THE ART AND CRAFT OF
GARDEN MAKING.

WORKS BY THE SAME AUTHOR.

"CIVIC ART: STUDIES IN TOWN PLANNING,
PARKS, BOULEVARDS, AND OPEN SPACES,"

BATSFORD.

"DUNFERMLINE,"

AN ILLUSTRATED REPORT PREPARED FOR
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"BOLTON,"

A STUDY IN TOWN PLANNING.

GARDEN AT LEES COURT

THOMAS H. MANSERIE HON. ARCHT.
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THE ART & CRAFT *of* GARDEN MAKING

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. Fourth Edition .

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PREFACE.

THE fact that my book "THE ART AND CRAFT OF GARDEN MAKING" has run through three editions in the short period since it first appeared, could not fail to be gratifying to me, and the very indulgent treatment which it has received, both from reviewers and the large circle of friends which my practice in this and other countries has given me, themselves often deeply versed in many of the subjects dealt with, has been a continual source of pleasure. Their kindness could not, however, blind me to many faults which I was conscious still remained, even after the two partial revisions undertaken before issuing the second and third editions, and it was this consideration which determined me to re-write and very largely re-illustrate the book for a fourth edition.

There was also another consideration which made drastic revision necessary. In the sphere of garden design, as in every other phase of modern life, the spirit of change has made itself felt. New needs have arisen and new practical requirements, the outcome of changing conditions, have to be met. As an instance of this, one has only to quote the coming of the motor-car, which has made it necessary entirely to re-write those portions which deal with drives, entrances, lodges and carriage courts.

In the arrangement of the book, a two-fold object has been kept in view. Not only has every effort been made to deal with the subjects discussed in such a manner as to provide interesting consecutive reading to all who love a garden, but also to make each chapter, dealing with a special branch of garden making, complete in itself, thus giving to the work some of the uses of a book of reference. This latter requirement has necessitated some little repetition, which it is hoped the general reader will pardon. There is no part of the fascinating subject of garden design which has not a direct influence on every other part, and therefore, notwithstanding this confessed redundancy, it has been thought necessary to provide copious indices in order that each branch of the subject may be still further collated.

So much for the re-arrangement of the literary matter. The re-illustrating has been undertaken from a different motive. In the first edition I was obliged to rely almost entirely on perspective drawings to help me to visualize the plans illustrated, for, though most of the schemes described were completed, so far as the actual work of formation was concerned, the hand of time was necessary to clothe the groundwork thus created with a softening and beautifying veil of greenery.

In the present edition, however, after twenty-five years' practice, I am in a position to illustrate by photographs from my own work nearly all the points dealt with. While this almost exclusive use of examples culled from my own practice may be considered open to the objection that it narrows the outlook, it has the more than counterbalancing advantage that each point shows some problem met in actual practice, and successfully solved, a practical gain of the highest importance.

PREFACE.

Nevertheless I should be the last to claim that any merit which the designs illustrated may show is entirely my own. In almost every case throughout my practice, where a scheme prepared has gone further than the draughting board, I have owed much to the interest and advice, the outcome of an intelligent and discriminating enthusiasm for the work, which have been shown by my Clients. It is only by this sympathetic collaboration that the best results can be obtained.

I wish also freely to express my indebtedness to those of my Clients who have kindly permitted me to illustrate the work which I have done for them. I also desire to acknowledge the help rendered by my Sons, Messrs. E. Prentice and John W. Mawson, the former of whom executed most of the additional drawings prepared for this edition, and by many of my office staff, past and present, including Messrs. R. Atkinson, D. Cameron, N. and H. Dixon, J. Dyer, A. N. W. Hodgson, R. Mattocks, J. R. Mawson, H. Pierce, J. Shaw and J. B. Walker, each of whom has taken a keen and practical interest in the production of the work. The book also owes much to the illustrations by Messrs. E. A. Chadwick and E. A. Rowe, particularly the coloured plates.

Lastly I wish to acknowledge the invaluable services rendered by my Secretary and former pupil, Mr. James Crossland, who arranged my MS. for the printer. Without this collective effort, this edition, produced, as it has been, in the intervals of an extensive and growing practice, would have been impossible.

THOMAS H. MAWSON.

High Street House, Lancaster.

October, 1912.

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1884
California

FIG. I.—END OF THE GLADE, LEWISTON MANOR.

CHAPTER I.

Before considering the various features which go to the making of a modern garden, it will be necessary to take a rapid survey of the history of the art of Landscape Architecture so far as it has any immediate bearing upon our subject, and provides a precedent on which to work.

The existence of gardens may be taken as being coeval with the whole period of man's growth from utter barbarism to present-day civilization; but, for our immediate purpose, it is sufficient to deal with the development of the art in our own country. Those who are interested in the archæological aspect of the subject will find it very fully dealt with in Loudon's "Encyclopædia of Gardening."

The evolutionary lines along which advance is made in every art demand that a thorough knowledge of precedent shall form a prominent part of the training of the expert, and although it has been said with truth that landscape architecture suffers, in comparison with other arts, from the paucity of its precedent, this merely means that the planning of the modern garden is a young art capable of much development, and does not excuse a lack of knowledge of all that has been done by masters of the craft in this country during the last four centuries.

Knowledge of precedent necessary.

With Roman and Norman gardens it is not necessary to deal, further than to say that they probably formed the basis of many medieval monastic pleasaunces. Up to the close of the Tudor period, when the renaissance in all forms of art had taken such a firm hold upon Europe, garden design, except in connection with Royal Palaces, like so many other branches of knowledge, was almost entirely in monastic hands, and most of the existing records of the achievements of the monks are contained in the illustrations with which they embellished their illuminated manuscripts, and incidental references to the beauties of their parterres and pleached alleys in the metrical romances of the period.

Roman and Norman Gardens.

From the time of Henry II., however, the citizens of London had gardens to their villas, while later, in the reign of Henry V., the gardens at Windsor Castle, which he knew well from his imprisonment there, were thus described by King James I. of Scotland in "The Quair":—

"Now was there maide fast by the touris wall
A garden faire, and in the corneris set
Ane herbere grene, with wandis long and small
Railit about, and so with treeis set
Was all the place and hawthorn hedges knet,
That lyfe was non, walkyng there for bye
That myght within scarce any wight espye.

So thicke the bewis and the leves grene
Beschudit all the alleyes that there were,
And myddis every herebere might be sene
The scharp grene swete jenepere,
Growing so fair with branches here and there,
That as it semyt to a lyfe without,
The bewis spred the herbere all about."

THE PRECEDENT OF GARDEN DESIGN.

Monastic Gardening.

