may be sunk a foot below the ground-level, which gives increased warmth. In these pits nearly all the bedding-plants may be kept safely during winter, provided the glass be covered with mats and straw in frosty weather. If several pits are built, it is well to vary the height to suit different plants, as the nearer the tops of plants are to the glass, the better they keep. Three feet at the back and one foot in front, measuring from the ground-level, may be given as a convenient and small size. The ground within, on which the plants are set, should be paved with

tiles or oyster shells, and afterwards covered with a layer of cinder-ashes, to prevent the worms rising. For all horticultural purposes, the lights should be made of the best yellow deal, and glazed with British sheet glass, sixteen ounces to the foot: they should be made to move up and down with ease, that little or much air may be given with facility, as the state of the weather, or the requirements of the plants, may demand.

Although a greenhouse is not a necessary accompaniment to a garden, it yet adds greatly, and in a variety of ways, to its delights. Waiving, for a moment, the question of mere outward show, I will venture to describe a house capable of producing and preserving plants, and suited to the requirements of a Villa Garden. First, it should be span-roofed, the ends placed north and south, divided in the middle to form two compartments, one of which may be kept warmer than the other, and used as a propagating and forcing-house in winter and spring. A walk, two feet wide, running down the centre, with raised benches on either side about breast high and four feet in width, is a very convenient and economical arrangement. These benches or stages should be of slate, because cooler, cleaner, and more durable than wood. The paths may be paved with York stone or bricks. A slate cistern, fixed at one end, or beneath the stage inside, to receive the rain from the roof of the house, will save you much labour, and place ready to your hand water of a suitable temperature, and of the best quality. In the cool compartment of this greenhouse may be wintered and grown New-Holland plants, Fuchsias, geraniums, Camellias, &c.; while the warm one may be used for propagating and forcing early flowers to enliven the drawing-room or conservatory in winter and early spring. This is the sort of house for real utility,

adapted for rearing and forcing a number of plants at a small cost; but where there is no conservatory, the greenhouse is usually required more ornamental, which of course may be obtained by an additional outlay.

The conservatory, which is the chief of plant-houses, is usually an appendage to the dwelling-house, and belongs perhaps as much to the latter as to the garden. The architect and the plant-grower are both usually consulted in its erection; and while it is the chief object of the one to rear a structure of taste and beauty, the leading idea of the other is to obtain a house adapted for the growth of plants. "Is the union of these points impracticable," do you ask? I cannot think them so, although I have often seen buildings, neither elegant nor in a high degree useful, rise from attempts to combine them. When the architect is first consulted, he should be impressed with the importance of giving all possible attention to the following points:

1. The wood-work and decorations should be as light as possible, so that the sun's rays be but little intercepted.

2. The fittings in the interior should be so contrived, as that the tops of the plants may be brought near to the glass.

3. Heating and ventilation should be efficiently secured.

4. A glass should be used which will not burn.

However skilfully the conservatory may be constructed, it is not suited for encouraging the growth of *young* plants; a greenhouse or pits are the proper structures for these, which, when arrived at a goodly size (and especially during the blooming season), may be transferred to the conservatory. The best medium of heating plant-houses is undoubtedly hot water; and of the various boilers we have tested we believe a simple saddle boiler to be one of the cheapest and the best. The boilers manufactured by

Burbidge and Healy, of Fleet Street, are, however, exceedingly good—so good as to leave nothing to be desired. The furnace and ash-pit door, known as "Sylvester's," are much more complete than any thing preceding them. Four-inch pipes are generally used, and unless the house be large, a double pipe, consisting of flow and return, passing once round, will be sufficient. Flues are still used in some places, but they certainly are not so clean, nor is the heat so sweet; and I doubt whether, in the long run, they are more economical.

It may here be noticed, that overheating a house sometimes proves a serious evil in unpractised hands; and whilst I readily concede that the operator should ever possess a little surplus power to meet contingencies, yet I should object to such a surplus as might occasionally tend to mislead persons not thoroughly accustomed to the charge of the fire. When about to heat a conservatory or greenhouse, it is best to call in the aid of a good practical gardener, one who has been used to the management of hot-water, who will quickly adjust the matter in a safe and economical way.

Having said thus much of the buildings, allow me to fulfil the promise of my last letter, and touch briefly on the plants which should properly occupy them. In the conservatory and greenhouse, we place a variety of exotics, including such families as the following: New-Holland plants, heaths, Camellias, Begonias, azaleas, cinerarias, chrysanthemums, pelargoniums, Fuchsias, petunias, verbenas, &c. The three last-named will be cultivated more extensively as bedding plants, but they cannot be altogether dispensed with here. They, in common with Alstræmerias, gladioli, kalosanthes, lilium lancifolium, &c., are of the greatest value in the conservatory late in summer and

autumn, blooming when the majority of greenhouse plants are out of bloom. Where the conservatory is large, it is customary to plant out in the borders such things as orange-trees, Camellias, rhododendrons, acacias, Brugmansias, neriums, cytisuses, daphnes, &c., also jessamines, Passion-flowers, Kennedyas, tecomas, Fuchsias, heliotropes, and the like, training the climbers up the back pillars and rafters. In other cases, these and kindred plants are cultivated in pots, and the majority, if treated naturally, flower in spring, summer, and autumn. But we must also press into our service, and from any quarter, plants which, either naturally or by artificial treatment, may be induced to flower in winter, for the conservatory is expected to be gay at all times. There are several hardy shrubs, of which we may instance roses, lilacs, Deutzias, rhododendrons; some bulbs and perennials, as hyacinths, tulips, and dielytras which if potted and conveyed into the warm compartment of the greenhouse in November, will flower during the latter part of winter. Then it should be borne in mind that chrysanthemums, scarlet geraniums, heliotropes, tea-scented and Chinese roses, which bloom late in autumn, may, if judiciously managed, be induced to prolong their time till the "forced plants are ready to replace them, or the Camellias, Chinese primroses, coronillas, and the like, come naturally into bloom. Every plan and opportunity of increasing the stock of winter flowers should be eagerly embraced; for if flowers are more enjoyable at one season than another, it is perhaps when, in visiting them in their crystal dwellings, we are led to contrast the warmth, comfort, and elegance that reign within, with the less inviting aspect of the garden without.

As I have promised you a separate letter on each of the four seasons, entering more fully into the practical details of cultivation, I need pursue this subject no further here.

LETTER IX.

"Who can refuse homage to the Rose."—DELILLE.

I AM not surprised that you should wish to hear more about the rose, a flower which, from its beauty, fragrance, and classic associations, deservedly holds a foremost place in the affections of the people of England. The most ancient writers of all countries and classes—Hebrews, Greeks, Romans, divines, philosophers, poets—did not disdain to speak its praises; and in the modern civilized world it is becoming more and more cultivated every day. I must not, however, proceed further in this strain, or you will suspect me of partiality, whereas with me the rose is only one member of a very numerous family; and if, from its varied attractions, and the bright associations with which it is surrounded, I am led unconsciously to feel a preference, I am aware it is by no means prudent to show it. Let me, then, turn at once to the practices of cultivation.

The most important requirements in the cultivation of the rose, are, a good soil and a pure air. A deep rich loam, well drained, seems to suit it best; and if the natural soil of your garden be *far* distant from this, the nearer you can approach it by the aid of foreign materials, the better. As we cannot alter the state of the air, this requirement must be met by suiting the varieties to it. In smoky localities, or where, from any cause, the air is impure, the hardiest varieties of hybrid Chinas, hybrid perpetuals, and noisettes, will be found to succeed best.

The position of roses in a garden will depend much on its size. If there be room to form a rosetum, a series of beds on a lawn, with single specimens of American or other ornamental flowering-plants interspersed, is very

effective. A single clump on a lawn is in good taste, formed of either standards or dwarfs, or both combined. Standard and pillar roses may also be planted to advantage, singly on lawns, or in avenues. The borders may be planted with groups here and there, and the climbing sorts planted against, and trained to, bowers, trellis, or rustic work. The rose, in its various forms, is adaptable to almost every kind of ornamental planting, and positions of suitability will almost surely show themselves in every garden.

It has already been said that the choice of varieties should be regulated by the soil and situation. The moss and tea-scented rose are considered by many the most beautiful, and certainly they are the most delicate. Neither succeeds well in the immediate neighbourhood of large towns; whereas both grow as well as the commonest kinds in a warm situation, pure air, and light loamy soil. The hardiest groups of roses are perhaps the damask, Gallica, Ayrshire, sempervirens, hybrid China, and hybrid Bourbon, among summer roses; and some varieties of hybrid perpetual, noisette, and Bourbon among the roses of autumn.

The month of November is a capital time for the removal of roses intended to remain permanently in the open ground. The temperature of the earth at that period induces the rapid emission of fresh rootlets, and the plant becomes well established in the soil by the arrival of the growing season. Nevertheless, spring-planting is not open to condemnation. I have seen the most complete success wait on its adoption. The ground where roses are intended to be planted should be first trenched two-spit deep, and plenty of well-decayed manure be worked in in the operation. If the soil be very tenacious or clayey, a portion of old mortar or burnt earth is highly advantageous. When

standard roses are planted, each should have a neat stake to secure it from being shaken by the wind.

One word on pruning roses. Some prefer autumn for the operation, others decide in favour of spring. To thin out the supernumerary branches at the former season is good; but those which are left should not be shortened till spring, or the buds become excited, and are liable to suffer from the late frosts. When thinning out, first remove all weak and unhealthy wood, then coarse, unripened shoots, except such as are required to maintain the form of the bush or tree. When shortening in, weak shoots may be cut back to two or three buds, and strong ones to five or six. Bear in mind, however, that the autumnals should be pruned much closer than the summer kinds, and that it is quite possible, by too close pruning, to prune the latter *out* of bloom.

The rose is well suited for cultivation in pots under glass, and for this purpose the tea-scented, hybrid perpetual, and Bourbon are the best. Strong turfy loam, with a mixture of decayed cow-dung, crushed bones, charcoal, and sand, forms a suitable compost. The plants should be re-potted at least once every year, early in autumn, immediately that the wood is ripened, and before the leaves entirely fall. All may not require larger pots: in this you must be guided by the state of the top and roots; but all will require the setting free of the drainage below, and the removal of the top soil, which has become washed clean of its nutritive particles by the quantity of water that has passed through it. Roses cultivated under glass, whether intended for forcing or not, should be both thinned and shortened in autumn: the objection urged against shortening out-door roses at this season does not hold good here. If roses be required to bloom so early as February and

March, artificial heat must be employed from the middle of December. Commence with a gentle heat, increasing gradually, and allowing of a variation of 8 or 10 degrees between the night and day temperature. If you have a forcing-pit in which to bring on other early flowers, that will be exactly the place for them. In forcing-pits the green fly, or aphis, increases with extraordinary rapidity. Be on your guard here. Fill the pit with tobacco smoke whenever any are seen, and repeat it as often as they reappear: no plant will thrive encumbered with these sap-suckers. It is to be wished that as easy a plan could be devised for their destruction out of doors. But there the more tedious and less successful methods of brushing them off and syringing with tobacco or quassia-water have to be resorted to.

To keep roses in the open ground in a high state of cultivation, suckers should be watched for and destroyed; the soil should be manured and forked over once a year, in autumn or winter, and hoed once or twice during summer. The rose-grub should be sought in early spring, and destroyed by hand-picking, or your bloom may be marred, if not spoiled. When a plant is in robust health it often sends up shoots of extraordinary vigour—channels for the escape of superabundant sap—which, if allowed to take their natural course, will deprive the surrounding shoots of their just share of nourishment, and which consequently fall into a weakly and unhealthy state. Watch and use your judgment in stopping these gourmands by breaking off their heads when you think they have shot sufficiently far to answer the purpose for which they were started.

With a word or two on the protection of tender roses, permit me to close this letter. The tea-scented and Chinese roses, also some of the noisette and Bourbon, are

tender; that is, suffer from complete exposure to the frost and rain in winter and spring. Where convenient, such varieties may be cultivated to perfection under glass; but in other cases a raised border on the south side of an evergreen hedge may be so managed as to attain the same end. The border being raised nine inches or more above the surrounding level, the plants are safe from excess of moisture (as destructive an agent as frost), and frost may be sufficiently excluded by a straw mat passed over stakes, one end of which are driven into the ground, and the other bent over and fastened to a bar running along the hedge. As this mat is moveable at will, you will have full power of admitting sunlight and air in favourable weather, by the long exclusion of which in winter too many so-called *protected* plants never re-awaken to life and beauty.

LETTER X.

"———gentle gales,
Fanning their odoriferous wings, dispense
Native perfumes, and whisper whence they stole
Those balmy spoils. MILTON.

THE principal objects sought and realized in the cultivation of flowers, are the entertainment of the mind, and the gratification of the sight. But this is not all. The Creator, when he ordained man to toil, granted, in his bounty, that another sense—that of smelling—should be delighted by these objects of his solicitude. And it is no more than reasonable to suppose that sweet-scented flowers will be sought for and appreciated in every garden and

greenhouse. You, I know, estimate them at their full worth, and therefore I shall offer no apology for this special reference to them. It occurs to me that the best method of dealing with this subject will be to enumerate and describe a few of the most striking and desirable; and in doing this I shall arrange them in two classes—

HARDY AND GREENHOUSE PLANTS.

§ 1. SWEET-SCENTED HARDY PLANTS WHICH MAY REMAIN CONTINUALLY IN THE OPEN AIR.

1. *The Azalea.*—There are almost numberless varieties of this pretty plant, the principal colours of which are yellow, orange, buff, and scarlet, the four colours sometimes delicately blended in the same flower. There are also white, cream, fawn, pink, rose, and purplish kinds. It is a deciduous shrub, rarely exceeding three or four feet in height, flowering in May, and requiring peat earth. The flowers are very sweet, produced in clusters, and it is often called the American honeysuckle, from the resemblance of the flowers to those of the latter plant.

2. *Calycanthus floridus* (the American Allspice.)—This is also a deciduous plant, requiring peat, ranging about the same height as the Azalea, and producing brown nutmeg-shaped flowers in the month of June. It sheds a delightful perfume, scenting the air for yards around its native stem in moist weather.

3. *Chimonanthus fragrans.*—Another deciduous plant, requiring peat, and which has been already alluded to. The flowers, which are lemon, with a crimson inner vest, expand in December and January. To flower this plant successfully, it should be trained against a south or east wall.

4. *Clematis flammula.* The clematis, though not in-

digenous to Britain, has become a thorough English plant, used to decorate alike the cotter's porch and the ornamental dressings of the most elaborate garden. It is a true climbing plant, thriving in any common soil, greeting its possessor with large clusters of greenish-white highly-scented flowers in the months of August and September.

5. *Daphne pontica.*—A handsome evergreen shrub, growing about four or five feet high, thriving in common soil, and well suited for a front-row shrubbery plant. The flowers are of a greenish yellow, insignificant in size, but emitting the most agreeable perfume in the evening, which penetrates to some distance. It blooms in April. There are also many other varieties of daphne, highly fragrant, and well worthy of cultivation.

6. *The Honeysuckle.*—This, like the clematis and jessamine, is the most popular of climbing plants for covering bowers, trellis-work, fences, and the like. There are several varieties of honeysuckles, blooming mostly in spring and summer. Those commonly known as the Dutch, the flexuosa, and the evergreen, are among the best: Magneville's and Brown's variety are also very superior, though but little known. The scarlet and yellow-flowering trumpet honeysuckles are truly beautiful, but require a warmer situation and more care than the preceding. All grow and flower abundantly in common garden soil.

7. *The Jessamine* (Jasminum).—The best varieties of this well-known climbing plant are the white, and what are termed by botanists revolutum and nudiflorum. The former flowers in July, and can be trained to cover a considerable space: the last, whose flowers are of a rich bright yellow, blooms profusely in the depth of winter, and is indeed a charming plant. Both are found to thrive well in a common soil.

The poet Moore alludes very gracefully to this plant, when he speaks of

> ——Many a perfume breathed
> From plants that wake when others sleep;
> From timid jasmine-buds that keep
> Their odour to themselves all day,
> But when the sunlight dies away,
> Let the delicious secret out
> To every breeze that roams about.

8. *The Lavender.*—Common as is the lavender, it will not do to omit it among a list of sweet-scented plants. Besides, it offers this great advantage: if the flowers are gathered just before they are fully expanded, tied in bunches, and dried in the shade, they will retain their fragrance for years. Being a dwarf, compact shrub, it may be placed in any nook or corner, and thrives in common soil.

9. *Mignonette.*—This is the "fragrant weed" alluded to by the poet Cowper, and which he also designates the "Frenchman's darling." It is as often cultivated in the greenhouse as out of doors, on account of its susceptibility of frost. You must sow annually out of doors as late as April, so that all danger of frost is over before it pushes through the soil, and you will be cheered with its fragrance and unobtrusive beauty in the sober months of autumn. As the seed is small, it should be sown in rather fine light soil; and if its permanent station is not of this character, adopt this plan, and transplant it afterwards. If the seed is sown under glass late in autumn, you will raise a crop of young plants flowering in May, at which time they may be transferred to the open borders, and will continue flowering there throughout the summer.

10. *Pinks, Cloves, Carnations, and Piccotees.*—Pinks

flower in June; carnations and piccotees in July and August. They are all beautiful sweet-scented border plants, the old white-fringed pink and the crimson clove especially so. They must not be planted in too rich a soil. The former are propagated by cuttings; the latter principally by layers.

12. *Rosemary.*—This charming shrub, with its fragrant leaves, should by no means be neglected because it is peculiarly a cottage plant. Its rigid erect growth well adapts it for many situations in the flower-garden, and some of our high-priced novelties are not half so handsome and effective. Let us, then, bestow "honour where honour is due." I have heard it said that rosemary "thrives best where most neglected," and certainly it is a very hardy plant, not over fastidious about soil and situation.

12. *The Sweet Bay.*—This is a noble evergreen of handsome growth, the leaves endowed with a delicate aromatic scent. It is suited for the shrubbery, or to stand singly on a lawn, where it will grow both wide and high. It is, however, better suited to the south of England than the north, because liable to suffer from severe frost.

13. *The Sweet Briar.*—Who, indeed, would forego the company of the charming eglantine? Place it in your shrubbery, make a hedge of it if you will: certainly the remote corners of your garden might be less worthily occupied. The fragrance of the leaves in spring and summer, and the beauty of the delicately-tinted blossoms, succeeded by thousands of bright scarlet hips, present a combination of claims which cannot be judiciously overlooked.

14. *Stocks, Sweet-Williams, Wallflowers.*—"More old-fashioned flowers!" do you exclaim? Well, this does seem vexing; but let me assure you that their appearance is not

by design, but arises naturally out of the circumstances. Sweet-scented flowers are the object sought, and here they are. But have we really any flower that surpasses in beauty a well-grown stock? And allow me further to assure you, that I have some sweet-williams, recently received from an amateur friend, which will vie in beauty with the most fashionable denizens of the garden.

The ten-week stocks should be sown annually, on a warm border, in April, and transplanted in May. The other kinds (intermediate, Brompton, and queen), sweet-williams, and wallflowers, should be sown in a similar position in June, that the plants may be removed to their permanent stations in September and become strong and firmly established there before the frost sets in. They will then bloom the following spring, ripen their seeds, and then die.

15. *Sweet Peas.*—These, too, are annuals, and must be sown every year. February is a good time to obtain an early bloom; and if a succession be deemed desirable, another sowing may be made in April. Obtain them in mixed colours, as they look much prettier in this way in small gardens. Sow them in patches in the borders, or in rows to form a temporary fence. Place sticks to them when about a foot high: in good soils they grow to the height of six feet.

16. *Violets.*—The Russian violet is the best. At this date (January 9th) I could gather a basketful off a small north border in the nursery, and they have been loading the air with their fragrance for the last three weeks. They are very hardy, of free growth, and quickly multiplied to any extent by division. There are also the double blue, the tree violet, the double white, and the Neapolitan, all excellent varieties. The last-mentioned, which is a pale double blue, and highly fragrant, is one of the finest and

most desirable for a frame, but is not so hardy out of doors as the Russian. Violets may be planted in common soil, and appear to delight in partial shade.

§. 2. SWEET-SCENTED GREENHOUSE PLANTS.

1. *The Cape Jessamine* (Gardenia radicans).—This is a dwarf evergreen greenhouse shrub, with shining leaves, flowering in June. The flowers are creamy white, and most deliciously scented. The plant thrives best in a mixture of peat and loam, and delights in moisture and warmth.

2. *The Cyclamen.*—The cyclamen is a very pretty tuberous-rooted plant, of lowly growth, thriving well in a mixture of rich sandy soil. There are several species and varieties of white and red, flowering at different seasons; but the persicum only is scented.

3. *The Daphne.*—The daphne indica, odora rubra, and the gold-edged variety of the latter, are charming plants, indispensable to every greenhouse or conservatory. They are evergreen shrubs, attaining in time to some size, highly scented, and remaining a long time in bloom. Peat, sand, and loam form a soil in which they flourish well, and they flower in the first months of the year. A small plant, when in bloom, is sufficient to scent a greenhouse.

4. *The Heliotrope.*—This is a valuable plant, which may be had in flower every month in the year, if a regular succession of cuttings be taken; and they strike so freely in warmth and in sandy soil, that there seems a temptation to put the practice in operation. The heliotrope will flower freely enough in the borders out of doors, in the summer and autumn months; and if cuttings are struck in June and July, and potted on as they increase in size, they will flower in the greenhouse or conservatory in winter and

spring. There are several varieties, mostly of a lavender or purplish tint. All are sweet and pretty, and valuable for the abundance of bloom they produce.

5. *Hyacinths, Narcissus, Jonquils,* &c.—These may be placed in pots or glasses in the month of November. If grown in pots, the bulbs should be so set in the earth, that one-third of their depth is above the soil. Place them in some dark part of the house, or plunge the pots in ashes out of doors, covering them entirely, and removing them to the greenhouse in January. This practice will retard the season of flowering, but increase the size and beauty of the blossom. Earlier flowers may be obtained by keeping them constantly exposed to warmth and light from the time they are potted. If grown in glasses, the same absence of light in the early stages of growth is even more beneficial in assisting the development of vigorous roots. The glasses should be filled with rain-water, which should be changed fortnightly, of the temperature of the room in which the plants grow, and half a teaspoonful of guano added each time. It is not necessary to expatiate on the beauty and fragrance of these well-known plants, the variety of colours they embrace, and their value in decorating the conservatory or dwelling-room in winter and early spring.

6. *The Jessamine.*—The large-flowered variety (Jasminum grandiflorum) is a capital plant for training up the pillars, sides, or rafters of your conservatory or greenhouse. It is really pretty and graceful, thriving in common soil, and producing its fragrant white blossoms in July and August.

7. *Mignonette.*—This is a first-class out-of-door plant, and, like the heliotrope, well worthy of cultivation under glass, for its flowers in winter and spring. Seeds sown

in pots out of doors in June and August, and taken in before the arrival of frost, will produce a succession of flowers when all without is barren and desolate.

8. *Mandevillea suaveolens.*—This is a charming conservatory-climber, of rapid and extensive growth, producing clusters of snow-white fragrant flowers in the summer and autumn months. It thrives in a mixture of peat and loam.

9. *Musk.*—A plant too well-known to need description. It is of free growth, easily propagated by division, and thrives in common soil. The scent of the leaves is very powerful—to some, disagreeable.

10. *The Night-scented Stock* (Cheiranthus triste).—Never was a more appropriate name given to plant by botanist than the specific name which this plant bears. Sad indeed is the aspect of both flowers and leaves. But the medal has its reverse. The odour emitted at night is most agreeable; and as the plant takes up but little room, and is easily cultivated, it may be advantageously admitted in a small collection.

11. *The Orange-tree.* — For large conservatories the larger kinds are appropriate; but for smaller structures the dwarf species (of which, perhaps, the Otaheite is the best) are more suitable. In the French flower-markets it is no uncommon thing to meet with plants of these dwarf species, scarcely a foot in height, profusely laden with both flowers and fruit. They are indeed most beautiful objects, and easily cultivated. The soil they delight most in is a mixture of sand, loam, and peat. The fragrance of orange-blossom is familiar to all.

12. *Geraniums.*—There are many varieties of geraniums with highly-scented leaves, but there is a difference of opinion as to the agreeableness of their perfume. The

citron-scented, however, seems to be universally approved. All are of easy culture, thriving in common soil: the flowers are simple and unattractive. Like the heliotrope, they thrive well out of doors in summer and autumn.

13. *The Sweet-scented Verbena* (Aloysia citriodora).—This is a well-known plant, the fragrance of whose leaves is not surpassed by any vegetable scent. It thrives in common soil, and cuttings strike root readily, taken in a half-ripened state, and placed in a gentle heat.

This list may be extended almost indefinitely.

LETTER XI.

"What wondrous life is this I lead!
Ripe apples drop about my head;
The luscious clusters of the vine
Upon my mouth do crush their wine;
The nectarine and curious peach
Into my hands themselves do reach."

ANDREW MARVEL.

WHETHER or not fruit-trees should have place in a Villa Garden, depends principally on the size of it. If admitted, they should be planted in a separate compartment, and fenced off from the flower-garden by a low evergreen hedge. Their usefulness is a great inducement to their cultivation, and they are not without a claim on the ground of beauty. Your apple-trees will repay you by their snow-white crimson-tinted blossoms alone; and your pears, plums, and cherries, if less attractive, possess a simple beauty by no means uninteresting. I will suppose a slip can be spared for them, without so curtailing the

general garden as to mar the effect as a whole; and on this supposition will offer a few remarks on their culture.

The most useful fruits are apples, pears, cherries, plums, currants, gooseberries, raspberries, and strawberries: these may be planted in the open border; and if space can be spared on a wall with a southern aspect, a peach, a nectarine, and an apricot, will prove a valuable addition. The four kinds first named may be grafted on dwarf stocks,* and grown as low trees of pyramidal form. They may be planted in straight rows, about eight feet apart, with a gooseberry or currant-bush between every two trees. The raspberries may also be planted in rows, five feet apart; and the strawberries in beds or by the sides of walks. The peaches, nectarines, and apricots must be grown against a wall; and while their fruit is a greater delicacy, it must be told, they also require more careful and attentive culture. Perhaps the most valuable fruits, in an economical point of view, are apples and pears: they give but little trouble; and if the sorts be judiciously chosen, they may be had in season nine months in the year. True, as preserves, some fruits are always at command, but a Villa Garden will hardly produce them in greater quantity than is required for use in a natural state.

It has been the practice of some to make what are called "STATIONS" for fruit-trees, a plan of much importance, especially where the soil is improper for their roots to revel in at random.

The advantages of "STATION" making are these: First, to avoid the expense of making what gardeners have hitherto termed "*borders*," which have in the main proved

* Fruit-trees on dwarf stocks may be obtained at any of the leading nurseries.

costly proceedings, and may be fairly termed "works of supererogation." Secondly, so to place a tree that the roots may be under a control, free from impediment, the station, while of limited extent, being supposed capable of sustaining the tree irrespective of any portion of the adjacent soil; although it may become prudential to suffer its extending roots ultimately to invest that soil. It may here be observed, that this mode of culture ought to be coupled with a system of biennial or triennial top-dressing, inasmuch as the tree, being confined to what may be considered the minimum amount of prepared compost, such contingencies as overbearing and dry summers have to be provided for. These stations are simply platoons of soil, adapted to the wants of the tree; and as to dimensions, it has been proved that from six to eight feet square will sustain almost any fruit-tree in course of training, providing the soil is good. Such stations may be made eighteen inches below the ground level, raising the surface four to six inches above it.

Fruit-trees delight in a loamy soil, and few of them object to a generous one: therefore, if it be not naturally of this description, it should be made so. In selecting the trees, be sure they are of the best sorts, and free from gum, and canker, diseases too prevalent, and as difficult of cure as any disease to which vegetable life is subject. Root-pruning, of which so much has been written of late, is, in my opinion, objectionable *as a system*. If a tree grows too vigorously to blossom, it may be root-pruned to advantage; but if it blossoms, there is nothing to gain by root-pruning: non-productiveness arises clearly, then, not from excessive vigour in the tree, but from other causes, usually the destruction of the embryo by the spring frosts. I have had ample opportunities of witnessing the effect of

root-pruning as applied to pear-trees, and in most cases where productiveness has accompanied it, it has been at the expense of the longevity of the tree, and the quality of the fruit. The practice may be desirable in individual cases, but it seems to me that it should be exceptive rather than general, and it is a practice on which no system of culture can be founded. "But in the exceptive cases, when a tree grows too vigorously to blossom, where else is the remedy?" say its advocates; "for without blossom there can be no fruit." True; but we think we have a better remedy even here—a remedy founded on prevention rather than on cure. If stations are not adopted, consider well the nature of your soil at the time of planting; and if so stiff and rich as to render excessive vigour probable, pave beneath the roots, and surround them with poor soil, which will seldom cost so much as the manure ordinarily used. Then, by stopping the shoots in summer, on the eve of the completion of growth, and by tying them down to the stem, or to sticks fixed horizontally, an abundance of blossoms will be secured, and you have only to protect these from frost to obtain a supply of fruit. I would not conceal from you my opinion, that the root-pruning of trees, *as a system*, is a mere horticultural plaything, well enough for the amusement of childhood or imbecility, but wholly unfitted to answer any practical end; and unless the feeding of the sympathies can afford you truer pleasure than the contemplation of the vigorous, the healthful, the beautiful, by all means avoid these half-starved, miserable-looking, root-pruned trees.

Speaking of protection, a practice now almost universally recognised, means must be taken to accomplish it with ease and precision when the day arrives in which it will be needed. As to walls, there is nothing like having

a broad coping, projecting quite nine inches from the wall. There is no necessity, however, for this being fixed: it is far better to have it moveable, as it is doubtless advantageous to expose the trees fully to air, light, and moisture from above during the fine weather of summer. To accomplish this, brackets may be fixed in the wall when built, or driven in afterwards, and boards of the desired width may be provided to lay on the brackets. Through the front edge of these brackets pass a curtain-rod, for rings to slide on; and some canvas, or other such material, being provided, rings may be fastened to it to slide on this rod. This will provide what is termed a conservative wall; and with such a provision, coupled with proper trees, under favourable circumstances a good crop of fruit will be secured five seasons out of six; whereas a crop from neglected trees is, of all things, most uncertain.

As for ordinary espalier or pyramidal trees, I know of nothing more simple and economical than spruce boughs placed amongst the shoots or tied to poles, and suspended over them: indeed, any boughs will be of service, as both warding off much frost and arresting radiation. Some persons go to the expense of canvas or bunting for these, but such are generally under an artistic course of training, to unfold the details of which would make my letter too long.

Fruit-trees, whether grown as espaliers or pyramids, require looking over once or twice during summer, to stop with the finger and thumb any strong shoots that threaten to destroy the balance of the tree. Wall-trees also require pruning and nailing to the wall in spring. Currant and gooseberry-bushes should be annually pruned in winter or spring. The old canes of raspberries should be removed at the same season, and the young wood tied up

to stakes, as it is from that the fruit is produced. The runners from strawberries should be removed in autumn, and the soil loosened between the rows with a small fork, adding every season a little decomposed manure.

Thus far of the system of fruit culture as ordinarily practised, but which, owing to the changeful nature of our seasons, leaves the results (except where thorough protection is afforded) very uncertain. I sometimes hear cultivators of fruits and flowers speak eloquently of the gentle springs of bygone years with their "ethereal mildness." Glancing retrospectively over the last twenty years, how little can I speak as to the return of such gardening amenities. Frequent disappointment has brought me to the conclusion, that where there is leisure and opportunity, the choicer kinds of fruits should be grown in pots under glass. This mode of culture was adopted by our forefathers, and seems particularly suitable for Villa Gardens. An orchard-house may be built for a few pounds, and then fruit culture, even with the choicest kinds, becomes as certain as other branches of gardening. I must, however, tell you, that I cannot give in my adhesion to the style of orchard-house just now in fashion. A piece of land, fenced off with evergreen hedges, roofed over with glass supported on larch poles driven into the ground, offers little advantage over the system of fruit-growing already detailed. How many such houses had their crops destroyed in common with those on the walls and in the open quarters by the frost last spring? It is surely a false economy to spend twenty shillings for the attainment of an object, and fail, when the expenditure of thirty shillings would render success certain. Until you can make up your mind to build a house with walls of nine inch brick-work, I should not recommend you to

attempt the cultivation of fruit-trees under glass. Then, unless you have a vacant wall, with a south aspect to form a back, a low span-roofed house will perhaps prove the cheapest and the best. Of a moderate-sized house, the outer walls should rise about three feet above the ground level. On the top of the brick-work lay a plate of deal, in which, with the centre plate, the rafters may be fixed a foot apart, and afterwards glazed with the glass previously recommended. A walk may be dug out entirely round the interior of the house, throwing up the earth in the centre, as a stage on which to set the pots, bricking or boarding it round to keep all firm and close. Thorough ventilation must be secured, and to effect this, shutters should be inserted in the wall, some level with the ground, and others just under the plate, while a few panes of glass near the top of the house should also be moveable. A thick canvas, or straw-mat should now be prepared, to draw over the roof in case of frost when the trees are in bloom, and for use at other times in regulating the temperature. Now all is safe. No heating apparatus is required. However severe the frost in winter, fruit-trees suffer nothing from that: it is the frosts of spring which work the mischief, and against these the shelter above described will be found sufficient. When cultivating fruit-trees in pots, it is a matter of some importance to have in readiness an appropriate soil. Strong turfy loam should form the staple, to which add a goodly portion of half-decomposed stable manure, a few pulverised bones, and a little clean drift-sand, throwing them together in a rough state (not sifted), and turning them over two or three times before required for use. *Never think of buying plants in pots;* but choose from the nursery healthy trees, one year cut back, with five or six well-ripened shoots

each. Pot them, in October, in pots suitable to the size of the trees, and plunge the pots at once in the house, giving them but little water during the winter. It would be possible, in many cases, to obtain fruit the first year; but we do not advise this, as it is sacrificing too much in the future to the present. Rather prune back the shoots in spring, allowing four or five eyes to break from each, which, when a few inches long in August, may be stopped back, that is, pruned with the finger and thumb, and these will form fruit-bearing branches for the next year. Great attention should be paid to the temperature and ventilation of the orchard-house. Keep the former as nearly equal as possible, not, however, minding a variation of ten degrees between that of day and night. Ventilation should be constant, except during frost or cutting winds, and most abundant during strong sunshine. A daily syringing will prove beneficial in spring, and liquid manure should be freely given from the time the fruit sets till it reaches full size, when it may be gradually diminished: the plants should, however, never be dry, except in autumn, when sinking to rest, and in winter, when comparatively dormant. Every year, when the leaf changes, and before it falls, each tree should be turned out of the pot, shaking away a good portion of the old soil, re-potting in fresh, and using clean and larger pots if required. What I have here said relates to apples, apricots, cherries, nectarines, peaches, pears, and plums: strawberries, as strong plants as you can procure, may be potted in July, in the same soil.