Although formality was the rule within the medieval pleasure grounds, natural foliage effects were interspersed with the hedges, "beshaded" alley walks, topiary borders, fountains, flower beds planted in intricate patterns, arbours and flower-covered trellis which formed the greater part of the gardens. The charm of the English garden has ever been its adaptability to the rural and pastoral scenery among which it is placed, and in this respect the monastic builders and designers excelled. They first chose a site of natural beauty, as may be seen in the ruins of Bolton, Fountains, Tintern or Furness, and then built their abbeys with an instinctive feeling for harmony, making them blend into their surroundings of river, woodland or fertile pasture in a manner which has never been surpassed. They possessed the well-nigh unique power of adapting the geometric formalities of Gothic architecture to natural scenery, and so, in the formation of their gardens, the natural and the artificial were placed side by side, neither clashing with the other, but each gaining added beauty from the contrast.

The souls of such men could never be cramped within the pleasing neatnesses of the garden, they moved in larger prospects, their admiration and wonder were called forth by the beauties of Nature, the magnanimity of the Creator moved them to higher thoughts and aspirations. They possessed a broad grasp of Nature's excellences, the spirit of which infused alike their missals, their architecture and their gardens with that sense of a mystical environment which the least responsive to sympathetic surroundings must feel to some extent at least in an old-world pleasaunce.

Renaissance Gardens.

As before stated, a new period of garden design commenced during the Tudor period. Up to the commencement of the reign of Henry VIII., gardening, in common with all peaceful arts, had suffered a serious check in the disturbed state of the country during the Wars of the Roses, but the advent of more peaceful times, together with the advance in learning and travel, inevitably resulted in the importation of foreign styles of design, notably the Italian, French and Dutch, thus infusing fresh life into the art.

There is, however, such a pronounced individual character about our national landscape that it resists the heroic stateliness of the Italian manner with its too lavish details and the undue artificiality of the French renaissance, of which Versailles is perhaps the most typical example, as well as the curious conceits of the Dutch styles. All these suit their own countries well enough but are not at home in England; they, however, held the field in succession from the decadence of the monastic influence until the time when the style which is known as typical English gained the ascendancy.

The Italian style was probably first attempted in this country by Henry VIII. at Nonsuch, and Wolsey at Hampton Court, though the gardens at the latter place, as they now appear, were not completed until the reign of William III. The existing maze is however Wolsey's work.

All the garden books of the sixteenth century abound in descriptions of Italian features in white marble and Lydian stone copied from the designs of Italian Landscape Architects of the period; yet there is evidence in the writings of Doctor Andrew Borde and Thomas Hill that there were souls who yearned for emancipation from the foreign yoke and its artificialities, and to breathe their native air in an environment and amidst features which accord with its quiet type of beauty.

These two writers paved the way for Gervase Markham and William Lawson in the next century, both of whom wrote from practical experience. Their works abound in evidences of their innate love of Nature and of their delight in sights and sounds gratifying to the senses, as the following quotation from the writings of the latter will show:—

"What more delightsome than an infinite varietie of sweet-smelling flowers? decking with sundry colours the greene mantle of the Earth, the universall Mother of us all, so by them bespotted, so dyed, that all the world cannot sample them, and wherein

THE PRECEDENT OF GARDEN DESIGN.

is it more fit to admire the Dyer, than imitate his workmanship. Colouring not onely the earth, but decking the ayre, and sweetning every breath and spirit."

It is in these men and such as they, that the English school of garden design finds its parentage. They wrote for the people of average means rather than for the very wealthy, and they advocated a restrained and ordered formality in the least ambitious gardens. They retained all that was pleasing of the medieval examples, the high enclosing wall, the clipped hedges, the knots and borders, advocating the inclusion of topiary and straight paths bounding and intersecting short courts of grass, with a fountain, a sundial or a pyramid at their junction.

They knew how to frame the dainty jewel in its rustic green setting, trim and neat within and in harmony with its rural surroundings without, and even with the azure sky above. They resented the grandiose assumptions of the Italian and other imported styles and, in attempting to repair the vagaries of the landscapists who succeeded them, it is to these same healthy traditions we must return.

The Italian inspiration was fostered under the renaissance revival by Inigo Jones, who had studied the neo-classic style in Italy and had given special attention to the productions of Palladio, and who erected what is probably the first garden pavilion ever built in England, at Beckett near Farringdon. This revived interest in classic architecture had a salutary effect on the design of both houses and gardens in demanding in everything proportion and symmetry and, although widely popular up to the time of the supremacy of the Puritans and the disturbances of the civil war, when the gentler arts were for a time despised, nevertheless provides the highest standard for the education of public taste reached up to the close of the last century.

The accession of Charles II. restored garden design to favour. It was he who invited to this country le Notre, whose creations at Versailles and other places were on the largest possible scale. Such gardens as he planned needed an enormous expanse of ground and were combined with avenues which extended for miles beyond the boundaries of the garden proper. Le Notre taught the English gardeners expansive ideas, though, with exceptions like Badminton, there have naturally not been many opportunities of carrying them out. The ordinary country gentleman of the time avoided sumptuous effects and remained staunch to the unpretentious delights which had pleased his ancestors. That le Notre could adapt himself to his environment, however, is evident from his work at St. James's and Greenwich Parks.

With William and Mary was introduced the quaintness of the Dutch garden, which later ran riot in extravagant and ridiculous topiary. It was a degenerate art which destroyed the restful simplicity which had hitherto been such a marked characteristic of the national school of garden design. The introduction of these foreign styles had an unsettling effect on English gardening and, when the teased and tortured extravagances fell before the ridicule of Walpole, Pope, and Addison, a new fashion was evolved which usurped to itself the title of the "Natural Style," though, in spite of all that it professed, it was, in a different way, as much the subject of rules and as formal as anything which had gone before. As we see in the writings of Markham and Lawson, the formality of the old school was more honest and logical and more sincere in its genuine love of Nature.

From this time up to the latter part of the nineteenth century, garden design, considered as a decorative art, could not be said to have made any decided advance. Even the wealth of material which had been evolved or introduced in the interval, and which should have enlarged the scope of the art, merely resulted in obscuring broad principles under a mass of small detail and in giving free rein to those lovers of the curious and exotic who, by converting the garden into a floral and arboricultural museum, destroyed its restfulness and placed it entirely out of sympathy with the

*Decay of
the Italian
School.*

THE PRECEDENT OF GARDEN DESIGN.

surrounding rural scenery. If we study the principles upon which the medieval and renaissance gardeners worked, and contrast them with the practice of the garden designers of the last century, we find that the former subordinated every detail to principle, whereas the latter considered sundry points of detail to the exclusion of any regard for the scheme as a whole and of the relation the parts should bear to it.