Vines, if purchased with a single stem, should, unless very strong, be cut down to a single eye, which must be induced to grow as stout as possible, by the stimuli of a rich soil and warm temperature. Ripen the wood well in autumn by sun and drought, and the next year four to

seven eyes may be left, the half of which number will likely produce a bunch of grapes each. So soon as the bunch is seen, stop the fruit shoots, to encourage its development. After the first year, instead of looking to the main stem, you will seek your fruit from the side branches, or spurs, which have been produced by "stopping." One word of caution seems necessary here: do not let your fruit-trees bear too great a crop when young: it is both a present and a future loss. The size and quality of the fruit is deteriorated by it, and the health of the trees often permanently injured.

LETTER XII.

"There is scarcely any earthly object gives me more—I do not know if I should call it pleasure, but something which exalts me, something which enraptures me—than to walk in the sheltered side of a wood, or high plantation, in a cloudy winter day, and hear the stormy wind howling among the trees, and raving over the plain.

ROBERT BURNS.

THE letters hitherto penned have been chiefly occupied with the enunciation of general principles. I will now, with your permission, enter more fully into the details of cultivation, making each season the subject of a separate letter.

Winter and spring may be said to be the working seasons of gardening: summer and autumn the enjoying seasons. I shall confine the remarks of the present letter to gardening in winter—December, January, and February.

Beautiful as is the sentiment placed at the head of this letter, it is too much to expect it shall find an echo in the breast of every comfort-loving Englishman. We turn

instinctively from the howling wind "to the bright faggots," and the "pictured wall." Winter, however, possesses some attractions out of doors: the woods, the fields, the lanes, and the garden, tempt us forth occasionally to view the fantastic snow-wreaths; while at other times the hard path sounding beneath our feet, the bright sun above our heads, and the keen air, are strong inducements to the morning walk, for they raise the animal spirits, and largely promote health. These are the enjoyments of the season; and the garden has its work also in winter. Many of our most beautiful out-door plants require protection against frost, if suffered to remain permanently in the ground. Such are the tea-scented roses, hydrangeas, Fuchias, &c.; and this may be accomplished at least cost by strewing the ground immediately above them with saw-dust, old tan, or leaves, and surrounding the branches with evergreen boughs. This should be done early in December. As the winter advances, pruning, cleaning, manuring, and digging, may be practised to advantage, both among flowers and fruit-trees. This, indeed, is the legitimate work of winter. The walks and lawn may also be beat and rolled in open weather; and thus the work of spring, which, if allowed to accumulate, will at times become oppressive, is in a measure forestalled. It should be remembered, that where a soil is wet or heavy, nothing will improve it more than casting it up in ridges in winter, suffering it to remain in this form till dried and mellowed by the air and frost. It is also an excellent plan, when gardening on such soils, to preserve the prunings and other rubbish which collects in every garden, burning them once a year, and, with them, as much earth as possible, saving the *debris*, which proves a most valuable fertilizer. Turning to our fruit-trees, it is well to protect them, about

mid-winter, as explained at page 63, whether on walls or in the open borders. This will not only shield the embryo blossom from the withering alternations of sun and frost, but secure the dormant buds from the rapacity of bullfinches and other small birds.

But it is to the glass department—the conservatory or greenhouse—we look principally for enjoyment at this season, and a rich fund of it may be held in store there. Such plants as azaleas, rhododendrons, roses, double white and scarlet thorns, hyacinths, tulips, &c., which have been potted and placed in the warm division of the greenhouse in autumn, will now give promise of bloom. As the first flowers expand, they may be removed to the cool greenhouse or conservatory. And here I must not omit to point to a few things which flower in winter and early spring without forcing, merely requiring the warmest place in the plant-house; such as, Poinsettia pulcherrima, so much admired for its scarlet bracts; Euphorbia jacquiniflora, linum trigynum, Gesnera zebrina, some of the Begonias, Stenorhynchus speciosus, some of the Bletias—not forgetting the old Phaius grandiflorus, formerly called Bletia Tankervilliæ—Salvia splendens and amœna, and Chinese primroses. These, although not attractive through sheer novelty, are indispensable to the conservatory. Then there are Camellias, epacrises, early-flowering heaths, daphnes, cyclamens, violets, &c., with which the forced plants will mingle advantageously. Of course, as some of the forced plants are withdrawn from the warm greenhouse, others kept in reserve may be introduced to fill their places, and thus a constant supply of flowers is kept up for the winter months. Permit me to observe here, that plants should never be brought *suddenly* from a high to a low temperature: when ready for removal, they should be shifted to the coldest

part of the warm greenhouse for a day or two, then to the warmest part of the conservatory, and thus gradually accustomed to the change.

Two things are especially necessary to guard against in glass structures during winter—frost and damp. Whether the plant-houses are heated with a flue or hot water, the night temperature should never fall below forty degrees, while the day temperature should range about fifty degrees, except in sunny days, when sixty degrees will not prove injurious. The *less fire-heat employed the better*, so that the temperature be maintained; and a saving both in pocket, and your plants' health, may be effected by covering the glass with mats, or other material, in severe weather, to prevent radiation. To regulate the day temperature in sunny weather, it will be often necessary to give air, which should be done with great caution at this season, for it is most important to avoid drafts or currents. Mildew will sometimes show itself, even under the most skilful management, for which there is no better remedy than dusting the plants affected with sulphur. As a preventive of damp and mildew, it is very desirable in winter to pay close attention to the four following rules:—1. Keep a circulation of air in your houses whenever the weather will allow, avoiding strong drafts and currents. 2. Dry the floor of the house with a mop immediately after watering. 3. Avoid crowding the plants. 4. Remove promptly dead leaves, and other decaying matter, and keep every thing in the house dry and clean. Plants in pots require but little water in winter, and this should be given in the morning: the temperature of the water should also be a degree or two warmer than that of the house. So soon as the flower-buds of roses, geraniums, Fuchsias, and similar plants, begin to swell, their size and beauty may be

increased by watering with weak liquid manure, and water should be given more abundantly to plants in bloom to prolong the season of flowering. The aphis, or green fly, must now, and at all times, be guarded against: filling the house with tobacco-smoke proves an easy and effectual remedy.

The pits containing the plants intended to decorate the garden in summer should be well ventilated on every occasion when the weather is mild and dry. Of course, in frosty weather the lights must not only be closed, but matted, and *even covered with straw if very cold.* As the winter advances (February) such plants may be propagated by taking off the young shoots, and placing them in sandy soil in a dung frame or in the warm division of the greenhouse. If any are growing too tall, it is well to pinch out the points of the shoots, that they may be kept dwarf and compact. Sulphur must also be used here if mildew appear.

The end of winter is a good time to sow tropœolums Maurandyas, lophospermums, and other climbing plants, for covering baskets and trellis through the summer and autumn months. If sown in pots placed in the greenhouse pit, or in a common dung-frame, they may be so far brought forward as to flower the same year, although older plants will flower both earlier and more abundantly.

As at this season of the year there is generally more or less unfavourable weather for out-of-door employment, it is well to seize such opportunities for cutting sticks for tying up and naming plants. "*Double fir laths*" are excellent, rending them lengthwise for sticks for tying, shaving the sharp corners off with a garden knife. Sticks for naming may be cut from the same material, making one side perfectly smooth, rubbing over it white paint

containing a good portion of red lead, and afterwards writing the names with a hard dark lead pencil. I think you will agree with me it adds much to the interest of a garden to see every plant neatly and legibly named.

LETTER XIII.

Oh come! and while the rosy-footed May
Steals blushing on, together let us tread
The morning dews, and gather in their prime
Fresh-blooming flowers. THOMSON.

SPRING is, above all seasons, the time of activity in a garden, and on the judicious employment of time then, depends mainly the aspect of the garden in summer and autumn. Let us first say a few words about the glass structures. These, when covered during winter, will probably have become darkened by the accumulation of dust; and so soon as the covering may be dispensed with, the glass should be washed till it recover its proper transparency. The outside may be cleaned at any time, but a dry mild day should be chosen for attending to the interior. Early in spring is a good time for re-potting the majority of greenhouse plants into larger pots. The potting of plants is a somewhat important proceeding; for on the manner in which it is performed much of the future welfare of the plant depends. Of course, plants widely differing in habits require that some difference be made in the mode of potting; but my space will not allow me to go into the various details; and indeed, with regard to Villa Gardens in general, it is unnecessary. There are a few main points to be kept in view in all potting: these secured, the rest is comparatively unimportant. Thus—

1st. All soils for potting purposes should be in exactly an intermediate state between wet and dry: if any bias, let it be towards the latter, always avoiding any soil of a dusty character.

2dly. When "potting off" plants without any ball, take care to shake the soil carefully in the interstices between the fibres, pressing downwards slightly as the filling proceeds. When, however, potting plants with "balls," commonly termed "shifting," care must be taken to press the new soil with double the pressure of the former: without this precaution, the ball will often remain in a desiccated state: let the applications of water be ever so liberal, it escapes through the loose new compost, and indeed saturates it, to the great injury of the young protruding fibres.

3dly. See that your pots are somewhat concave in the bottom of the interior. In placing the drainage, which is of much importance, do not depend on one crock alone in covering the hole for the escape of water; rather use three or four, not one immediately over the hole, but overlapping each other like the tiles on a building, and thus providing three or four outlets for the escape of water. On two or three crocks of this kind strew a little pounded material composed of crocks and small charcoal, an inch or so in thickness, according to the size of the pots; and finally, strew a little moss, or the fibrous portion of the compost: on the latter place the ball of the plant, without any intervening medium. I do not affirm that this is the only and best way to re-pot, but that it is a certain and simple way for the amateur, and one which the practical gardener would not repudiate. If the person employed to pot the plants be a novice, and is puzzled to know what soil to apply, let him compound the following:

Sandy and fibrous heath soil, two parts; turfy loam,

one part; old leaf soil or *debris* of vegetables, one part; silver sand, one part. Such a compost, well mixed, and chopped fine with a spade, but not riddled, will grow nine-tenths of the plants known in this kingdom.

It must not be assumed that all plants can be re-potted to advantage at once; and the better plan is perhaps to pick out a few at a time as ready, judging them so by the swelling of the buds preparatory to the commencement of a new growth. For Camellias, ericas, Hoveas, and plants of that class, a rich fibrous peat with silver sand is the best compost; for geraniums, Fuchsias, and the like, the right soil is turfy loam and decayed manure, with a slight admixture of sand. At the time of re-potting, the plants should be pruned or stopped where required; and in some instances the old soil may require to be shaken away, and the roots somewhat curtailed. In a well-ordered garden, the soils will have been laid up in the compost yard in separate heaps, some months previously, to ripen, and be ready for use as required. But not only do established plants demand this attention in spring, but those newly struck must also be potted into separate or larger pots, and both young and old should be tied out and trained when potted. Continue propagating, in a frame or the warm division of your greenhouse, such plants as you have a short stock of; harden off such as are wanted for planting out; and fumigate the houses and frames wherever the green fly is seen. Throughout the winter you will have been careful in administering water. Now, when spring growth commences, the quantity must be increased, and this considerably if the weather be sunny. Under the latter circumstance, fire-heat may be nearly dispensed with, as it is better and cheaper to obtain the necessary warmth, when possible, by closing the house early in the afternoon, while

the sun shines on it, and covering with mats during the night. When this plan is adopted, the plants should be syringed freely at the time the house is closed, which will free them from dust, and ensure a moist atmosphere, so favourable to growth in spring. Air should be admitted sparingly in cold weather, but freely under opposite circumstances, and even a little night-air is beneficial in warm weather, a free circulation of air tending to strengthen the plants, and to keep them dwarf and in robust health. Before quitting this subject, a word of caution seems necessary against crowding too many plants in a small space. This is a common error, and productive of evil consequences at all seasons, but especially during the growing period, when, without an abundance of air and light, the plants become feeble and of spindling growth. Thus we see propagating, potting off the young plants when rooted, re-potting the old ones, watering, tying up, and keeping free from insects, make up the chief sum of gardening under glass in spring.

If we direct our footsteps from the plant-houses to the open garden, we shall find plenty of work awaiting us there also. The blossom of fruit-trees, whether on walls or in the borders, will still require protection from frost. Keep them covered at night, and your reward will generally be, a crop of fruit corresponding to the quantity of bloom. Neglect this, and a single frosty night may reduce them to a state of barrenness. As the season advances, some fruits will require thinning; and if insects infest the trees, they should be syringed with soap-suds and tobacco-water. Turning from the fruit to the flower garden, Annuals for summer and autumn flowering should now (March) be sown; the half-hardy kinds on a hot bed, to be transplanted afterwards; the hardy ones in the open borders, where

intended to remain. Though not enough in themselves to constitute an enjoyable garden, they are valuable in adding richness and variety at a trifling expenditure of money and labour. When there are borders of mixed hardy or herbaceous plants, the plants should be divided and replanted in spring, if overgrown or too few in number, and deficiencies caused by the winter's frost should be made up at the same season when the borders are forked over. At this season the transplanting of fruit-trees, shrubs, and evergreens, may be carried on to great advantage, though the latest period at which we would transplant the former is the end of March: evergreens, especially if showery weather, may be removed a month or six weeks later. Pruning roses is best done in November and March. Destroy suckers at the same time, and watch the trees closely afterwards for the removal of the rose-maggot, caterpillar, and green-fly. If no flower is more beautiful, none is more liable to the attacks of insects, and hence the watchfulness required. Shrubs and lawn trees may also be pruned in spring. The firs and their allies, if of good form when bought, will never need the use of the knife, but may be brought into a state of the most perfect symmetry by pinching out the tops of irregular shoots with the finger and thumb.

In April and May, hollyhocks, sweet-williams, and other "biennials," may be planted out to advantage. All fresh-planted things should be watered in dry weather, and frequently hoed, not only for the destruction of weeds, but also to render the soil freely permeable to the air.

But the chief work of spring is the preparation, arrangement, and planting of "bedding plants," and in no single branch of gardening is there a greater scope for the exercise of ingenuity and taste. As in small gardens the objects are viewed more closely than in large ones, it

should be your aim to cultivate plants that will bear *close inspection;* for those which produce the greatest effect in the distance are not always of that character. Still, you may find suitable ones combining both requisites. Secure a sufficiency of clear, brilliant, and striking colours, as scarlet, blue, yellow, white; grow them well; let them be the groundwork of your operations; and the filling up may be beautifully wrought out by the introduction of a few intermediate or neutral shades. As a rule, strong contrasts should be avoided, for they give the garden a spotty and incomplete appearance, although cases may occur, both in trees and flowers, when they may be introduced to advantage. Among various "bedding plants" which you may select to please your taste, or to suit the style of your garden, you certainly cannot dispense with scarlet and variegated geraniums, verbenas of colours, calceolarias, Lobelias, petunias, Fuchsias, heliotropes, phloxes, pentstemons, antirrhinums, and tropœolums. Here you have beauty, variety, and sweetness: you have plants suited for beds, baskets, trellis, and rustic work. Respecting the best period for placing them in the ground, much depends on the season. As planting out is usually a work of time, I would commence about the end of April with the hardiest kinds, as pentstemons, antirrhinums, &c.; leaving the tenderest, as heliotropes, calceolarias, and the like, till the middle of May. *But it is most advantageous to plant when the soil works well,* and in, or immediately before, showery weather: I would wait a fortnight for such, rather than plant during scorching days alternated with freezing nights. It is most important that all propagated or accelerated plants for bedding purposes be "cooled well down," or "hardened off," as it is termed, for some time previous to total exposure. This is one of

the chief secrets of success. Also, that the soil in the beds be thoroughly pulverised and broken up very deep. As to the former, such plants as scarlet geraniums, verbenas, &c., which have been struck in a hotbed or the greenhouse, should be potted off and established in warmth, then transferred to a cold frame or pit in the end of April; and, whilst there, they must be matted up at night, and inured to the open air by putting the lights off on every mild day, and merely tilting them up on harsh days. Finally, in the middle of May the lights may be kept off day and night, and the plants may be turned into the ground about the 24th of the month, even in the dampest locality.

In preparing the soil, it is usual to dig in rich materials abundantly: this is not right for all things. Who admires a bed of scarlet geraniums so choked with rampant foliage as that the blossom is almost concealed? It is far better, with every thing having a like tendency, to depend on depth of root rather than richness; merely introducing a little rich compost on the surface, where it may be well mixed with the soil about four inches in depth. By this practice the plants will make a good start; and as soon as the roots pass through the rich medium, they will enter one averse to grossness, and the flowering habit is speedily induced.

When the plants are planted out, all hard balls should be gently loosened, and the roots set somewhat at liberty, and they should be well watered in. All watering henceforth is best performed between seven and eight o'clock A.M., until the middle of June, when evening watering may be allowed. It is folly to water tender things in early spring in the evening. Water carries away the accumulating ground heat, which it should be the desire of the cultivator to concentrate, not disperse. Besides, if young plants have endured the drought and intense light of a sunny

day, surely they will endure the night, when perspiration is at its lowest point. It is well to guard the young and delicate plants against the attacks of slugs and other insects for a little time after placed in the ground; and as they extend the old, or produce new shoots, peg them close to the earth to induce the emission of new roots, which will cause a still more rapid extension. In situations much exposed to wind it will be necessary to provide some means of defence. Drive a few pegs into the ground in different parts of the beds, and run a line of neat tar-twine a few inches below the heads of blossom, so that it may form a stay, yet not be seen. If you can find leisure to pick off the old blossoms as they decay, before the formation of seeds, you will obtain a quicker and longer succession of flowers.

But here I encroach on the work of summer, which is reserved for consideration in my next letter.

LETTER XIV.

"Here, Piso, have we now arrived, in our walk, at my favourite retreat. This is my bower for meditation, and frequently for reading too. Let us take this seat. Observe how, through these openings, we catch some of the prominent points of the city."

Letters from Palmyra.

It has been already stated, that summer and autumn are the enjoying seasons of gardening. But by this I did not intend to convey the idea that watchfulness and labour cease with the close of spring. On the contrary, it is one of the most delightful features of gardening as a recreation, that there is no idleness in it—no *ennui*. In winter we prepare; in spring we plant and sow, enjoying little, save

by anticipation; in summer and autumn we reap a plentiful reward for past and present labour, in the freshness, brilliancy, and perfumes of the flowers blossoming around us. And it appears to me, that one great charm of gardening consists in the constantly-changing aspect of its objects, which are ever fresh and new, which increase daily in interest and beauty throughout the spring, summer, and autumn, till they arrive at their climax, and pass away at a season when out-of-door amusements have fewest attractions. We are now about to enter on the enjoying season of gardening, and have here to consider summer, including the months of June, July, and August.

It is a matter of *primary* importance to provide a *rolling blind*, to shade the plants under glass when in flower, and a good canvas suitable for this purpose may be purchased for less than sixpence the square yard. Not only will the flowers be larger, and of finer colour by this attention, but they will be retained in perfection for a much longer period. Do not, however, shade until the first flowers are ready to expand, and then only for about four or five hours in the middle of the day. It is not to *exclude* the sun's rays that shading is desirable, but merely to *subdue* them; to prevent the withering influence to which flowers are subjected by the intervention of glass. As the Cape plants (heaths, epacrises, &c.) cease blooming, they should, if at all straggling, be pruned, to keep the growth dwarf and compact. This done, place them in the open air, on the north side of a hedge or wall, on cinder ashes, so far apart that the air and sunlight may pass freely throughout the mass. Be sure they do not want water during the summer months while growing: indeed, they would be greatly refreshed, and their growth promoted, by syringing them early in the afternoon every

sunny day. Above all things, keep them free from insects, by washing or fumigating; and if mildew appear, dust the leaves with sulphur while moist with rain or dew. But there are many plants used to decorate the conservatory—as Camellias, azaleas, rhododendrons, &c.—which require a somewhat different treatment. They should have an increased temperature to grow in when the blooming is finished, to induce the formation of flower-buds for the following year. Place them also as close to the glass as possible; pull off all remnants of flowers to prevent seeding; syringe freely daily till the growth is completed; and then gradually harden them off, and convey them beside their congeners, on the north side of a fence or wall. Now that the plants are all out of doors is the opportunity for thoroughly cleansing the plant-houses and frames, for attending to glazing, painting, and repairs in general. Cuttings of greenhouse plants, pelargoniums, &c., may be now taken and planted in loam and sand in a gentle heat, and potted into single pots as they emit roots. This is the principal work under glass during summer.

But amusement is providing *out of doors*. Bedding plants should be watered, hoed frequently, and pegged down, or tied up, as required, to protect them from wind, and promote growth. Plants in raised baskets and vases will require an extra supply of water; and if the surface of the soil can be covered with moss, it is no waste of labour, as less water is required on account of a diminished evaporation. Hoeing and watering are such beneficial operations at this season, that they may be well made to fill up all spare time. In gardens situate near to large towns a syringe, or garden-engine, is almost indispensable; and a free use of it should be made, both in and out of doors, to cleanse the leaves of the plants of the impurities which

settle on them. No plant will thrive long if the pores of the leaves remain choked up with soot or dust; for under such circumstances the functions of breathing, digesting, and perspiring, are deranged—these transpiring mainly through the agency of the leaf. Weeding and rolling the walks, and mowing the lawn, is suitable work for damp weather; and weeding, breaking the surface of the ground, sweeping, &c., demand your attention when the weather is fine. The rose requires some attention in early summer. The aphis, caterpillar, and maggot, should be keenly sought for, and, where found, destroyed. June and July form the glorious season of the rose. The shoots of the autumnals should be cut back immediately after the first flowering, and the plants may be manured at the same time. Roses may also be budded at this period. Biennials are best sown in summer (July) — hollyhocks, sweet-williams, wallflowers, and the like, in the open borders, and primula sinensis in pots in the greenhouse. The latter, with mignonette and a few others, sown at this season, prove invaluable for ornamenting the conservatory in winter. As the season advances, hollyhocks and dahlias must be thinned out, staked, and watered abundantly. When growing for exhibition, the flowers should be shaded just as they expand, which will both improve and preserve them. Continue nipping over-vigorous shoots of the fir tribe and their allies, when threatening to destroy the balance of the tree. Summer is the time for propagating roses, hollyhocks, pinks, pansies, and many bedding plants, to secure a strong and healthy stock for planting out the following spring. Place ripened cuttings of your roses, hollyhocks, and pansies, under a hand-glass on a north border, or in pots in a cold frame. Scarlet geraniums, verbenas, Fuchsias, and other bedding plants, may be

placed six or eight round the side of a five-inch pot, in a compost of loam, sand, and pulverised manure. Set them in a close frame or pit, shade and keep the leaves moist by sprinkling them for the first fortnight, and you may calculate on a fair proportion becoming healthy and vigorous plants. They may be wintered in a cold frame or greenhouse, taking care to protect them from frost; and when potted off in March, give to each plant a separate pot preparatory to "hardening off" and planting in the ground in May.

The dry weather in summer is an excellent time for laying up your stores of soil for the year. *Loam* should be the turf of an *old* pasture, if attainable, cut two or three inches deep: *peat*, the same thickness of a soil rich in sand, fibre, and decayed leaves: *manure*, an old hot-bed, well knocked to pieces: *sand*, pure, white, and gritty: that from Reigate is the best obtainable near London. These should not be used when fresh gathered, but freely exposed for some months previously to the sun and air.

In the fruit-garden there is but little to do at this season: the fruit should be thinned if the crop is over-abundant. Apple or pear-trees, whether grown flat or round, will occasionally produce shoots of unequal vigour, and the strongest should be bent and tied down in order to preserve the balance of the tree. If insects trouble you here, dust the trees with snuff; and if they do not yield to this treatment, syringe them with soap-suds. The young shoots of peaches, nectarines, and apricots, where too numerous, should be checked by pinching out their points with the finger and thumb, nailing the others to the wall.

As connected with a Villa Garden, the culture of mushrooms is indispensable; and I would fain dispel a prejudice that exists concerning them, which is, that it

requires much practice and skill to grow mushrooms, and that the course to be pursued is an expensive one. Nothing can be more fallacious. I may here observe, that many, very many of the failures to which amateurs are liable, and even some professional growers, are attributable more to a misconception of first principles, than to the want of assiduity. The mushroom is a case in point: two-thirds of the cases of failure arise from over-wrought proceedings, rather than in neglect. Let me observe, then, that fresh horse droppings, from which the longest of the strawy litter has been ejected, is the best material, and that this should be housed before rain has fallen, if possible. Any shed will do to put it in, the object being neither more nor less than to half dry it. In this shed it may be spread abroad for a fortnight, and turned two or three times, when it may at once be built in a bed. Any indoor wall is eligible, and if the place is occasionally a *little* warm in winter, so much the better. It must be trodden hard on the floor eight inches in depth, and a yard in width; and the moment it is made, holes should be bored at a foot apart, and reaching to the very bottom of the bed. These holes are to receive the spawn, and are bored thus deep, to prevent undue fermentation; for overheating is the chief cause of the failures we hear of. In about ten days it will be fit to spawn, the proper period for which is when the heat begins to decline, and the temperature at spawning time may be anywhere from seventy degrees minimum to eighty degrees maximum, observing the latter strictly. Lumps of true spawn, the size of a large walnut, are thrust in each hole, and then the bed may be covered with soil two inches in thickness, the soil being beaten quite firm. The darker the place they are grown in the better; and for a bed to produce through

November, December, and January, I advise that the dung be put in the shed to dry in July, commencing in the early part, and housing some once or twice a week as it comes to hand. The bed, when completed, should be kept constantly covered with clean and fresh long litter, out of which every small particle must be shaken, as such will breed spawn on the surface of the bed, to the great injury of the mushrooms as they form.

But I must not burden you with labour at this season, for the press of work is not necessarily so great as to debar you from the enjoyments now multiplying around you. Are morning and evening your times of greatest leisure? Then are you fortunate, for of all times these are the most enjoyable in a garden. Not that I would reject the cool and delightful repose of the arbour or quiet shade, when the fire king rejoices in the meridian: here, with a friend or favourite author, many happy and profitable hours may be spent. But a garden in the morning possesses many and peculiar attractions, which those only can tell of who have risen to enjoy them. The quiet order of nature, the tameness of the feathered tribe, the freshness of the air, the newness of life visible in every plant as the dew-wrapt blossoms unfold to the warmth of the sun, are so many sources of delight, that in witnessing them one seems to have already lived a pleasant day before the ordinary affairs of life begin. Then, in evening, what a luxury to retire from the moil of business to the quiet and refreshing scenes of one's own garden, where every flower you have tended "breathes abroad its gratitude, and thanks you with its sweets." Each order of mind seems to discover in a garden its own peculiar enjoyments; but it offers a companionship with nature, joyous and exhilarating in its influence over all. And in whatever

branch of gardening the mind may seek for exercise, relaxation, or amusement, you will be distracted by none of the discordant sounds which jar so frequently on the ear of business life, but listen to the gradual swell of a heaven-taught melody, subsiding upon the mind in notes of perfect harmony and peace.

LETTER XV.

"Here stands a warrior clad with crimson; there sits a magistrate robed in scarlet; and yonder struts a pretty fellow that seems to have dipped his plumes in the rainbow, and glitters in all the gay colours of that resplendent arch."—*Hervey's Reflections on a Flower-garden.*

AUTUMN, then, has arrived, and your garden has reached its climax. The fruits of spring labour are now everywhere apparent: your dahlias, hollyhocks, roses, verbenas, geraniums, and the endless variety of plants pressed into use to serve the purpose of varying and adorning the flower-garden, are blossoming in profusion, and in every walk you are greeted with their beauty and fragrance. Long may the ice king delay his visit, that you may not be untimely deprived of the sweets of your paradise! In some seasons, and some situations, the "Bedding plants" are spoilt in September; in others they will continue blossoming till the verge of winter. As we know the winter *will* come, it is well to enjoy the fine season as it passes, and endeavour to preserve the garden neat and attractive as long as possible. The first symptoms of decay will probably arise from the dying off of the annuals, and these should be cleared away so soon as they grow shabby. It is well, after the first warning of slight frost, to pot and remove to a greenhouse or frame such plants as you wish

to preserve, which cannot endure the rigours of an English winter. That fine old-fashioned flower, the Brompton stock—seeds of which will have been sown in July—and dahlias, are of this nature: indeed any plants may be thus treated which are liable to injury from frost, and of which your stock of young plants is insufficient for future purposes. As soon as the "Bedding plants" are destroyed by the frost, they should be cleared away, forking over the beds and borders, and re-filling them with dwarf evergreens—as mahonias, laurestinas, aucubas, hollies, and the like; or some may be sown with hardy annuals, as nemophila, erysimum, Gilia, Collinsia, Clarkia, &c., and others planted with aconites, hyacinths, tulips, crocuses, snowdrops, scillas, hepaticas, polyanthuses, dog-tooth violets, and other dwarf early-flowering plants. It is perhaps, in many cases, a good plan to fix evergreens in the centre of the beds, surrounding them with these flowers; for by so doing you save the appearance of bareness in winter, and awaken nature in full joyousness and beauty at an early period of spring. The beds may be cleared of these winter occupants the middle of May: dug, manured, and refilled with "Bedding plants" as before; and thus, with very little addition of labour, two summers—as regards the show of flowers—may be enjoyed.

We need scarcely remind you that the autumn is an advantageous season for planting evergreens, shrubs, and fruit trees, when required; and unhappy must be the gardener, who, in a year's practice and study, does not discover some scope for improvement. Of course, in selecting trees, it is important that they should be of a character suited to the soil, climate, &c.; as a common tree or flower in a flourishing and healthy state is pleasanter to look on, than one of great rarity and beauty if wasting and sickly.

Again, as to the time of planting, although I prefer the season of early autumn to any, I attach almost as much importance to the state of the ground at the time the work is done, as to this or that month of the planting season. The ground should be sufficiently dry, that the earth may crumble around the roots when filled in; and then, with the exercise of common skill, I should consider the work favourably done.

The falling leaf of autumn will necessitate the frequent use of the broom, to preserve an air of tidiness and repose; and sweeping, mowing, and rolling, are indeed essential operations at all seasons.

Camellias, azaleas, and New-Holland plants generally, will have been already stored away in the greenhouse or conservatory, and should be freely exposed to sunlight and air. If the autumn be mild, it is well, and even desirable, to leave them out, so long as they can be effectually protected from slight frosts and heavy rains.

You are now looking winter in the face, and should prepare to dispel his gloom. Roses, lilacs, azaleas, rhododendrons, Deutzias, and other plants and bulbs, potted preparatory to forcing, should now be removed to the forcing house a few at a time.

It is very desirable to preserve freshness and gaiety within doors when the breath of autumn has tarnished the beauty of the garden without, as it will in some measure reconcile you to the loss of your out-door flowers, and shorten winter. Chrysanthemums, violets, and other plants quoted at page 69, blossom naturally at this season; and autumnal roses, scarlet geraniums, heliotropes, &c., if kept in pots, and the flower-buds plucked off in summer, will now be covered with incipient buds, which the genial atmosphere of the conservatory will induce to expand in

gradual succession, till they are supported by the early forced plants.

Water should be given sparingly to the occupants of glass houses in autumn and winter, except to such as are naturally or otherwise in full and active growth, and abundance of air should be admitted at these seasons, whenever the weather is mild, to counteract the effects of damp. The cuttings of "Bedding plants" made and rooted in summer should also be stored away in early autumn where safe from frost during winter; such as require it being first potted into separate pots. Place them as close to the glass as possible; be sparing of water; give abundance of air. If kept in cold pits, the pots should be plunged in ashes or saw-dust, and a good thick covering—a straw mat for instance—must be always at hand to use as a protection in frosty weather. Cuttings of hardy ornamental trees may also now be taken, and placed in the open ground, or in pots in a cold frame, in a soil composed of equal parts of sand and loam.

In the fruit garden, gathering is the principal work of the season, and this deserves more care and attention than are often bestowed on it. A practised eye may tell by a glance the stage of fitness of a peach or plum; and the pressure of either between the finger and thumb is another ordeal of ripeness. But these are fruits which are usually disposed of at once. Not so with apples and pears; and on the time of gathering these, and their after treatment, depend not only the season, but the quality of the fruit. The test here is the degree of pulling required to separate them from the branch: they should, if ready, drop with a slight twist. After gathering, remove them to a cool room, inaccessible to frost; place them in thin layers to avoid "sweating," which would cause premature ripening; and at all times handle them carefully that they may not be bruised.

LETTER XVI.