The men of the old school were idealists and expressed their ideas in a straightforward, common-sense manner, basing everything on a balanced plan and using ornament to emphasize it. They laid out a garden in so many plots, with hedges or trellis round each, or a tree was planted at each corner to give point and expression to the shape. We have to thank these old designers for many stately avenues, grand parterres, quiet alleys, shady walks, sparkling fountains, quaint hedges, architectural ponds and broad lawns, wedded together in such a masterly way as to impress the spectator with the grandeur and transparent honesty of the whole scheme. Their restrained and harmonious details, so admirably adapted to the purpose they had to serve, marked these early designs as the work of men of the widest sympathy with garden craft. Here, in figures Nos. 2 and 3, are two examples of their work, the first shewing Haddon Hall, erected on a Derbyshire hillside and needing the support of masonry, thus giving an opportunity to its designer for a chaste and beautiful balustrade and a fine flight of steps. The other is of Levens Hall, suggesting a strong Dutch influence, a style more adapted to gardens laid out on a level site.

*Eighteenth
Century
Gardening.*

"Landscape Gardeners," as the garden designers of the late Georgian and Victorian periods called themselves, may, for want of a more correct expression, be called realists, their theory being that the perfection of the art of garden making consisted in pedantic imitation of Nature. The founder of this school was "Capability Brown," a man who was, for a long time, regarded as a genius. As he lived at a period in which almost every branch of art and literature was in the throes of change, there is no wonder that he turned his back upon the old examples of garden design and espoused the promised novelty of what he and his followers conceived to be a new discovery, which was briefly that every bit of pastoral scenery was of itself a garden fair, which they fondly imagined could be reproduced wherever the designer willed. Brown and his admirers thought that the old pleasaunces possessed greater possibilities than the original designer had realised, so down came the terrace walls, the mattock was laid to the roots of the box and yew hedges, and the pleached alleys were demolished. Remonstrance or counsel was useless, the tide had set in, onward it ruthlessly swept, regardless of the labours of a past generation and recking little of the sanctifying hand of time. Nature, they proclaimed, must henceforth supplant idealization, and the crudest effects perpetrated in her name be placed on a higher pedestal than that ordered symmetry and balanced proportion which is the soul of all true design.

The old school was doubtless decadent, and some corrective to the vagaries and appalling insipidities into which it had fallen was certainly required, but such a revolutionary change as that brought about by the garden designers of the eighteenth and the beginning of the last century is to be deplored. The ability of these men was measured by the amount of deception they were able to perpetrate, for their one claim to fame consisted in imitation and not in invention. With such ideas it is not surprising that sham castellated ruins and other absurdities came to be considered as necessary adjuncts to garden scenery. Ignorance and blind infatuation must altogether have possessed these innovators, or they would have seen that the old designers had learned many of the secrets of Nature which they seldom caught.

It is refreshing to find that, among all this turmoil of propaganda of new ideas,—this wanton destruction of beautiful work for the sake of an upstart fashion,—there were men who still clung to the old principles and who dared to risk adverse criticism by

FIG. 2.—HADDON, AN OLD HILLSIDE GARDEN.

FIG. 3.—LEVENS, AN OLD GARDEN ON A FLAT SITE.

FIG. 4.—SCOTCH FIRS ON BRATHAY CRAGS, WINDERMERE, IN WINTER.

FIG. 5.—SCOTCH FIRS ON BRATHAY CRAGS, WINDERMERE, IN SUMMER.

planting avenues of one tree which fortunately were never discovered by the "garden improvers."

In their own way, too, and without arrogating to themselves the control of Nature, the old-time designers secured those unlooked-for surprises and cosy retreats in which she abounds, whereas the men who claimed the sole possession of her secrets perpetrated the saddest kind of formalism, as may be seen to-day in the suburbs of all towns and especially in their planting. The conscious effort to avoid a straight line is particularly wearying and there is a satiating sameness in their methods of arranging deciduous trees and pines, two or three of the former to one of the latter.

Thus were the two schools of garden makers opposed to one another—the first relying on design for power of expression and the latter on their skill in imitating Nature. Had Brown and his followers been content with imitation, they would have simply perpetrated so many absurd and expensive frauds, but this did not meet the whole of their misguided practice. Walks and drives and many other things were required which could not be made to imitate Nature, and, as stated elsewhere, this led to many of the garden designer's most promising media being treated as unfortunate necessities. For the solution of the problem thus presented, the rule was invented that "Nature abhors a straight line," for these self-styled followers of Nature had no eyes to see the silver gleam across rippled water, the straight line in a sunset sky or the symmetry of the towering pine. The indiscriminate application of this rule to roads, lawns and other features could not but produce disastrous results. Drives were made to wriggle across flat expanses where every other consideration would dictate a straight line, and lawns also which were flat or only gently undulating had to be altered to imitate "Nature in her best moods," and so "undulating" became a stock accomplishment.

*Two
Opposed
Schools of
Garden
Design.*

In dealing with the open landscape of the home park, however, the work of this school is often commendable for its breadth. Theirs was a great age for the planter. Although they demolished avenues which, they said, arbitrarily parcelled the landscape off into sections and prevented breadth of effect, they largely atoned for this by emphasizing the natural features, by crowning the heights and planting their slopes with homely native trees, and clearing timber from the valleys so that the hills might rise still higher and the valleys appear deeper. To them are due many of the magnificent backgrounds of ancient trees against which our ancestral homes nestle. In the view of Brathay Rocks, Windermere, planted with Scotch firs (Ill. Nos. 4 & 5), we have one of those characteristic features upon which the old landscapists would have seized.

After Brown came Repton, who, while he professed to be a follower of Brown, was unquestionably far ahead of his master in intelligence and power to grasp the importance of the office of design. In many instances he refused to destroy old gardens, and in others he readjusted, in a consummate manner, the vagaries of his predecessor. Repton learned what was consistent with, and even a necessary accompaniment of architecture. Whereas the old garden designers favoured a formal scheme and the followers of Brown an entirely natural garden, Repton recommended formality near the house, merging into the natural, attaching the house by imperceptible gradations to the landscape. He took a further step towards idealism by making, for each scheme, a number of sketches shewing how the place would appear when the trees had attained a certain growth, so that, while the results of his methods were not demonstrable to the same extent as in the designs for a geometrical garden, which can be projected in planes by perspective drawing, there was a degree of probability in his proposals.

Repton.

In his "Sketches and Hints," Repton enunciated ten principles, the outcome of his experience, which shew the responsible position he took in respect to garden design and estate improvement. They are of such general interest that we make no excuse for printing them *in extenso* :—

THE PRECEDENT OF GARDEN DESIGN.