"But various are the ways to change the state
Of plants, to bud, to graft, t'inoculate."

Dryden's Virgil, Georgic II.

One topic of great interest in gardening has as yet been scarcely touched upon—Propagation. When gardening is practised on a small scale, there is no economy in propagating your own plants, but there is a pleasure in it, and you may at some time feel disposed to try your hand at this delicate and often critical branch of the art. Various indeed are the means which nature suggests or ingenuity has contrived for the preservation and multiplication of the vegetable kingdom. It seems, however, undesirable to trouble you with a history or description of them all. A better course is open to us. Let us briefly consider and explain the three modes most commonly practised, namely, cutting-making, grafting, and budding, for by one or other of these means nearly all plants are or may be propagated.

What is a cutting? A cutting is a piece of a plant, separated from its parent, and capable of becoming, under certain conditions, a new and independent subject. A primary point is to preserve life in this fragment, until, by the emission of roots, it is in a condition to support itself. Cuttings may be taken at all seasons, but most advantageously in spring and autumn. In spring, the half-ripened wood is preferred, and, by the assistance of glasses and bottom-heat, the rooting process goes on very quickly. In autumn propagation, ripened wood is taken; glass and heat are still occasionally employed, but not generally; and the rooting process extends over a more lengthened period. Spring propagation is most commonly applied to dahlias,

chrysanthemums, various greenhouse plants, and bedding plants, such as verbenas, geraniums, &c. The propagation of the latter, in common with cinerarias and pansies, may be carried on with equal advantage in summer also, at which time roses, pinks, and carnations are in most favourable condition. Autumn propagation is usually preferred for many hardy ornamental trees and shrubs, some of which strike root freely if cuttings of the ripened wood be inserted in the open ground; others should be grafted at this season, or budded in summer. The practice of making and rooting cuttings has been already described in detail.

Grafting.—A graft or scion is merely a cutting inserted in a cleft or on the side of another tree, instead of in the ground. The tree on which it is inserted is called the stock. It is essential for the attainment of ultimate success, that the stock and scion be of a kindred nature. There are various forms of grafting, of which side-grafting and wedge-grafting are the most common. Side-grafting consists in paring the bark and a little of the wood off the side of the stock; the lower end of the scion is then cut in such manner that one side fits exactly upon the pared stock, and the two are then bound together with bast or thread, and covered with clay or grafting-wax, to exclude the air and moisture. Wedge-grafting is similar to the preceding, except that, instead of laying the scion on the stock, the head of the stock is cut off, slit down the middle, and the scion cut in the form of a wedge, and inserted in the crevice.

In all cases of grafting, it is important that the inner bark of the scion lay exactly upon that of the stock, in order that a free intercommunication of sap may take place. Some time after grafting (according to treatment and the nature of the tree) growth will commence, and a gradual swelling

of the stock take place. It is then necessary to remove the ligature which has been used to bind the two together. In out-door grafting, put a stick to each tree when the bast is removed, and tie securely, to protect the grafts from accident by wind: in in-door grafting, guard against sudden exposure to the air, and too great variation of temperature. Fruit-trees, and various sorts of hardy ornamental trees, are usually grafted out of doors: some kinds of the latter, with Camellias, azaleas, &c., it is necessary to manage under glass. Out-door grafting is usually performed in spring: grafting under glass both in spring and autumn. Grafting is a nicer operation than cutting-making, but, when well performed, it offers, in many cases, much greater chances of success. The advantages of grafting over other modes of propagation are, a saving of money and time. There are thousands of common plants in the nurseries raised quickly and at little cost, which form stocks, and, grafted on these, the choicer kinds make large and handsome plants quicker than by any other mode. The real objection to grafted plants is, not *that they are grafted*, but that *unsuitable natures are united*, and hence they ultimately fail. I must admit there is truth here, and that the suitability of stock and scion is not studied and acted upon half so much as it deserves to be.

Budding.—Roses, and many other ornamental trees, also fruit-trees, are advantageously propagated by "Budding." The best time for budding is summer, when the sap is in full flow, and the bark separates freely from the wood. The operation consists in transferring from one tree a piece of bark, containing a dormant bud, and inserting it beneath the bark of another. The piece of bark with the embryo is called the bud, and the tree in which it is inserted, the stock. Thus you see it is somewhat analogous

to grafting. A budding-knife is the only tool required. There are various forms of these, that known as Curtis's is perhaps the best. Let us suppose we have the stock before us in some common sort of tree, which we are wishing to convert into some choicer or more beautiful one, and the branch of the variety also whose identity we wish it to bear. First cut the leaves off this branch, leaving about half an inch of the leaf-stalk to every bud. Now turn to the stock, and make a longitudinal cut about an inch in length, with a cross-cut at the top, the whole forming on the bark the letter T. The knife should be used lightly, so that it does not penetrate deeply into the wood; *through the bark* is all that is necessary. So far done, turn the handle of the knife to the lines traced, running it up and down and twisting it slightly to raise the bark on either side. The stock is now ready for the reception of the bud. Next take the branch from which you wish to obtain it in the left hand, with the lower part towards the finger ends, and commence cutting nearly half an inch behind the bud, passing the knife upwards and under the bud to about the same distance beyond it. Do not cut deeper than to obtain a good piece of bark, and at most a very thin slice of wood. The bud then is severed. Now place it on the bark of the stock, parallel with the longitudinal incision, and with the upper end towards the top of the shoot; raise the bark on the opposite side with the handle of the knife, pushing two-thirds of the bud beneath it with the thumb. Next raise the bark on the other side, and the bud may be pushed under with the handle of the knife, or will drop in. Finally, bind up the wound with bast or worsted. It is a dry and difficult operation as described on paper, but the practice itself is not without interest.

When the bud is firmly united in its new position (which it will generally be in three weeks or a month) the ligature may be removed, and there is an end of care for the present. On the arrival of spring, the shoot which bears the hitherto dormant stranger bud should be shortened to within an inch or less of the cross-cut, and your *protegée* will rapidly rise into a new plant. For a time it may be necessary to watch and remove any shoots that may push into life from the stock or inferior variety on which it is borne. But a complete ascendancy once established, no attempts, or at least very feeble ones, will be made to dispute it. This latter remark is made on the supposition that the stock is of a nature suited to receive and support the stranger. We occasionally observe—as in the case of roses budded on the manettii stocks—that the stock always maintains an excess of power: the stranger rests in security only while supported by the care and watchfulness of its patron, and, on the slightest relaxation of vigilance, is overpowered and destroyed.

LETTER XVII.

"What are the casements lined with? Creeping herbs.
The prouder sashes fronted with a range
Of orange, myrtle, or the fragrant weed."—COWPER.

IT will be no unreasonable thought, if, when viewing some of your choicest plants at their point of highest beauty, you may wish to bring them in closer contact with your home and hearth; and in anticipation of such a wish, I will essay a few remarks on window-gardening.

It will no doubt be generally conceded that plants form

appropriate and elegant objects in the drawing-room; in winter, from the agreeable associations they awaken; and in summer, from the sense of refreshing coolness they convey.

The practice of window-gardening has obtained more in Belgium and France than with us, although, since the introduction of Wardian cases, it has become more fashionable here. The latter, which usually contain ferns, mosses, and the like, however ornamental, require little care and attention, and are not half so interesting as a real window-garden. Where the wish exists there will probably be no end to the contrivances which taste and circumstances will suggest for its attainment. It may even be convenient to place the plants outside the room; in which case two disadvantages—the condensation of vapour on the inner glass and the exhaustion of the leaves by the dry air of the room—are obviated. Perhaps you may not care to do more than bring a few plants from the Conservatory to the dwelling-house when in bloom, replacing them with others when the flowers decay; or you may prefer a perpetual window-garden, which shall be at least green all the year. However it may be, the practices of cultivation accord in the main with those already explained in my letter on the Conservatory and Greenhouse, and to this I would first refer you. But there are special points in window-gardening to which I would briefly direct attention.

The disadvantages to which plants are exposed in dwelling-houses, are, draughts, want of sufficient light and air, a too dry atmosphere, and unfavourable variations of temperature. Fortunately there is no difficulty here but what may be overcome: attention, rather than scientific skill, is the key to success. Above all things, be careful not to expose your favourites to draughts: there is no fear of your

doing this when present with them, and surely no reason for doing so when absent. Light, too, is a highly important agent in the growth of plants, and a first care should be to secure for them the greatest possible amount compatible with your own comfort. Bow-windows possess decided advantages in this respect, but we can hardly expect the windows to be built to accommodate the plants: the latter are usually an after-thought, introduced to ornament the windows. A south or east aspect is most favourable for plants until they begin to flower, when no injury will accrue, and the season of blooming will be prolonged by removing them to a north aspect. Where they are destined to remain in a south window, it is desirable to have at least a canvas blind, that may be drawn down at pleasure to intercept the sun's rays occasionally in the hottest season. In regard to the stage on which window-plants are placed, this of course will be framed according to circumstances. Allow me to suggest, where available, double windows, the space within occupied by a flat table or row of shelves, the lowest close to the window, and each ascending one receding so far that the plants may be conveniently placed, and not overshadow each other. This may be fixed in a water-tight stand, so that water may be given *ad libitum*, without endangering the cleanliness or dryness of the floor of the room. A place of this description, which may be contrived at a trifling expense, is in reality a miniature greenhouse: the dry air of living-rooms is partially avoided, and a continual succession of flowers may be grown; the Chinese primrose, Christmas rose, chrysanthemums, hyacinths, and other bulbs, will bloom in winter; the cineraria and pelargonium in spring and summer; and Fuchsias, roses, and the like, in autumn. To increase the effect, and obtain as many flowers as pos-

sible in a small space, the sides of the walls and ceiling may be trellised and wreathed with climbing exotics, as the large-flowered jessamine, Maurandyas, lophospermums, tropæolums, ipomœas, passion-flowers, &c.

But perhaps you will tell me this is window-gardening on rather a large scale, and I grant you every one may not be disposed to follow it out so far. Oftener, perhaps, a favourite plant will be introduced, the pot placed in a pan or china saucer on the window-sill. In such cases, never suffer the water which drains from the pots after watering to remain in the pans to be re-absorbed from below.

It is perhaps scarcely necessary to repeat here that rain or pond-water of the same temperature as the room should be used in window-gardening, and an occasional syringing or sprinkling the plants over the foliage will prove highly beneficial. The practice of watering is perhaps one of the most critical in gardening. The question is continually asked by those who have not made the cultivation of plants their study, "How often should plants in pots be watered?" If a direct answer be insisted on, it may be said "Almost daily in the summer, and once or twice a week in winter." But you, I am sure, will bear with me while I explain why a satisfactory answer cannot be directly given, and endeavour to place the inquirer on a safer and more intelligible basis. First let me say, then, that plants differ so much in their nature and constitution, that no general rule will apply; and next, that the seasons and circumstances with which they are surrounded vary so much as to require the continual exercise of the judgment. In regard to seasons, in winter, when plants are in a state of comparative rest, they require very little water—deciduous and succulent plants none: in spring, when growth is more rapid and light increases, more is required: in summer, or whenever

plants are in the most vigorous state of growth, the greatest quantity should be given: in autumn a decrease is again desirable. Although the soil of pot-plants should be dry in winter, moist in spring, wet in summer, and moist again in autumn, it should be maintained in as equable a state as possible during each season, and throughout the year the widest range should not approach the extreme alternations of "dry as dust," and "wet as mud." Watering should also be regulated by the nature and constitution of the plant. As a general rule, plants with highly-absorbent roots and large porous leaves require the most water, and those of an opposite nature the least. Other points to be taken into consideration are the mechanical properties of the soil and the state of the weather.

It is well known that evaporation goes on with greater rapidity in some soils than in others, and usually fastest in hot weather. The proper use of the water-pot can best be obtained by observation and practice. A plant or two in a window immediately and constantly under the eye will often teach quickly many things which might otherwise be a long time in making themselves known to us.

Excessive or sudden variations of temperature should be guarded against in window-gardening, for which purpose a woollen curtain (removable at pleasure) may be arranged to draw between the window and the plants at night, and in severe weather a lamp or fire may be necessary. Fading leaves and flowers should be kept constantly removed, not only for the sake of cleanliness and neatness, but because advantageous also to the health of the plants. Abundance of air should be given in favourable weather, to remedy the disadvantages of a dry atmosphere. Sponging the leaves occasionally, and keeping the surface of the soil loose, are also trifles of high importance. Where convenient to place the

plants out in the air, this should be done in mild weather, and especially when gentle rain is falling. Care should be taken that they do not suffer for want of pot room, although it is quite possible, especially with plants of luxuriant habit, to err on the opposite side, and obtain as a result more foliage than flowers. Perhaps it is the best plan to keep them in rather smaller pots than under ordinary circumstances, plunging them in damp moss to prevent a too rapid exhalation of moisture from the pot and soil; or, when this is not convenient, placing the pot inside a larger one, filling up the intervening space with moss. In window-gardening, the aphis or green fly is a pest of no mean order, and on no account neglect to remove or destroy this and every other insect intruder that may from time to time visit you. The well-known remedy of tobacco smoke is most effectual; but as you will likely object to the after disagreeableness of the "noxious weed," I can offer no better substitute than syringing the plants with a tolerably strong infusion of quassia.

You will doubtless have observed that window-plants almost invariably bend towards the light. This is a defect which cannot well be remedied. It is often attempted, but not accomplished, by turning the plants frequently; with light falling from one side only you will scarcely obtain other than one-sided plants.

I have often observed hardy plants placed on balconies without the protection of glass, and the effect is by no means inelegant. Cases may exist where the cost of glass is an obstacle, or where these hardy plants are deemed more appropriate. Flowering shrubs and herbaceous plants are best suited for this purpose—rhododendrons, ribes, Deutzias, Persian lilacs, delphiniums, phloxes, and the like.

Thus far on the culture of window-plants, in which there are so many failures and so few successes. How is this? A fair exposition of principles is now before you, and how small the difficulties which appear to lie in the way! But it must be told, the real difficulty usually exists in the source whence most window-gardeners draw their supplies. There are always travelling about the country certain itinerant gardeners, vendors of plants beautiful to the eye, but which have been developed under circumstances which fit them only for the care of the most skilful gardener, into whose hands they unfortunately seldom or never pass. How different the result might be were hardy-constitutioned plants substituted for these over-excited beauties I need not now stop to explain. I must not occupy your time further on a subject of so small a range, than to express my conviction that the inmate of the humblest cottage in Britain may derive untold pleasure from window-gardening. If the situation be so unfavourable that the tenderer plants will not thrive, let him adopt the box-tree and the aucuba for his window-sill, and the lysimachia and ivy for his wreaths; and he may rest assured that ordinary attention and common-sense treatment will result in successful cultivation.

LETTER XVIII.

"What have we here? A man or a fish?"

The Tempest.

You ask me for some guide by which you may obtain those varieties of trees, flowers, and fruits, most suitable for a Villa Garden, and perhaps I cannot better conclude this

series of letters than by offering a list of such. You may probably see at the flower-shows and elsewhere, flowers of richer and more imposing beauty than those I shall recommend; but this must not lead you to infer that they would be better suited for your purpose. Many of the most beautiful flowers are the most delicate, and such are often unsuited for general culture; and again, only a few of the most skilful cultivators usually exhibit. I do not doubt you might yourself become a successful exhibitor if you have the inclination, and are willing to devote to it the necessary time; but until you are prepared to do this, cultivate the hardy free-growing flowers (for all are beautiful) that will flourish under ordinary care, rather than those tender, lovely, fleeting things which will languish and perish except under the most attentive treatment. On these grounds I have made the following selections, which I now submit for your approval.

Before, however, offering this selection, I would advert to a feature in the lists which may momentarily puzzle you with its apparent incongruity. You will speedily discover that one portion of the plants which follow have their popular titles; in other words, those every-day names which, through a kind of conventional understanding, the public has stamped with its approval. A second class, it will be observed, bear their botanical names only because they cannot easily be brought to this popular standard. It is interesting further to observe, that in some cases the specific appellation at once points to the character of the plant or tree. I have deemed it necessary to direct attention to this fact, which, unexplained, might lead you to attribute to indifference what has been a matter of intention, preferring, in familiar correspondence, the use of the popular names as far as possible, while acknowledging the value of botanical nomenclature.

EXPLANATION OF ABBREVIATIONS USED IN THE DESCRIPTION OF TREES AND SHRUBS.

First Column—Size: L. large, M. medium, S. small.
Second Column—Habit: Col. columnar, Rig. rigid, F. free, Pend. pendulous, Pros. prostrate.
Third Column—Colour of leaves: Pur. purple, Dk. dark green, Lt. light green, Go.gold, Sil. silver.
Fourth Column—Character of leaves: Lin. linear, Simp. simple, Comp. compound.
For fuller explanation of these terms, *see page* 20.

TREES AND SHRUBS.