- No. 1. "There is no error more prevalent in modern gardening, or more frequently carried to excess, than taking away hedges to unite many small fields into an extensive and naked lawn, before plantations are made to give it the appearance of a park; and where ground is sub-divided by sunk fences, imaginary freedom is dearly purchased at the expense of actual confinement."
- No. 2. "The baldness and nakedness round the house is part of the same mistaken system, of concealing fences to gain extent. A palace, or even an elegant villa, in a grass field, appears to me incongruous; yet I have seldom had sufficient influence to correct this common error."
- No. 3. "An approach which does not evidently lead to the house, or which does not take the shortest course, cannot be right. (This rule must be taken with certain limitations. The shortest road across a lawn to a house will seldom be found graceful and often vulgar. A road bordered by trees in the form of an avenue, may be straight without being vulgar; and grandeur, not grace or elegance, is the expression expected to be produced.)"
- No. 4. "A poor man's cottage, divided into what is called a *pair of lodges* is a mistaken expedient to mark importance in the entrance to a Park."
- No. 5. "The entrance gate should not be visible from the mansion, unless it opens into a court-yard."
- No. 6. "The plantation surrounding a place, called a *Belt*, I have never advised; nor have I ever willingly marked a drive, or walk, completely round the verge of a park, except in small villas, where a dry path round a person's own field is always more interesting to him than any other walk."
- No. 7. "Small plantations of trees, surrounded by a fence, are the best expedients to form groups, because trees planted singly seldom grow well; neglect of thinning and removing the fence, has produced that ugly deformity called a *Clump*."
- No. 8. "Water on an eminence, or on the side of a hill, is among the most common errors of Mr. Brown's followers: in numerous instances I have been allowed to remove such pieces of water from the hills to the valleys; but in many my advice has not prevailed."
- No. 9. "Deception may be allowable in imitating the works of NATURE; thus artificial rivers, lakes, and rock scenery, can only be great by deception, and the mind acquiesces in the fraud, after it is detected: but in works of ART every trick ought to be avoided. Sham churches, sham ruins, sham bridges, and everything which appears what it is not, disgusts when the trick is discovered."
- No. 10. "In buildings of every kind the *character* should be strictly observed. No incongruous mixture can be justified. To add Grecian to Gothic, or Gothic to Grecian, is equally absurd; and a sharp pointed arch to a garden gate or a dairy window, however frequently it occurs, is not less offensive than Grecian Architecture, in which the standard rules of relative proportions are neglected or violated.
- "The perfection of landscape gardening consists in the fullest attention to these principles—*Utility*, *Proportion*, and *Unity*, or harmony of parts to the whole."

Brown and Repton had a host of imitators who followed one another in an ever descending scale of puerile imitation, until the whole art of garden design was reduced to the arrangement of the four factors of clumps of trees, belts of planting, single trees, and "undulations" accompanied by sheets of water arranged according to one unvarying stock design which differed only so far as the size of the estate made absolutely necessary.

THE PRECEDENT OF GARDEN DESIGN.

Speaking of this period, Loudon says :—" The Professor required no further examination of the ground than what was necessary to take the levels for forming a piece of water, which water uniformly assumed one shape or character, and differed no more in different situations than did the belt or the clump. So entirely mechanical had the art become, that one might have guessed what would have been the plan given by the professor before he was called in ; and Price actually gives an instance in which this was done. The activity of this false taste was abated in England before our time " (Loudon wrote at the beginning of the nineteenth century), " but we have seen in Scotland, between the years 1795 and 1805, we believe, above a hundred of such plans, in part formed by local artists, but chiefly by an English professor, who was in the habit of making annual journeys to the North, taking orders for plans, which he got drawn on his return home, not one of which differed from the rest in anything but magnitude. These plans were, in general, mounted on linen, which he regularly purchased, in pieces of some hundreds of yards at a time, from a celebrated bleachfield adjoining Perth."

This state of affairs led to the letting loose of a flood of argument as to what were the principles on which gardens should be designed and whence they should obtain their artistic precedent. Repton, Knight and Price were conspicuous in the fray both from the volume of their writings and the weight of their arguments, and the subject even became the motive of a novel and the subject of poetry.

The upshot was that the whole art fell more or less into disuse for a time and only entirely revived with the advent of Sir Joseph Paxton, whose excellence as a natural genius in the science of constructional engineering, coupled with his experience as a practical gardener, were considered sufficient qualifications for work which, above all things, demands a most catholic art training.

Sir Joseph Paxton and his contemporaries.

Nevertheless his work, together with that of his contemporaries, Edward Milner, Robert Marnock, Edward Thomas and Edward Kemp, was not without very considerable merit and a great advance on that which preceded it. It stands out in bold relief against that of the host of nurserymen and garden contractors who, encouraged by negligent architects and indifferent clients, added to their legitimate occupation what they were pleased to call " Landscape Gardening," which, whatever the term might convey to the customer, did not suggest to the professor of the trade any study or knowledge of the arts.

It is not surprising therefore that, towards the end of the last century, the whole art was viewed, by persons of education and taste, more in a spirit of toleration than with any enthusiasm for its development and that, between the architect for the house and the planner of its surroundings, there should grow up a mutual contempt and misunderstanding.

Kemp, by his writings and work, alone did much to heal this breach. He published, under the title of " How to lay out a Garden," a most excellent book which ran through three editions. The following quotation from the preface to the third edition of this work shews how nearly Kemp approached, at least in appreciation, to the architect's outlook on garden design :—

Kemp.

" It is much to be regretted that architects and landscape gardeners do not more usually work together in complete unison from the very commencement of any undertaking in which they are jointly consulted ; and he who would produce a work in which the relation of the two arts to each other, and the elements of garden architecture and of architectural gardening, should be skilfully handled and tastefully illustrated, would deserve the thanks of the entire art-loving community."

The undoubted revival which has followed the mistakes of the Early Victorian era in all forms of art is having its influence on Landscape Architecture. The dictum

THE PRECEDENT OF GARDEN DESIGN.

*The modern
revival in
garden
design.*

that every common thing about our homes should be so designed as to be beautiful without impairing its usefulness, while it has inevitably led to some of the extravagances of the "Art nuovo" cult, has had an unbounded influence for good, and the recognition of the equally obvious truism that all art media owe their artistic effect to juxtaposition of harmony or contrast has led us to see that, between the designer of the house and the architect of its setting, there must be the closest artistic sympathy and mutual appreciation if the result of the work is to be successful.

This close sympathetic connection can only be realized when the education of the votaries of these two departments of art is based upon a broadened curriculum which will ensure each gaining an insight in the round into the æsthetic factors dominating the sphere of the other.

We now stand at the parting of the ways and it remains to be seen whether the landscape architect on the one hand will co-operate with the domestic architect, and whether the latter will work in generous harmony with him, or whether the houses and gardens of the future are, by their aloofness from one another and want of æsthetic connection, to shew evidences of that lack of all appreciation on the part of each for the work of the other which has marked the domestic architecture of the last century. Eventually, but not before we are prepared to devote a longer period to academic studies, these two callings, so necessary to each other and so closely interwoven at every point, may merge into one.