	Size.	Habit.	Colour.	Leaves.
*Juniperus squamata	S	Pros.	Lt.	Lin.
* sabinioides, or Carpet Juniper	S	Pros.	Sil.	Lin.
* virginiana, or Red Cedar	M	Col.	Lt.	Lin.
*Thuia orientalis, or Chinese Arborvitæ	M	Col.	Lt.	Simp.
*Thuia occidentalis, or American Arborvitæ	L	Col.	Lt.	Simp.
*Thuia Wareana, or Ware's Arborvitæ	M	Col.	Lt.	Simp.
*Chamæcyparis sphæroidea variegata, or variegated White Cedar	M	Col.	Go.	Simp.
*Picea pectinata, or Silver Fir	L	Rig.	Dk.	Lin.
*Abies canadensis, or Hemlock Spruce	L	Free	Lt.	Lin.
*Pinus austriaca, or Austrian Pine	L	Rig.	Dk.	Lin.
*Taxus baccata (the Yew)	L	Free	Dk.	Lin.
* fastigiata, or the Irish Yew	M	Col.	Dk.	Lin.
Acer pseudo-platanus foliis purpureis, or the Purple Maple	L	Free	Pur.	Simp.
Æsculus hippocastanum, the Horse-Chestnut	L	Rig.	Dk.	Comp.
Amelanchier botryapium, the Snowy Mespilus	L	Free	Lt.	Simp.
Amygdalus communis, or the Almond	L	Free	Lt.	Simp.

	Size.	Habit.	Colour.	Leaves.
*Arbutus, in varieties, or the Strawberry-tree	M	Rig.	Dk.	Simp.
*Aucuba japonica, or Spotted Laurel	M	Rig.	Go.	Simp.
*Berberis asiatica	M	Free	Lt.	Simp.
* dulcis	M	Free	Lt.	Simp.
vulgaris, or common Berberry	M	Free	Lt.	Simp.
vulgaris fol. purp., or Purple-leaved Berberry	M	Free	Pur.	Simp.
Betula laciniata, or Cut-leaved Birch	L	Pend.	Lt.	Simp.
Bupleurum fruticosum	S	Free	Sil.	Simp.
*Buxus, in varieties (the Box)	M	Rig.	Var.	Simp.
*Ceanothus pallidus	M	Free	Lt.	Simp.
*Cerasus laurocerasus (the Laurel)	M	Free	Lt.	Simp.
* lusitanicus (the Portugal Laurel)	M	Rig.	Dk.	Simp.
Cornus alba (Dogwood) twigs red	S	Free	Lt.	Simp.
*Cotoneaster marginata	S	Pend.	Lt.	Simp.
* microphylla	S	Pend.	Dk.	Simp.
* thymifolia	S	Pend.	Dk.	Simp.
Corylus Avellana, fol. purp. (the Purple Nut)	M	Free	Purp.	Simp.
Cratægus, in varieties (the Thorn)	M	Free	Var.	Simp.
Cydonia japonica (the Japan Quince)	S	Free	Lt.	Simp.
Cytisus albus (the white Broom)	S	Free	Lt.	Simp.
laburnum	M	Free	Lt.	Comp.
*Daphne pontica	S	Rig.	Lt.	Simp.
mezereum (the Mezereon)	S	Rig.	Lt.	Simp.
Deutzia scabra	S	Free	Lt.	Simp.
gracilis	S	Free	Lt.	Simp.
Fagus sylvatica, fol. purp. (the Purple Beech)	L	Free	Purp.	Simp.
macrophylla	L	Free	Dk.	Simp.
*Garrya elliptica	M	Rig.	Dk.	Simp.
Hippophae rhamnoides fœmina	M	Rig.	Sil.	Simp.
*Ilex, in varieties (the Holly)	L	Rig.	Var.	Simp.
*Laurus nobilis (the Bay)	M	Col.	Dk.	Simp.
*Ligustrum, in varieties, (the Privet)	M	Free	Dk.	Simp.
Liriodendron tulipifera (the Tulip-tree)	L	Free	Lt.	Simp.
*Mahonia, in varieties	S	Free	Var.	Comp.
*Pernettya mucronata	S	Rig.	Dk.	Simp.

	Size.	Habit.	Colour.	Leaves.
Philadelphus coronarius fol. var.	S	Free	Go.	Simp.
*Phillyrea media	M	Rig.	Dk.	Simp.
Platanus, in varieties (the Plane-tree)	L	Free	Lt.	Simp.
Populus, in varieties (the Poplar)	L	F	Var.	Simp.
Pyrus aucuparia (the Mountain Ash)	L	Free	Lt.	Comp.
Quercus elegantissima	M	Free	Sil.	Simp.
cerris variegata	L	Free	Go.	Simp.
coccinea (the Scarlet Oak)	L	Free	Var.	Simp.
* ilex, in variety (the evergreen Oak)	M	Free	Dk.	Simp.
nigra (the Purple Oak)	L	Free	Purp.	Simp.
Ribes (the flowering Currant) aureum	S	Free	Lt.	Simp.
albidum	S	Free	Lt.	Simp.
sanguineum	S	Free	Lt.	Simp.
*Ruscus racemosus	S	Free	Lt.	Simp.
Sambucus nigra (the Elder)	M	Free	Lt.	Comp.
fol. aureis	M	Free	Go.	Comp.
Santolina chamæcyparissus (Lavender Cotton)	S	Rig.	Sil.	Simp.
Shepherdia argentea	M	Free	Sil.	Simp.
Spartium junceum (the Yellow Broom)	M	Rig.	Dk.	Simp.
pallidum	S	Free	Lt.	Simp.
Spiræa, in varieties	S	Free	Lt.	Simp.
Symphoricarpus racemosus (the Snow-berry)	S	Free	Lt.	Simp.
fol. variegatis	S	Free	Go.	Simp.
Syringa, in varieties (the Lilac)	M	Free	Lt.	Simp.
Tilia, in varieties (the Lime)	L	Free	Lt.	Simp.
*Ulex Europæa, fl. pl. (the Double Furze)	S	Free	Dk.	Lin.
Ulmus campestris (the Elm)	L	Free	Dk.	Simp.
fol. variegatis	L	Free	Sil.	Simp.
fol. purpureis (the Purple Elm)	L	Free	Purp.	Simp.
Viburnum opulus (the Guelder Rose)	M	Free	Lt.	Simp.
* tinus (the Laurustinus)	S	Free	Lt.	Simp.
Weigela rosea	S	Free	Lt.	Simp.
*Yucca, in varieties	M	Rig.	Lt.	Simp.

[*Purpose and Culture.*—Ornamental trees and shrubs, suited to live continually in the open air, for forming belts,

groups, or plantations: the kinds marked thus * are "evergreen;" the others lose their leaves on the approach of winter. The ground should be well prepared by trenching and manuring before they are planted. Whether planted as single specimens, belts, groups, or plantations, they require occasional pruning; not that artistic cutting and trimming which reduces the pleasing variety of nature to a tiresome sameness, making every tree the exponent of but one idea; but a judicious handling of the knife to assist the varied forms in their natural mode of growth. This should be done in winter, because a time of leisure; and if done annually, from a young state, the pruning-knife is the implement used: a saw or bill will rarely be required. In some plantations, where trees have lost their lower branches and the ground is bare, it may be covered with ivy, which will form a mass of verdure beneath, and, if permitted, enliven the trunks also with its picturesque beauty.

There is great scope for the exercise of taste in planting, by the judicious arrangement of the various heights, forms, and tints; and a charming effect may be thus produced by those possessing a knowledge of the individual trees employed. See pp. 22, 23.]

EVERGREENS, TO STAND SINGLY ON LAWNS.

	Size.	Habit.	Colour.	Leaves.
Juniperus (the Juniper) oblonga pendula	S	Pend.	Lt.	Lin.
hibernica	M	Col.	Lt.	Lin.
recurva	M	Pend.	Sil.	Lin.
Chinensis	M	Col.	Lt.	Lin.
thurifera	M	Col.	Lt.	Lin.
excelsa	M	Col.	Lt.	Lin.
fragrans	M	Col.	Sil.	Lin.
Bedfordiana	S	Col.	Lt.	Lin.
communis pendula	M	Pend.	Lt.	Lin.
ericoides	S	Col.	Dk.	Lin.

	Size.	Habit.	Colour.	Leaves.
Thuia (the Arborvitæ) aurea	S	Rig.	Go.	Simp.
Cupressus (the Cypress) Lambertiana	L	Free	Dk.	Lin.
Cryptomeria (the Japan Cedar) japonica	L	Rig.	Lt.	Lin.
Picea (the Silver Fir) nobilis	L	Rig.	Lt.	Lin.
Nordmanniana	L	Rig.	Dk.	Lin.
pinsapo	L	Rig.	Lt.	Lin.
Abies (the Fir) Douglassii	L	Free	Lt.	Lin.
alba glauca	M	Rig.	Sil.	Lin.
orientalis	S	Rig.	Lt.	Lin.
excelsa variegata	L	Free	Sil.	Lin.
stricta	S	Rig.	Lt.	Lin.
monstrosa	L	Pend.	Lt.	Lin.
Cedrus (the Cedar) deodara	L	Pend.	Var.	Lin.
Atlantica	L	Rig.	Lt.	Lin.
Libani	L	Rig.	Lt.	Lin.
Pinus (the Pine) cembra	L	Col.	Dk.	Lin.
Ayacahuite	L	Rig.	Lt.	Lin.
Lindleyana	L	Rig.	Dk.	Lin.
insignis	L	Free	Dk.	Lin.
strobus nivea	L	Free	Sil.	Lin.
pyrenaica	L	Rig.	Lt.	Lin.
Araucaria imbricata	L	Rig.	Dk.	Simp.
Podocarpus coriacea	S	Col.	Dk.	Simp.
Cephalotaxus Fortunii	M	Rig.	Lt.	Simp.
Taxus (the Yew) fastigiata	M	Col.	Dk.	Lin.
foliis aureis (the Golden Yew)	M	Col.	Go.	Lin.
elegantissima (the Silver Yew)	S	Col.	Sil.	Lin.
adpressa	M	Free	Dk.	Simp.
Arbutus (the Strawberry-tree) Croomii	M	Rig.	Dk.	Simp.
Garrya elliptica	M	Free	Dk.	Simp.
Ilex (the Holly): aquifolium, fol. aur. (the Golden Holly)	L	Rig.	Go.	Simp.
fol. arg. (the Silver Holly)	L	Rig.	Sil.	Simp.
nobilis	L	Rig.	Dk.	Simp.
Laurus (the sweet Bay) nobilis	L	Rig.	Lt.	Simp.
Quercus (the evergreen Oak): ilex latifolia	M	Rig.	Dk.	Simp.
Fordii	M	Col.	Dk.	Simp.
Ulex Europæa (the double Furze)	S	Free	Lt.	Simp.

	Size.	Habit.	Colour.	Leaves.
Yucca gloriosa	S	Rig.	Lt.	Simp.
Kalmia latifolia	M	Rig.	Lt.	Simp.
Rhododendrons, standards . . .	M	Rig.	Dk.	Simp.

[*Culture.*—All evergreens. See remarks on trees and shrubs, remembering that such of these as are cone-bearing plants (Conifers) require no manure.]

WEEPING TREES, PROPER TO GROW SINGLY ON LAWNS.

Betula (the Birch):
nigra pendula.
Cratægus (the Thorn):
oxyacantha pendula.
Cytisus (the Broom):
falcatus.
purpureus elongatus.
Pyrus (the Pear):
salicifolia.
Robinia (the Acacia):
inermis pendula.
Ligustrum (the Privet):
vulgare variegatum.
*Cotoneaster marginata.
* microphylla.
Cerasus (the Cherry):
semperflorens.
*Ilex (the Holly):
aquifolium pendulum.
Salix (the Willow):
caprea pendula.
Americana pendula.

[*Culture*—See Trees and Shrubs.]

AMERICAN PLANTS.

*Andromeda, in varieties, white.
Azalea aurantia, orange scarlet.
autumnalis, blush pink.
coccinea, scarlet.
early blush.
early pink.
pontica, yellow.
ambrosia, red, orange blotch.
aurantia elegans, orange buff.
Emperor of Russia, pink, fawn blotch.
Gloire de Verschaffeldt, orange yellow.
Julius Caesar, dark crimson.
Marie Dorothée, white shaded.
Prince Henri, pink, yellow blotch.
Princesse d'Orange, orange yellow.
Reine d'Angleterre, pink, orange blotch.
Louise, salmon, yellow blotch.
Rosea rotundifolia, rosy buff, yellow blotch.
Triomphe de Royghem, red, yellow blotch.
*Erica, in varieties,
(the hardy Heath).
*Empetrum nigrum, white.
*Gaultheria procumbens, white.
Shallon, white.
*Kalmia latifolia, white and pink.
*Ledum, in varieties, white.
*Rhododendron
album elegans, white, green spots.
amœnum, white.
atrorubrum, rosy crimson.
atrosanguineum, blood red.
bouquet de Flore, light rose, nicely marked.

Rhododendron, Blandyanum, deep crimson.
blatteum, large rosy lilac.
delicatissimum, blush, changing to white.
erectum, good rose.
Everestianum, lilac, spotted and fringed.
Hendersonii, rosy crimson.
Lindsayanum, brilliant scarlet rose, very much spotted.
maculatum purpureum, large purple, spotted.
grandiflorum, fine large purple.
nivaticum, white, yellow eye.
leopard, rosy lilac, chocolate spots.
pictum, white, spotted.
ponticum coccineum, fine scarlet.
soleil d'Austerlitz, magnificent scarlet.
Towardianum, rosy lilac.
Venus, fine blush.
Victoria, claret.

[*Purpose and Culture.*—The best of plants, both for single specimens or clumps on lawns. Rhododendrons which produce the most brilliant and showy blossoms possess also the valuable property of being evergreen.

All American plants thrive best in a peat or bog soil; and, where such is not, the natural soil should be removed to the depth of eighteen inches, and replaced with peat. (See Letter VI.)

WALL PLANTS.

Aristolochia sipho, yellowish brown.
*Benthamia fragifera, yellowish, handsome fruit.
Bignonia (the Trumpet-flower) radicans major, crimson.
*Ceanothus azureus, blue.
Clematis azurea grandiflora, blue.

Clematis montana grandiflora, white.
Sieboldtii, white and purple.
Chimonanthus fragrans, yellow.
*Cratægus pyracantha, white, producing red berries in winter.
*Escallonia macrantha, rose.
Forsythia viridissima, greenish.
*Grevillea sulphurea, sulphur.
Jasminum nudiflorum, yellow.
Kerria (the Cock-rose) japonica, yellow.
Magnolia conspicua, white.
* grandiflora, white.
*Rhamnus alaternus.
* foliis aureis.
* argenteis.
Wistaria sinensis, lilac.

[*Purpose and Culture.*—Thriving best against a wall or palings cultivated as "Climbing plants." They should be pruned and manured annually, and the shoots nailed to the wall as they grow. Those marked thus * are evergreen.]

CLIMBING PLANTS

Ampelopsis hederacea, scarlet foliage in autumn.
(The Virginian Creeper).
Atragene austriaca, blue.
Sibirica alba, white.
Clemmatis flamula, white.
Hendersonii, blue.
*Hedera (the Ivy).
new Irish.
silver striped.
Rægneriana.
palmata.

Jasminum officinale
(The White Jessamine)
Lonicera (the Honeysuckle).
Magnevillea, cream and red.
flexuosa, cream and red.
*Rubus (the Bramble)
fruticosus foliis variegatis, white.

[*Purpose and Culture.*—For covering poles, trellis-work, fences, walls, rock-work, &c., thriving well in an ordinary soil enriched with manure. Those marked thus * are evergreen.]

EARLY FLOWERING BULBS FOR FLOWER-GARDEN.

	Colour	Ht. ft.	Month of flowering.
Hyacinths in variety	var.	¾	2-4
Narciss Polyanthus in variety	var.	1	3-4
dwarf	yel.	½	3-4
incomparable	yel.	1	4-5
Poet's	wt.	1	4-5
double white	wt.	1	4-5
Tulips, single Van Thol, in variety	var.	½	3-4
double ditto	y. & br.	½	3-4
Tourn Sol	red & y.	½	3-4
Thomas Moore	buff	¾	3-4
Standard	wt.& red	¾	4
Lac Van Rhyn	sct.&wt.	¾	4
Jonquils, double	yel.	1	3-4
single sweet-scented	yel.	1	3-4
Iris, Persian	br.& yel.	½	3
tuberous-rooted.	grey&br.	¾	3
Crocus, in variety	var.	½	2-4
Anemone, single and double, in variety	var.	¾	2-5
Ranunculus, turban, in variety	var.	½	4-5
Squill, Italian.	bl.	¾	4-5
white two-leaved	wt.	¼	2-4
Winter Aconite	yel.	¼	1-2
Snowdrops, double and single	wt.	½	2-3

	Colour	Ht. ft.	Month of flowering.
Fritellary, in variety	var.	¾	4-5
Dog-tooth Violets purple and white	pur. & wt.	¼	3-4
Crown imperials, red and yellow	red & yel.	2	3-4
Canadian Bloodwort, or Sauguinaria Canadensis	wt.	¼	3

[*Purpose and Culture.*—Very valuable, because enlivening the garden at the cheerless season when so few flowers venture to appear. Many may remain permanently in the ground; others should be taken up in summer, stored away in a dry cool place, and re-planted late in autumn. They flourish in ordinary garden soil.]

HARDY AND HALF-HARDY ANNUALS

	Colour	Ht. ft.	Month of flowering
*Aster, German, in variety	var.	1	7-9
Bartonia aurea	yel.	1½	7-9
*Cacalia coccinea	sct.	1	7-8
*Calandrinia discolor	rose	1	7-8
*Calliopsis tinctoria.	yel. & br.	2	7-9
atrosanguinea	dk. cr.	2	7-9
Drummondii	yel.	1½	7-9
*Campanula Loreii.	bl. & wt.	¾	6-8
Candytuft, in variety	w. p. & c.	1	6-9
Clarkia pulchella	rosy pk.	1½	7-8
alba	wt.	1½	7-8
Collinsia bicolor	wt. & bl.	1	6-7
Convolvulus minor, new dark.	pur.	1	7-10
* major	var.	cl.	7-10
*Elichrysum macranthum	wt.	2	8-10
bracteatum	yel.	3	8-10
Eschscholtzia crocea	or.	1	6-8
Erysimum Perofskianum	or.	1½	6-8
Eutoca viscida	bl.	1	7-8
Godetia rubicunda.	lt.pk.&rd.	1½	6-9
Jacobæa, double crimson	cr.	1	7-8
Larkspur, tall double branching	var.	2	7-9
dwarf rocket	var.	1	7-8

	Colour	Ht. ft.	Month of. flowering
Love lies bleeding	red	1	7-8
Lupinus Hartwegii	bl. & wt.	2	7-9
nanus	bl.	¾	7-9
Cruickshankii	bl. y. & wt.	3	7-9
Lupins, yellow	yel.	1	7-8
Malope grandiflora	cr.	2	7-8
*Marigold, African	or. & lem.	2	7-9
* French striped, &c.	var.	2	7-9
double ranunculus	or.	1	7-9
Mignonette		1	6-8
Nasturtiums, dark and orange	dk. cr & or.	tr	6-9
Nemophila, atomaria	wt. & bk.	½	6-8
insignis	bl.	½	6-8
maculata	spotted	¾	6-8
*Nolana atriplicifolia	bl. & wt.	tr.	6-9
Œnothera Drummondii	yel.	2	6-8
Poppy, Marseilles	var.	2	7-8
carnation	striped	2	7-8
Peas, sweet, in colours	var.	cl.	7-9
*Phlox Drummondii	sct & var.	1½	7-9
*Saponaria calabrica	pk.	½	7-9
*Sphenogyne speciosa	yel. & dk.	1	6-8
*Stocks, Ten-week or German	var.	1	6-9
*Sultan, sweet, various	pur. & wt.	2	7-9
*Viscaria oculata	rose & dk.	1	7-9
Venus' looking-glass, various	wt. bl. & li.	1	7-8
*Schizanthus pinnatus	pk & wt.	1	7-8
*Chrysanthemum, golden and tricolor	yel. & wt.	1½	7-8
*Marvel of Peru, in variety	var.	2	7-9

Purpose and Culture.—Beautiful flowers, best suited for out-of-door culture, flowering in masses, but mostly for a short period only. The kinds marked thus * should be sown on a gentle hot-bed, or in pots in a frame, in March, and afterwards pricked out where intended to flower. The others may be sown in autumn to stand the winter and flower in spring, or in spring to flower in

summer where sown. Annuals are cheaply and easily produced, and add greatly to the brilliancy and finish of a garden in spring and summer.

HARDY BIENNIALS.

	Colour	Ht. ft.	Month of flowering.
Antirrhinum majus, in variety	var.	1½	5-8
Canterbury Bell, various	wt. & bl.	2	7-8
Dianthus hispanicus.	red	1	6-8
Dianthus Gardnerianus	rose	2	6-8
Foxglove, in variety.	var.	3	6-8
Polyanthus	var.	½	4-5
Stock, Brompton	var.	2	7-8
queen	var.	1½	7-8
intermediate.	cr.	¾	4-6
Wallflower dark	cr.	1	4-6
Lychnis chalcedonica	sct.	1½	6-8
Delphinium sinensis.	bl.	1	6-8
Auricula, alpine, in variety	var.	½	4-5
Catananche cœrulea.	blue	1½	7-9
bicolor	blue & wt.	1½	7-9
Heartsease, or Pansy, in variety	var.	½	5-9
Hollyhocks, in variety	var.	6	8-9
Sweet William, in variety	var.	1	6-8

[*Purpose and Culture.*—Useful for the same purposes as "Annual," "Hardy Perennial," and "Bedding Plants." Should be sown in an open border in July, and transplanted to the places where intended to flower in the months of September or April following.]

HARDY PERENNIALS.

Aconitum, bicolor	wt. & bl.	3	7-8
Alstrœmeria aurea	or.	2	7-8
Alyssum saxatile	yel.	½	3-4
Anchusa paniculata	bl.	3	5-6
Anemone japonica	red	2	8-9
Antennaria arenaria	yel.	½	6

	Colour	Ht. ft.	Month of flowering.
Aquilegias, in variety	var.	1½	5-6
Asphodelus ramosus	wt.	2	5-6
Aster cassiarabicus	bl.	1½	9
Novæ Angliæ ruber	red	4	9-10
Campanulas, of sorts	var.	1 to 3	6-8
Cheiranthus Marshallii	yel.	½	4-5
Commelina tuberosa.	bl.	2	8-9
Delphiniums, in variety	bl.	1½ to 4	6-8
Dictamnus fraxinella	red	1½	6
Dilyetra spectabile	pk.	1½	4-7
Dodecatheon Meadia	pk.	1	5-6
Erigeron philadelphicum	pk.	1½	6
Gaillardia Wellsiana	yel. & br.	1	7-9
Gentiana acaulis	bl.	½	4-5
Geranium phæum (double)	pur.	1½	7-8
Geum coccineum Eversii	sct.	2	5-7
Helleborus niger	wt.	½	11-1
Hepatica triloba, in variety	var.	½	3-4
Hesperis matronalis alba plena.	wt.	1½	6-7
Iberis sempervirens	wt.	½	4-7
Iris germanica, in variety	bl. &c.	2	6-7
Lathyrus, in variety	var.	cl.	6-9
Lilium longiflorum	wt.	1	7-9
lancifolium, in variety	var.	3	7-9
tigrinum	red	2	7-8
Lupinus polyphyllus albus	wt.	3	6-7
Foxii	pur. & wt.	1½	5-7
Lychnis chalcedonica, in variety	sct. & wt.	2	7-8
Lythrum roseum superbum	rose	3	7-8
Matricaria grandiflora	wt.	1	6-9
Mimulus rivularis, in variety	var.	1	5-9
Œnothera macrocarpa	yel.	½	6-9
Pæonia Whitleii	wt.	2	6
officinalis rubra plena	red	2	6
Papaver bracteata	sct.	3	6-7
Pentstemon, in variety	var.	1 to 3	7-9
Phlox, in variety	var.	1 to 3	6-9
Polemonium reptans	bl.	2	6-7

	Colour	Ht. ft.	Month of flowering.
Potentillas in variety	var.	2	6-8
Pulmonaria virginica	bl.	½	3-4
Pyrethrum Marshallii	wt.	3	9-10
Ranunculus acris plenus	or.	1½	5-6
amplexicaulis	wt.	1	4-5
Rudbeckia Newmanii	yel.	2	8-9
Spiræa filipendula plena	wt.	1½	7-8
venusta	pk.	2	7-8
Statice latifolia	bl.	1½	8-9
Thermopsis fabacea	yel.	2	6-7
Trollius giganteus	yel.	1	5-6
Valeriana rubra	red	1½	6-7
Veronica latifolia	bl.	1	5-6
Thalictrum aquilegifolium	pur.	2	5-6

[*Purpose ank Culture.*—Plants growing permanently in the open air: valuable specially on account of the pleasing variety they introduce to a garden, owing to their widely differing aspect and character. Easy of culture, growing in common garden soil.]

ROSES.*

Aimée Vibert, P. white.
Armosa, P. pink.
Baronne Prevost, P. rose.
Blairii, No. 2, S. white, pink centre.
Blanchefléur, S. cream, white edges.
Boula de Nanteuil, S. dark maroon.
Bouquet de Flore, P. rosy carmine.
Brennus, S. crimson.
Caroline de Sansal, P. flesh, blush edges.
Chénédolé, S. vivid crimson.

* Those marked P. are perpetual; S. summer roses.

Charles Duval, S. pink.
Colonel Coombs, S. rose and crimson shaded.
Comte Boubert, S. lilac crimson.
Coupe d' Hébé, S. clear pink.
Duchess of Sutherland, P. rose.
Fellenberg, P. crimson.
Félicitè Parmentier, S. white, pink centre.
perpetuelle, S. creamy white.
Frederic II., S. purple.
Fulgens, S. crimson.
Gèant des Batailles, P. velvety crimson.
Great Western, S. crimson and maroon shaded.
Harrisonii, S. yellow.
Henri Barbet, S. rosy crimson.
Jaune Desprez, P. fawn and orange buff.
Jules Margottin, P. brilliant rose.
Kean, S. scarlet and crimson shaded.
La Biche, P. white, cream centre.
Leopoldine d'Orleans, S. white.
Lion des Combats, P. dark crimson.
Leveson Gower, P. light crimson.
Louis Philippe, S. dark crimson.
Louise Odier, P. rosy peach.
Luxembourg (moss), S. crimson.
Madame de Manoël, P. white edged with rose.
Madame Hardy, S. fine white.
Madame Laffay, P. rose.
Madame Plantier, S. white.
Mrs. Eliot, P. purple.
Mrs. Rivers, P. flesh colour.
Napoleon, S. large rosy crimson.
Paul Ricaut, S. brilliant crimson.
Pierre de St. Cyr, P. lilac.

Prince Albert, P. (Paul's) cherry crimson.
Prince Leon, P. brilliant red.
Ruga, S. flesh colour.
Solfaterre, P. sulphur.
Splendens, S. cream edged with lake.
Sir J. Paxton, P. rose.
Souvenir de Malmaison, P. flesh colour.
Triomphe de la Duchère, P. pink.
Triomphe de Paris, P. purple.
Village Maid, S. white striped with rose.
William Griffiths, P. pink.

[*Purpose and Culture.*—For planting in borders or clumps on lawns; for single specimens, either as "Weeping" or "Pillar" Roses; for growing in pots in the conservatory, greenhouse, or pits;—for all these, and many other purposes, the rose is admirably adapted. It delights in a loamy soil, well enriched with manure; should be pruned annually in March, the "Perpetuals" *slightly* pruned and manured a second time after the first flowers have fallen. Water given in dry weather will materially assist the unfolding of the flowers, and increase their size.—(See also Letter IX).

HOLLYHOCKS.

Agricola (Paul's), salmon pink.
Beauty of Cheshunt (Paul's), light rosy red
Glory of Cheshunt (Paul's), yellow.
Lizzy (Paul's), fine peach.
Comet, rich crimson.
Fireball, superb (Paul's), light scarlet crimson.
Magnum Bonum, dark maroon.
Pourpre de Tyre, rich purple.

Prince of Orange, reddish orange.
Queen, light blush.
Rosy Queen, rosy blush.
White globe, (Paul's) white.
Yellow model, primrose, chocolate ground.
Zenobia, (Paul's) fawn, claret ground.

[*Purpose and Culture.*—Well adapted for planting in semicircular groups against a wall or fence, in lines, singly or in groups near the outer boundary of a garden: very effective rising behind or among evergreens and shrubs. Gorgeous flowers in autumn, and easy of culture. Plant them out in April in rich loamy soil, and *water abundantly* till the flowers expand. Plants are raised by cuttings struck in a cold frame in the summer months, or by seed sown in July.

DAHLIAS.

Amazon (Holmes), white tipped with lake, 3 ft.
Bob (Drummond) bright scarlet, 4 ft.
Duke of Wellington (Drummond), orange, 4 ft.
Golden Eagle (Holmes), golden orange.
General Faucher (Rose), rosy buff, 5 ft.
Indispensable (Barnes), deep yellow, 4 ft.
King of Yellows (Collier), pure yellow.
Malvina (Howard), white, mottled and tipped with purple. 4 ft.
Mr. Selden (Turner), rosy purple, 3 ft.
Queen of Whites (Drummond), white, 2 ft.
Sarah (Wheeler), white, tipped and edged with pink, 4 ft.
Sir C. Napier (Hale), deep scarlet, 2 ft.
Triumphant (Keynes), crimson, 5 ft.

FANCY DAHLIAS.

Admiration (Green), white, edged with scarlet, 4 ft.
Duchess of Kent (Knight), delicate yellow, tipped with white, 4 to 5 ft.
Gloire de Kain (Cailloux), white, striped and spotted with purple maroon, 4 ft.
Mrs. Hansard (Edwards), yellow, tipped with white, 2 ft.
Phaeton (Miquet), white, edged with rose, 2 ft.
Reine des Fleurs, rosy purple, tipped with white, 3 ft.

[*Purpose and Culture.*—Indispensable as an autumn flower. Cuttings taken from old roots, placed in the forcing-pit in February, may be rooted in a few days, and, if planted out in May, will flower well in August and September. Dahlias delight in a rich and rather stiff loam, require well thinning and plenty of water to produce fine flowers. On the approach of winter the roots should be taken out of the ground, after cutting their tops off, and stowed away in a dry, cool place, where secure from frost, till spring].

PANSIES.

Earl Mansfield, straw and purple.
Emperor, rich yellow, top petals and margin rich maroon.
Flower of the Day, rich dark.
Lady Emily, straw and dark purple.
Lady Carrington, white, light purple edge.
Marion, straw and purple.
Miss Talbot, straw and purple.
Monarch, golden yellow, top petals and margin maroon.
Royal Visit, white, top petals and margin rich purple.
Sir John Cathcart, golden yellow, top petals and margin bronzy crimson.

Sovereign, rich yellow.
Uncle Tom, dark.

[*Purpose and Culture*—May be grown in pots in cold frames, or in the open borders, for general decoration. They flourish in a sandy loam enriched with decomposed manure, and should not be fully exposed to the sun. Cuttings may be taken off in spring, summer, and autumn and rooted under a hand-glass on a north border, and will commence flowering shortly after rooted].

CARNATIONS.

Admiral Curzon, scarlet bizarre.
Black Diamond, crimson bizarre.
Beauty of Woodhouse, purple flake.
Count Pauline, crimson bizarre.
Flora's Garland, rose flake.
Jenny Lind, crimson bizarre.
Justice Shallow, scarlet flake.
King of Carnations, crimson bizarre.
Lord Rancliffe, scarlet bizarre.
Poor Tom, rose flake.
Queen Victoria, scarlet flake.
Squire Trow, purple flake.

PICOTEES.

Ariel, red.
Duke of Devonshire, purple.
Frances, red.
Haidè, purple.
Helen, red.
King James, red.
Lady H. Moore, purple.
Lord Nelson, purple.

Marion, red.
Mrs. Norman, red.
Prince of Wales, red.
Venus, red.

[*Purpose and Culture*—May be grown in pots, or in the borders, for general decoration. A soil composed of loam, well-decomposed manure, and sand, suits them: they are propagated by layers made when the plants are in bloom].

PINKS.

Beauty of Salthill, reddish purple.
Brunette, dark.
Criterion, purple.
Constance, red.
Harry, dark purple.
James Hogg, dark.
Jupiter, purple.
Narborough Buck, purple.
New Criterion, purple.
Purple perfection, purple.
Prince of Wales, rosy purple.
Sarah, dark.

[*Purpose and Culture.*—The same as in Carnations and picotees. Propagated by cuttings or "pipings," as well as layers. The "pipings" should be taken off when the plants are in bloom, and placed under a hand-glass where a gentle bottom-heat is secured.

CONSERVATORY AND GREENHOUSE, OFTEN SPOKEN OF COLLECTIVELY AS NEW-HOLLAND PLANTS.

Acacia armata.
dealbata.
Drummondii.
grandis (true).
longiflora floribunda.
pulchella.
rotundifolia.
Aloysia citriodora (the sweet-scented verbena).
Aphelexis purpurea grandiflora.
Beaufortia decussata.
Borronia Drummondii.
serrulata.
Brugmansia arborea.
sanguinea.
Burchellia capensis.
Chorozema Lawrenceana.
varium nana.
Citrus (orange) in varieties.
Coronilla glauca.
Corræa ventricosa.
brilliante.
Cyclamen persicum, in varieties.
Cytisus racemosus superbus.
Daphne indica.
japonica.
Epacris, in varieties.
Erythrina Crista-galli.
Eutaxia myrtifolia.
Grevillea acanthæfolia.
Habrothamnus fasciculatus.
Hovea Celsii.