FIG. 6.—WRIGHTWICK MANOR.

CHAPTER II.

The foregoing brief sketch of the history of garden making, so far as it relates to Great Britain, naturally raises the question—What should be the aim and position of the ART AND CRAFT OF GARDEN MAKING at the present day?

To understand thoroughly the bearings of this question, we must first of all realize that garden design, or the Architecture of Gardens, is only a part of a much greater subject of infinitely wider application, the profession of Landscape Architecture, and, if we examine the aims, scope and intention of this art, we shall by that means most easily arrive at the answer to our question.

*The term
"Landscape
Architecture."*

Before proceeding to do this, however, we would explain that the term "Landscape Architecture" is not of our choosing.* Its unfortunate etymological significance, which would seem to suggest puerile interference with natural scenery or, worse still, the attempt to reproduce Nature's glories on a mean scale in competition with artificial surroundings, has undoubtedly helped to obscure the real purpose of the art and to reduce its practice to the debased level at which we find it in the average town garden, where sickly exotic plants and blood-red terra-cotta predominate.

Shortly defined, Landscape Architecture is the art of co-relating the component parts of a scheme over large areas. It aims at the rhythmic, balanced or co-ordinated relation of all the units, utilitarian or decorative, employed within the area under treatment. It aims at producing a collective effect from the scattered units presented by the component parts, whether they be ecclesiastical, public, or domestic buildings, trees, greensward, roadway or flower beds, giving everything its proper place in relation to the whole, and marking fittingly by their arrangement the relative importance of each object.

This leads to the reflection—Are not architecture, horticulture, engineering and all the other factors which go to the making of a city or domain, parts of one great art or science? Yes, in one sense, and this art is Landscape Architecture. In another sense they are not, for it is impossible to conceive of an art without an artist or art-craftsman capable of grasping even the technicalities of his art, and the whole of these subjects could not be undertaken by one man within the ordinary span of existence.

As an art or science comes to be more fully known and the volume of its precedent increases, its adherents find it necessary to specialize and devote themselves to one portion of the subject, leaving the development of other branches to their confreres, each specialist sharing in the advance made by others and contributing to the general progress of the science as a whole.

*Specializa-
tion.*

* "Topographical Architecture" would probably be a term less liable to be misunderstood.

THE PRACTICE OF GARDEN DESIGN.

This is particularly so in the science of those arts which minister more or less directly to the conveniences and necessities of modern life with its ever-growing complexities and luxuries. It is not surprising therefore that, in the creation of that portion of our material environment which we call architecture, this specialistic tendency should be particularly marked, for in recent years the whole art has advanced in such a manner that to keep abreast of all its manifold activities is an impossible task for the individual student.

Unfortunately, there is sometimes the danger that, in this inevitable subdivision of labour, there may be a neglect of the art in the elaboration of its parts. Thus, in architecture, which depends for its success more than any other art upon correct staging, we are rapidly awakening to the fact that, in the study of individual buildings, we have neglected the greater and broader subject of Landscape Architecture, without which, effort spent on the design of detached units can never have its full fruition.

We have looked upon each unit in the composition too much as an entity in itself and too little as a component part of a larger scheme, and, not until we can conceive of the individual creation in its dual capacity, first as a fitting subject for the exercise of creative design in itself, and secondly as but a factor in a much broader scheme which, taking it as it stands, as *un fait accompli*, will deal with it in its relationship to many varying factors, can the architecture of this country reach its highest development.

*The Scheme
as a unit.*

This is where architecture, and especially domestic architecture, must begin—this is where the Landscape Architect must find his inspiration—and it is because of an awakening consciousness to this great truth that we find growing up a school of designers who are making the planning and design of gardens and the staging of architecture their special province.

But, it may be objected, it is impossible to conceive of any building apart from its site and therefore design and staging cannot be dealt with separately by the domestic and landscape architects. While it is true that environment will influence the least responsive designer so far as the design of his particular unit is concerned, it is only the influence of immediate surroundings on the unit, and that very partially, which he realizes; the greater possibilities contained in the opposite view, the relation of the unit to its surroundings, are entirely neglected.

That the need of a master hand to correlate and co-ordinate scattered units should ever have been lost sight of is due, not so much to egotism on the part of those in charge of the various sections of the subject, as to the lack of adequate representation from which Landscape Architecture has suffered; the lack, that is, of a strong man to fill the post and worthily uphold the traditions of his office. The process of decadence has been traced, in the last chapter, from the days of "Capability Brown," who, by turning his back on creative design to caricature Nature, destroyed the very root-foundations of his art, and thus opened the way for a host of followers who, knowing nothing of creative design and caring less, conceived the whole subject to be a happy field for *laissez-faire*, in which there can be no sense of constructive beauty and, at best, but an attempt to instruct Nature in her own unapproachable sphere.

It is thus that the term "Landscape Architecture," as usually understood, conveys nothing more to the mind than a slight and partial infusion of colour, neatness and prettiness, a smoothed-out, drilled and marshalled effect, superimposed as a veneer over the area treated, or an artificial improvement of that order which pervades all Nature.

It is not, however, to the discredit of this, or of any other branch of art, that its essential elements are not obvious, or that, as a science, it needs study for its appreciation, and the very fact that it is misunderstood or even despised by the ordinary person only attests its reality and intrinsic worth. Though he applauds when a noble result is attained, he can never understand the architect's intentions or share his vision. Again,

FIG. 7.—RENAISSANCE GARDEN AT MENTMORE.

FIG. 8.—EARLY VICTORIAN FLOWER GARDEN AT BROUGHTON CASTLE.

THE PRACTICE OF GARDEN DESIGN.

while he is content with those adornments which are curious or novel, or have the sanction of fashion, viewing them as isolated features and never as a part of an artistic composition, the intelligent and educated observer must have, first of all, a clear impression of the fundamental principles underlying the art, and resulting in a self-contained and co-ordinated entity embracing within itself all the necessary parts of the scheme, giving to each its proper place and necessary emphasis as a part of a well-balanced whole.

Far too long has the whole art been the sport of changing fashion and uninformed public taste and the prey of a spurious dilettantism which, by its vagaries, its sham ruins, its miniature Alps and impossible vistas, has reduced it to utter absurdity.

With the domestic architect on the one hand viewing his creation as an isolated unit to the exclusion of everything else, the practical gardener on the other trampling underfoot every canon of art in his eager desire for perfect specimens of exotic plants, and the engineer whose sole idea of beauty is superadded adornment, things have fallen to a very low ebb and, unless the present awakening to the need of a collective effort in design is adequately responded to, the contemporary school of landscape architecture will have only itself to blame if its claims are denied and its work and status taken from it and bestowed upon others who will more worthily uphold its traditions.