Humea elegans.
Hydrangea variegata.
Kalosanthes, in varieties.
Lilium, in varieties.
Magnolia fuscata.
Metrosideros floribunda.
Mitraria coccinea.
Nerium splendens.
Polygala oppositifolia.
Primula sinensis, in varieties.
Pultenæa subumbellata.
Rhododendron, in varieties.
Siphocampylos bicolor.
Swainsonia galegifolia.
Thea Assamica.
Tristania neriifolia.
Tritonia aurea.
Witsenia corymbosa.

[*Purpose and Culture.*—For stocking the conservatory, greenhouse, or pits, thriving for the most part in a soil composed of sandy loam and peat. Beautiful plants, flowering at various seasons, some in the depth of winter. Their culture differs slightly. A medium temperature and a yearly pruning and shifting, is favourable to the majority. See p. 80.]

EARLY FLOWERING BULBS FOR CONSERVATORY.

	Colour.	Ht. ft.	Month of Flowg.
Hyacinths, in variety	var.	¾	12-3
Narciss polyanthus, in variety	var.	1	12-3
Tulips, Van Thol, single, in variety	var.	½	1-2
double	yel. & br.	½	1-2
Tournsol, double	red & yel.	½	1-2
Thomas Moore	buff	¾	2-3
Royal Standard	white & red	¾	2-3

	Colour	Ht. ft.	Month of flowering.
Jonquils, double	yel.	1	1-2
single, sweet	yel.	1	1-2
Iris, Persian	br. & yel.	½	2-
Crocus, in variety	var.	½	1-2
Ixias, in variety	var.	¾	3-4
Amaryllis, in variety	var.	1½	2-4
Cyclamen, in variety	var.	¼	2-3
Tropæolum Jarrattii	red & yel.	cl.	3-4
tricolorum	red & yel.	cl.	3-4

[*Purpose and Culture.*—Suitable for mixing with "forced" plants to bloom in the conservatory in winter. Pot the bulbs early in November, place them for a fortnight in a cold frame, then remove to a warmer temperature, and, as they blossom, convey them to the conservatory.]

CLIMBERS FOR THE CONSERVATORY OR GREENHOUSE.

Brachysema latifolium.
Bignonia capreolata.
Clianthus puniceus.
Fuchsias, of sorts.
Hibbertia dentata.
Jasminum grandiflorum.
Kennedya monophylla.
Mandevillea suaveolens.
Maurandya Barclayana.
alba.
Mimosa prostrata.
Passiflora cœrulea racemosa.
Colvillii.
Rhyncospermum jasminoides.
Sollya heterophylla.
linearis.
Tecoma jasminoides.
Zichya inophylla floribunda.

[*Purpose and Culture.*—For covering the sides, pillars, and rafters of the conservatory or greenhouse. Where convenient, they should be planted out in the beds or borders of the house, in a soil of loam and peat, and trained up from time to time. Thus treated, a more vigorous growth is the result.]

HARDY SHRUBS, &c., FOR FORCING.

Almond, double Chinese, pink.
Berberis Darwinii, yellow.
Cherry, double blossomed, white.
Thorn, double pink, pink.
white, white.
Deutzia gracilis, white.
Jasminum nudiflorum, yellow.
Fabiana imbricata, white.
Plum, double-flowering, white.
Ribes sanguineum, red.
Roses, various.
Spiræa prunifolia plena, white.
Lilacs, (Persian) lilac and white.
Viburnum plicatum, white.
Weigela rosea, rose.
Andromeda floribunda, white.
Azaleas, English and Ghent, various.
Kalmia latifolia, white and pink.
Rhododendrons, various.
Rhodora canadensis, lilac.

Dielytra spectabilis, pink.
Lily of the Valley, white,

and almost any perennials that are observed to flower at an early period in the open borders.

[*Purpose and Culture.*—To adorn the conservatory and

greenhouse in winter and early spring. Take them from the ground early in autumn, pot, and place them in a cold pit, introducing a few at a time, as required, into a warm pit or greenhouse. When the buds show colour, remove them *gradually* to a cooler house, and, when done flowering, back again to the cold pit, and from thence out of doors.

HEATHS (ERICA).

Erica, Bowiana.
Cavendishiana.
fastigiata lutescens.
gracilis.
hyemalis.
intermedia.
Lambertiana.
linnœoides.
mammosa.
propendens.
Sindryana.
ventricosa superba.
Willmoreana.

[*Purpose and Culture.*—A beautiful genus, usually grown to greatest perfection in cold pits, when protected from the winter's frost, but equally suitable for the greenhouse or conservatory. The kinds above named flower at different seasons: they delight in sandy peat, and the pots should be well drained: they require little water, plenty of air, and dislike heat.]

CAMELLIAS.

Alba plena, pure white.
Bealii, rosy red.
Chandlerii, dark crimson, mottled with white.
Donakelari, crimson, mottled with white.

Duchesse d'Orleans, white with flesh and carmine, striped.
Elegans, delicate rose.
Fimbriata, white.
Hendersonii, pink.
Henri Favre, salmon rose, with white stripe.
Imbricata, rosy crimson, sometimes mottled.
Ochreleuca, white, straw centre.
Tricolor, white, striped and spotted with carmine.

[*Purpose and Culture.*—The queen of winter, suitable alike for conservatory or greenhouse. In the former, they are often planted out in the borders: in the latter, usually grown as small specimens in pots. They thrive in loam and peat, in a cool temperature, requiring a little warmth only when making their new growth. When this is completed, they should be shifted and placed out of doors, on the north side of a hedge or wall where the morning sun alone may reach them. *Weak* liquid manure is an excellent stimulus, enriching the colour of the foliage, and increasing the size and beauty of the flowers.]

AZALEAS.

Alba superba, fine white.
Exquisita, pink, with red spots and white edging.
Gledstanesii, white, sometimes striped with red.
Holfordii, rosy pink.
Lateritia, orange red.
Ledifolia macrantha, purple.
Optima, large scarlet.
Fulgens, fine dark scarlet.
Rosea superba, rose, beautiful colour.
Rubra plena, double scarlet.
Triumphans, large rose, spotted,
Variegata, salmon pink, white margin.
Iveryana, white, with red stripes.

[*Purpose and Culture.*—No flower produces a more brilliant and imposing effect in the conservatory and greenhouse in spring. It flourishes in sandy loam, with a little peat. When the flowering is over, the flower-stalks should be pulled off, the plants pruned and repotted where required, and placed in bottom heat, to form their new growth and set their bloom.]

PELARGONIUMS OR GERANIUMS.

Attraction (Foster), lower petals rich crimson; top petals dark, edged with bright crimson.

Carlos (Hoyle), lower petals mottled rose; top petals dark maroon, margined, with rose-white centre.

Exactum (Hine), white, dark top.

Governor-General (Hoyle), scarlet rose, black blotch, white centre.

Lucy (Foster), lower petals lilac; top petals dark, with lilac margin, large white centre.

Magnificent (Foquett), crimson scarlet.

Magnet (Hoyle), lower petals scarlet crimson; top petals same colour, with black blotch.

Majestic (Hoyle), lower petals mottled lilac and rose; top petals dark maroon blotch, edged with carmine, white centre.

Mochanna (Hoyle), rose, dark blotch, white centre.

Mogul (Turner) very dark.

Optimum (Foster), bright crimson, with black blotch on top petals, very fine.

Rowena (Turner), rose.

Sanspareil (Hoyle), the best of the spotted flowers, and very distinct.

FANCY PELARGONIUMS.

Cassandra (Ayres), crimson and white.
Celestial (Ayres), rosy crimson.
Criterion (Henderson), violet, carmine, and white.
Delicatum (Ambrose), white and light rose.
Magnum bonum (Ambrose), mulberry.
Queen of Crimsons (Ayres), rich crimson.

[*Purpose and Culture.*—No flower is more attractive in the conservatory or drawing-room, combining the most lovely forms with a gorgeous brilliancy of colouring. Loam and half decomposed manure and drift sand form a good compost for them. Cuttings taken throughout spring, summer, and autumn, and rooted in a little heat, will bloom in gradual succession the next year.

VERBENAS.

Annie Laurie, rosy purple, white centre.
Blue Beard, blue.
Bouquet parfait, deep rosy purple, light eye.
Bridesmaid, white, large rosy eye.
Defiance, scarlet.
Eblouissante, crimson scarlet.
Eva, white, good habit.
King of Scarlets, orange scarlet, yellow eye.
Lady Lacon, bright pink, white centre.
Orb of Day, crimson, white eye.
President, dark maroon, white eye.
Purple King, purple.
Rouge et Noir, crimson, white eye.
White Perfection, white.
William Barnes, purple amaranth, violet eye.
Wonderful, blue, white eye.

[*Purpose and Culture.*—A beautiful class of plants of easy culture, alike suited to adorn the conservatory and the parterre. They flourish in common garden soil, blooming for months in succession. Cuttings taken at almost any season may be rooted in sand or sandy soil. It were easy to extend the list here given, as there are now verbenas of almost every shade: the above are a few of the best and most distinct kinds.]

FUCHSIAS.

Duchess of Lancaster (Henderson), tube and sepals white, corolla rosy lilac.

Elegans (Banks), dark, beautifully reflexed.

Glory (Banks), tube and sepals crimson, corolla dark purple.

Othello (Turner), tube and sepals crimson, corolla violet purple.

Prince Albert (Banks), tube and sepals scarlet crimson, well reflexed, displaying to advantage the rich violet corolla.

Queen Victoria (Story), tube and sepals bright scarlet crimson, beautifully reflexed, displaying a *white* corolla.

Queen of Hanover (Banks), tube and sepals pure white, corolla carmine, beautifully reflexed.

Vanguard (Banks), tube and sepals rich crimson, corolla intensely dark.

[*Purpose and Culture.*—Free growing, graceful, and handsome plants, suited for training up the rafters or walls of the conservatory, for culture in pots, and for beds out of doors. Cuttings made of the half-ripened wood strike readily at almost any season.]

CHRYSANTHEMUMS.

Sec. 1.—*Large-flowered varieties.*

Alcibiades orange and red, large and fine.
Arigena, amaranth, incurved, very fine.
Beauty, peach blush, incurved.
Chrysipe, rose purple and silver edge.
Christopher Columbus, reddish violet, incurved.
Defiance, white, incurved.
Dupont de l'Eure, orange and carmine, incurved, very fine.
Leon Leguay, lilac.
Lysias, red orange, incurved.
Madame Andrè, rose and white, incurved.
Madame Furtadot, white and rose.
Nonpareil, rosy lilac.
Plutus, bright gold, incurved, very fine.
Rosa mystica, creamy rose, incurved.
Strafford, rosy purple, incurved.
Themis, rose.
Vesta, ivory white, incurved.
Queen of England, blush, incurved, one of the finest.

Sec. 2.—*Anemone-flowered varieties.*

Fleur de Marie, large white.
Gluck, fine golden orange.
Madonna, yellow, sulphur edges.
Marguerite d'Anjou, nankeen.
Marguerite d'York, canary and dark yellow.
Sulphurea pallida, sulphur.

Sec. 3.—*Pompon and Lilliputian varieties.*

Autumna, buff.
Bijou d'Horticulture, sulphur white.

Cedo nulli, white with brown points, anemone.
Drine drine, clear yellow, very fine.
Jonas, bronzy yellow and crimson.
Model, fine white.
Pouledetto, rose and white.
Rosalind.

[*Purpose and Culture.*—The Chrysanthemum is too well known as a fine late autumn flower to require comment. Loam, manure, and sand is the soil in which it seems to thrive best; and cuttings taken in April or May, rooted in heat, and potted on once or twice during summer, will bloom as large plants in November following. As regards the nature of the plant, it will pass the winter out of doors uninjured; but from the season at which it blooms (November) it requires the protection of glass for the preservation of its flowers.]

CINERARIAS.

Kate Kearney, fine, large, white, dark disk.
Lady Camoys, pure white, deep blue edge and disk.
Lady Paxton, white, with broad margin of light purple, dark disk, very large and fine.
Lord Stamford, white, with azure blue edge, light disk.
Mrs. S. Herbert, white, edge, carmine.
Novelty, large purple, light disk.
Optima, clear white, with broad, deep, blue margin; dark disk, very fine.
Picturata, white, with broad rosy violet margin, light disk.
Prince Arthur, scarlet crimson.
Sir C. Napier, dark blue.
Scottish Chieftain, white, with deep violet edge, dark disk.
Mrs. Foster, white, with glossy lilac edge, white disk.

[*Purpose and Culture.*—These are the delight of the conservatory late in winter and early in spring, the rich and brilliant masses of colour they exhibit making them general favourites. Cuttings taken in summer, and rooted under glass, will flower the winter and spring following. They appear to flourish best in cold frames up to the time of blooming; but as they are rather susceptible of frost, care must be taken that they do not suffer in this respect. Loam, manure, and sand is an excellent soil for them.]

BEDDING PLANTS.

Ageratum, blue.
Anagallis, red and blue.
Antirrhinums, in variety.
Bouvardias, red.
Calceolarias, yellow and brown.
Fuchsias, red and white.
Geraniums, scarlet.
variegated.
unique, purple.
Gaillardia, yellow and brown.
Heliotropiums, lilac.
Isotama, blue.
Lobelias, blue and scarlet.
Œnotheras, yellow and white.
Pentstemons, red and white.
Petunias, in variety.
Phloxes, ditto.
Senecios, white and purple.
Salvias, red, white, and blue.
Verbenas, in variety.
Trachelium, blue.

[*Purpose and Culture.*—Indispensable for ornamenting

the garden in summer and autumn. Cuttings of the greater part taken in summer and early autumn will strike in a frame or house with gentle bottom heat: others require to be grown in heat in winter, and the cuttings struck in spring. All may be wintered in a greenhouse, or even a cold pit, provided the frost be excluded.]

FRUITS.

TABLE APPLES.

	Season.
White Juneating	Aug.—Sept.
Kerry Pippin	Oct.—Nov.
King of the Pippins	Nov.—Dec.
Scarlet Nonpareil	Jan.—March.
Court Pendu Plat	Feb.—April.
Sturmer Pippin	April—June.

KITCHEN APPLES.

Keswick Codlin	Aug.—Sept.
Councillor	Sept.—Oct.
Blenheim Orange	Nov.—Jan.
Lewis's Incomparable	Dec.—Feb.
Herefordshire Pearmain	Feb.—April.
Wellington	April—June.

APRICOTS.

Large Early	Beginning August.
Moor Park	End of Aug. beg. Sept.

CHERRIES.

May Duke	June.
Belle de Choisy	July.

	Season.
Knight's Early Black	End of June.
Elton	July.
Bigarreau	End of July.
Late Duke	End of July beg. Aug.

PEARS.

Jargonelle	August.
Seignieur (Esperen)	September.
Marie Louise	Oct.—Nov.
Louise Bonne of Jersey	November.
Eyewood	Nov.—Dec.
St. Michael's	December.
Fondante d'automne	September.
Beurrée d'Amanlis	October.
Passe Colmar	Dec.—Jan.
Knight's Monarch	Jan.—Feb.
Winter Nelis	Feb.—March.
Beurrèe de Capiamont	October.
Beurrèe rance	March—May.
bosc	Nov.—Dec.

PLUMS.

Green Gage	Mid. of August.
Victoria	End of September.
Royal Hative	End of August.
Purple Gage (Reine Claude Violette)	End of September.
Jefferson's	September.
Coe's Golden Drop	Sept.—Oct.

RASPBERRIES.

	Colour.
Red Antwerp	Red.
White	White.
Fastolf	Red.

STRAWBERRIES.

	Season.
Keen's Seedling	June.
British Queen	Beg. of July.
Elton	End of July.

GRAPES.

	Colour.
Muscadine	White.
Black Hambro'	Black.
Black Prince	Black.
White Frontignac	White.
Grove End Sweet Water	White.
Esperion	Black.
Miller's Burgundy	Black.

NUTS.

White Filbert
Red ditto
Cosford Nut.

NECTARINES.

	Season.
Violette Hative	Aug. beg. Sept.
Elruge	August.
Hunt's Tawny	End of August.
Late Newington	September.

PEACHES.

	Season.
Grosse Mignonne	August.
Acton Scott	End of August.
Buckingham Mignonne	Beg. of September.
Royal George	September.
Violette Hative	Mid. of September.
Galande	End of September.

CURRANTS.

	Colour.
Red Dutch	Red.
Keen Large	Red.
White Dutch	White.
Black Naples	Black.

FIGS.

Black Ischia	Black.
Marseilles	White.
White Turkey	White.
Lee's Perpetual	Brown.

GOOSBERRIES.

Large Champagne	Red.
Keen's Seedling	Red.
Warrington	Red.
Crown Bob	Red.
Whitesmith	White.
Leigh's Rifleman	Red.
Taylor's Bright Venus	White.
Yellow Champagne	Yellow.
Nonpareil	Green.
Lord Crewe	Green.
Companion	Red.
Early Green	Green.

For the culture of Fruit-trees, See Letter XI.