The Renaissance of the Art.

How then is the renaissance of the art to be effected? I think that the best way to answer this important question is to consider, very shortly, first, the training and requirements of the landscape architect, and, secondly, the ideal which should inspire him throughout his life-work. The former will give us some insight into his practical, and the latter into his artistic equipment.

The training of the Landscape Architect.

The first of these questions, if fully considered, would involve an examination of the whole syllabus of the student's training in landscape architecture; but, although this is a subject of great interest, which, in its application to the design of cities, is receiving experimental treatment at Liverpool University at the present time, it is impossible, in the space available, to do more than to indicate a few of the principal subjects which it will be necessary for him to master. First of all must come a general training, which shall be framed with the intention of inculcating that catholicity of ideas, power of concentration, and love of orderly progression and logical sequence which are best attained by an all-round classical education, the fruits of which find their use and expression in every walk of life, and which will be particularly appreciated in work which consists primarily in the welding of component parts into a balanced whole. On this foundation must be built a knowledge in the round of, and sympathetic interest in, not only every branch of architecture, but also in arboriculture, forestry, engineering and many other most divergent sciences which all go towards the making of a city or the embellishment of its parts.

It is not of course necessary, or indeed possible, that the Landscape Architect should possess such an intimate knowledge of the minutiae of all these professions that he could dispense with the services of the expert in each department. His task must be very largely that of an arbiter, who by a broad-minded sympathy for the aspirations of each, born of knowledge of the rules and ideals of his profession, is able to prevent that multiplication of little aims and disjointed efforts which abound in the average city or domain.

Superimposed on this academic training must be a marked natural versatility which will enable him to appreciate the efforts and the points of view of all the various designers or craftsmen of the component parts of the scheme, and so to give to each its proper place and correct emphasis. It thus follows that he must possess the judicial mind with the soul of the artist, a rare combination, it is true, but a necessary one if the confidence of his fellow-workers is to be obtained and held, a condition absolutely essential to success.

Even this is not enough, for the perfectly equipped landscape architect will not only have to deal with fellow-workmen, each trained to see and appreciate that which is good in his schemes, but also with private clients or public bodies to whom his method of presenting them by geometric projection on paper are more or less unintelligible, and his technical terms an unknown language. Here is his greatest task, for the Writer's life-long experience has proved to him that there is nothing more difficult for the lay mind to grasp than the ultimate effect of a comprehensive scheme for the formation of a garden. Indeed this could hardly be otherwise in this country, where our habit of "muddling through" great projects is almost a national characteristic. More than once have I been startlingly reminded of this when dealing with a client of Latin and particularly French nationality or extraction, and have noted the greatly-increased appreciation for and grasp of the ultimate result as a whole, and not in compartments and sections, which such persons have shown, and this without for a moment losing sight of the necessity for the careful consideration of minutiae. We have only to compare French and English cities and to note the continuity of effort on the one hand and its utter absence on the other to realize this.

*Continuity
of effort.*

While the classic examples of garden design, of which this country has so many, are undoubtedly incomparably beautiful, it is unfortunately true that the garden, as a means of serious art expression, would never seem to have presented itself to the minds of most people in this country. Notwithstanding the grandeur of the old Italian pleasaunces, the stately magnificence of the gardens of Paris and the more rural beauty of the English domain, and, more incredible still, notwithstanding the inexhaustible theme which the garden has formed for the painter, the poet and the novelist, the average Englishman would seem to be unable to see anything more in it than a place where flowers or trees may be grown for their intrinsic beauty alone, and quite apart from any collective effect which may be obtained by the arrangement of the various factors composing the garden as a whole.

*The garden
as a means
of serious
art
expression.*

Even if the isolated features have individual promise and interest, which must be patent to everybody, and their disposition and relative functions in relation to one another are carefully explained by precept and illustration, the ultimate effect is very rarely grasped until the garden is an accomplished fact, and, even then, the introduction of some much-prized piece of ornament or equipment which clashes with the whole, shows how little the "motif" of the design has been realized or the work appreciated.

The successful landscape architect must be able not only to build up in his mind's eye the whole of the components of his scheme into one harmonious, comprehensive whole, of which he is able to judge the effect before the commencement of the work, but he must also possess the gift of being able to present his conception to the minds of others so sympathetically that they too become fired with his enthusiasm for the ideal, and grasp enough of the spirit of his work to realize some at least of its excellences.

This is a difficult task, it is true, for between the yearnings of a mind imbued with a high ideal and the preconceptions of the ordinary mind which we call "fashion," there is a gulf fixed which they who attempt to bridge over will earn for themselves the title of "Idealist," a title which, though applied in opprobrium, is really a confession on the part of the critic that he fails to grasp the practical connections of the scheme proposed, and is not, by any means, a proof that they are unattainable or non-existent.

*Taste and
fashion.*

So much for the training of the landscape architect, now for the ideals which should influence his work at every turn.

We have already spoken of the broad sympathy with the aims and aspirations of others which should dominate all he does, and, in addition to this, he must mark his work with his own art vision. This he will do by the masterly application of the three factors which, for want of more expressive terms, I have designated realism, romanticism and symbolism (or, should we say, of mysticism).

THE PRACTICE OF GARDEN DESIGN.

*The ideals
of the
Landscape
Architect.*

What is meant by this, may, I think, be very shortly illustrated by a concrete instance. Here is a statue of Pan surrounded by his dancing dryads. Looking at it, the intensely practical man, so dear to the heart of the average Briton, says that, if it possesses the quality of uniqueness, it is the most important adornment in the garden. He esteems the work solely according to its rarity, and consequently its commercial value. The romancist, on the other hand, is seen in the sculptor or modeller, who judges it according to its artistry, silhouette, mass or detail, and its relation to its setting. He confines himself, more or less, to its visual merit, and, to him, this is its appeal. The triumph of the symbolist or mystic is, however, complete. Looking at the statue, he sees things to others invisible, hears, in the far-off pine-wood, the music of Pan's pipes at mid-day. All else is secondary, and he yearns, through the medium of his art, to translate his vision to the understanding of others.

This is his province, to infuse the drab necessities of existence with an inherent beauty, to divert the common crowd from low ideals by the elevation of their environment, and to cause those who never really loved art and who resent it as a departure from their own level of mediocrity, to rise to more worthy aims. Filled with a right conception of the dignity of his art, and fired with a great desire for its advancement, he expresses out of his own soul his passion, and persuades his audience to see what he chooses by materializing his dream, using, as a medium to this end, architecture, verdure, flowers, and the other materials of his craft, weaving the whole into one rhythmic, harmonious composition.

The Landscape Architect who can do this, who has the soul of the artist combined with practical acumen and technical ability, cannot fail to achieve the highest that is humanly possible—to leave the World a little richer than he found it. Such men must, of course, be rare, for it is a combination the prerogative of the highest genius. Nevertheless it is the ideal to be aimed at by every man in the profession and, even though he only partially realizes his aim, in so far as he is successful, his work will attain to immortality and the fining hand of time, which destroys ruthlessly the meretricious and hardly conserves that which is best fit to endure, will shew that his work is worthy.

We thus see what an opportunity, and, at the same time, what a responsibility, lie before the Landscape Architect of to-day if he is to maintain worthily the great traditions of garden design handed down to him by the garden makers of the past, and adequately to grasp the opportunities which the rise of a more discerning public has provided him with. It is with this opportunity and this responsibility in mind that we approach, in the next and subsequent chapters, the practical details of garden design, and it will be our endeavour to show how they may be rescued from the pettiness and meannesses which have done so much to degrade the art of recent years, and how landscape architecture may be raised to its proper place as mistress of the liberal professions as practised in this country.

FIG. 9.—WYCH CROSS, SUSSEX, DISTANT VIEW.

THE CHOICE *of a SITE* and its TREATMENT

CHAPTER III.

In dealing with the subject of this chapter, the choice of a site for a new domain and the endeavour to develop it on the best possible lines both artistically and practically, the writer ventures to think that we cannot do better than follow the prospective owner of a typical country residence through the whole process of choice and development, culling such lessons for future application as may be of general use.

The choice of a locality in which to build is naturally the first consideration, though in most instances there are factors connected with the business and health of the owner which will considerably narrow the question, and in any case it would be quite beyond the scope of this work to do more than to touch upon the climatic and hygienic advantages and disadvantages of the different portions of our Island.

Choice of a locality.

There are great differences in climate and atmosphere in various parts of Britain and even of the sea-board. The West coast, swept by the Atlantic breezes, tempered by the moist, warm air of the Gulf Stream, is more genial, if less bracing, than the East Coast, which is swept by the dry winds that cross the German Ocean, and from the same cause, the rainfall is much greater in the West than in the East. This is, however, to some extent compensated for by the mountainous surface and impervious subsoil on the West coast, which causes the water to flow away quickly from the higher portions of the land. The broken outline of the North-western coast again speaks eloquently of the violence of the stern "nor'-westers," though the resulting rugged picturesqueness may be sufficient recompense in the minds of some persons. The South coast, if we except the stormy extremities of Kent and Cornwall, provides throughout a genial and equable Winter resort, though undoubtedly somewhat relaxing in the Summer.

Other factors, however, modify or even reverse these primary climatic and atmospheric distinctions. Thus the lie of the land, its general contours, its altitude with reference to its surroundings, the dispositions of surrounding hills or mountains, the proximity and placing of woods and forests, the presence of a large lake all have a very marked influence.

It cannot be too clearly pointed out that mere altitude, reckoned, say, above the sea level, is of no value whatever. What is important is the height in comparison with its surroundings. For instance, a site which is five hundred feet above sea level, but in the bottom of a mountain valley where the sun rarely penetrates, may be depressing, while another on the sea coast, which is only twenty feet above high-water mark, may be bracing in the extreme. The same factors regulate the frequency of or immunity from fog. Mists always tend to hang in a valley, even though a thousand feet above sea level, which can easily be seen by visiting a hilly district in foggy weather and climbing the highest hill, when the top will often be found to be bathed in sunshine and the fog to lie at the

Altitude.

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beholder's feet like an inland sea, the tops of neighbouring hills peering above it like so many islands. On the other hand, to choose a site at an exceptional altitude on a mountain side might result in its being submerged in low-lying cloud almost every morning and evening. The site which will be found to be freest from such visitations is one on a Southern slope which forms no part of a natural basin.

Subsoil.

Another important factor which should be considered by those persons fortunate enough to be able to choose a site over a large area, is the nature of the subsoil. One that is pervious, such as those composed of gravel, sand or marl, is healthier than one which tends to become waterlogged in wet weather or is composed of stiff retentive clay. The porous soil, however, may become a source of danger through the facility with which poisonous matter from stables, cesspools or defective drains, can percolate through it and contaminate the water supply, or give off noxious gases into living rooms, unless this is guarded against.

It has been maintained that a loamy clay subsoil is preferable to a sandy or gravelly one, as the former is a slower conductor of heat, thereby maintaining a more even temperature; but this is not so, for every sudden change of temperature will be followed by dampness in the stratum of air next to the ground. It is also said that, in fully inhabited districts where efficient drainage is enforced, no inconvenience need arise from building on clay if the foundations are overspread with concrete and the walls damp-proofed. While it is true that the dangers of a water-retaining soil may be very much reduced and even almost negated by such means, it still remains that "prevention is better than cure" and that, where possible, health and comfort will be always best served by the choice of an elevated site on a porous subsoil, which is known to lessen the tendency to diseases such as tuberculosis, asthma, rheumatism, ague and kindred ills fostered by dampness.

This class of site has also distinct advantages when we come to make the garden. Not only is a light soil cheaper and easier to move in levelling the terraces and lawns, but, although much can be done to improve a very heavy soil, apart from the rose garden, one which is fairly light is preferable, especially for lawns. The paths, too, on clay land are apt to be greasy and disagreeable in wet weather, and the soil of the beds either very sticky or baked like a brick.

The elevated site too has its advantages from the gardener's point of view, not only because it will be more sunny, but because, being naturally drier, plants will not be so easily affected by frost, which always attacks newly planted shrubs in the bottom of a valley long before those higher up are affected, and, incredible though it may appear, many varieties of trees, shrubs and plants luxuriate in an elevated position which would not grow on lower ground.

There remain the questions of water supply and sewage disposal, the former being a matter which, strange to say, the author has more than once found to have been totally neglected until the site has been purchased and even built upon.

Having settled these absolutely essential hygienic requirements, there are many other questions arising out of the prospective owner's business or social relations, his personal preferences and those individual idiosyncrasies which, while they are quite unexplainable on medical grounds, make surroundings which are healthy for most persons quite unsuitable to the person subject to them.

Business and social requirements.

With regard to our prospective owner's business relations, we shall be stating the case of a very large number of builders of new residences if we imagine him compelled to build within easy reach of his place of business but wishing to obtain a site where his growing family will obtain all the advantages of rural surroundings and healthy country air, and large enough to allow him to indulge a bent for gardening, arboriculture, model farming, or other rural pursuits, such as can be dealt with within the

THE CHOICE OF A SITE AND ITS TREATMENT.

limits of a few acres of land. He will also desire to be within reasonably easy reach of a fairly efficient shopping centre such as that provided by a county or market town.

This question of accessibility has been greatly altered by the advent of the motor car. Whereas, formerly, a mile or a mile and a half was about the limit which the business man was prepared to go morning and evening in all weathers to and from the station, nowadays there are hundreds of instances where the same men travel from five to ten miles, and that with as little trouble. This, coupled with the steady and continuous improvement which is going on in the train services for business men, has opened up a very extended radius for choice of residence and has saved many an old Elizabethan farm or manor house or obsolete coaching inn from destruction and decay.

Accessibility.

In other cases, the proximity of one of the large hunts, a yachting centre, a renowned golf course or other facilities for country sports, may take the place of business requirements.

Personal preferences will differ very much and are often a little bewildering to the architect. It is quite exceptional for two persons to have the same ideas as to the value of a site, the conditions which appear desirable to one being often wholly objectionable to another. One person prefers to look on his neighbour's house, and feels more sociable thereby, while another prefers to be so entirely isolated that even his estate cottages must be placed out of sight and sound. Most people are, however, agreed on the desirability of pure air and a sunny situation, the best from the latter point of view being one which slopes towards a point a little East of South, while the worst is that which slopes towards the North-west, and in nearly every instance extensive or beautiful views are courted, and the presence of well-grown timber or hedge rows with young timber trees is considered desirable. A house built on a treeless field, especially on an elevated site, appears unsociable, whereas a few well established trees serve, in a way, to link the present with the past and help the new architecture to blend with the landscape.

Personal Preferences.

When all the factors discussed, hygienic, commercial, social, artistic, geographical, and personal, have been applied to those sites of about the area required which are available, it will generally be found that the choice is very narrow indeed, and probably the question will largely decide itself by the pre-eminent suitability of one particular plot, though, even when the best has been done, the result will partake of the nature of a compromise, and many difficult problems will be left for consideration as the work of development proceeds.

We may imagine, then, that our prospective owner has now made up his mind. To carry the subject further and show how the site which he has chosen should be treated, we have taken from the ordnance map the parcel of ground shown in illustration No. 10. In extent, shape and contours, it is suitable for a moderate-sized residence, and very typical of the class of site we have been discussing but at the same time distinctive enough in its general characteristics to prevent its being treated in any stereotyped manner. The site, nine acres in extent, is such as might be found in most hilly districts, especially in Westmorland, the county in which it is situated. It has been slightly altered to conceal its actual identity, but the alterations are not such as in any way to affect its use for the present purpose.

A typical site.

A farmstead with numerous outbuildings formerly occupied a level site indicated on the plan in the largest of the six fields which, with the two plantations of well-grown timber in good condition and the two coppices to the South and East, make up the nine acres. All are fenced with the rough stone walls characteristic of the district. The appearance of the plantations suggests that they may be the remains of a general clearing, the whole nine acres, with the exception of a portion of the lower field, being formerly covered with timber or coppice wood. The general fall of the land is to the South-east and a tumbling stream enters the ground near the North-west corner and passes to

Its aspect.

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FIG. II.—PLAN SHOWING MANSION AND ADMINISTRATIVE BUILDINGS GROUPED FOR COMPOSITE EFFECT.

FIG. I2.—SECTION THROUGH GROUNDS TO A COUNTRY HOUSE.

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placing the house on the site, for while the landscape architect will wish to compose the whole subject with the dominating feature, this is useless without the aid of the domestic architect in the placing and arrangement of the chief entrance door and the windows to the leading rooms. If the house is to be complementary to its setting, its arrangements must, in a great measure, be ruled by the design of the latter, and its architectural details be conceived in the same spirit. There is room for hearty co-operation also in the disposition of the service buildings, for while the domestic architect designs the culinary offices, the landscape architect places and arranges the kitchen garden, and efficiency demands that they shall be reciprocally planned; and the same principle applies to every other feature.

Considered from the landscape architect's standpoint, the chief essential of the planning of the house and its dependent buildings is that they shall be grouped so as to provide the most economical and practical arrangement which will cause the smallest amount of unremunerative labour and running to and fro. The logical deduction from this statement is that the whole—mansion, stables, lodges, laundry, garage, and outbuildings—should be designed as parts of one block, and that this can be done without disfiguring the mansion or destroying its privacy will be seen from illustration No. II, which shows the plan of the house and administrative annex as designed to suit the particular plot of ground we have been discussing.

In recent years, there has been a tendency to detach the stables and laundry and as many other buildings as possible from the main block, the stables being in one place, the laundry in another, the kitchen garden in another, and the workmen's cottages away from the place altogether, with consequent waste of time as well as lack of composite architectural effect. Doubtless this state of things has, in the past, had its *raison d'être* in hygienic considerations, but the high position to which sanitary science has now attained removes all objections not of an entirely sentimental nature.

Having thus disposed the principal buildings on the ground in collaboration with the domestic architect, we may now proceed to arrange the surroundings; but before doing so it is necessary that we should study the question of upkeep. Owners of new places very properly give careful consideration to the question of the cost of the formation of their gardens, but how few give any thought at the time to the still more important question of annual maintenance. We will suppose, therefore, that the owner of the plot we have under consideration desires to limit the amount devoted to the annual upkeep of the grounds to £350 : 0 : 0. In such a case we must so arrange our plan as to limit the expenditure as follows:—

*Centraliza-
tion in
planning.*

*The
question of
upkeep.*

									£	s.	d.
Head Gardener 30/- per week with cottage							Per annum		78	0	0
Second gardener 22/- do. do. do.									57	4	0
Two garden labourers 18/- do. do.									93	12	0
Strong youth 10/-									26	0	0
Seedsman's account for seeds, bulbs and sundries									22	0	0
Nurseryman's account for fruit-trees, shrubs for making up, etc.									18	0	0
Coke and coal for heating, peat, loam, silver sand, etc... .. .									35	0	0
Sundry expenses									16	10	0
Balance									3	14	0
									<hr/>		
									£350	0	0 *
									<hr/>		

* Nothing is allowed in this statement for interest on money sunk in lodges and cottages inhabited by gardeners, as the exact proportion of this to be credited would be difficult to apportion and would vary in each case.

THE CHOICE OF A SITE AND ITS TREATMENT.

FIG. II.—PLAN SHOWING MANSION AND ADMINISTRATIVE BUILDINGS GROUPED FOR COMPOSITE EFFECT.

FIG. I2.—SECTION THROUGH GROUNDS TO A COUNTRY HOUSE.

THE CHOICE OF A SITE AND ITS TREATMENT.

placing the house on the site, for while the landscape architect will wish to compose the whole subject with the dominating feature, this is useless without the aid of the domestic architect in the placing and arrangement of the chief entrance door and the windows to the leading rooms. If the house is to be complementary to its setting, its arrangements must, in a great measure, be ruled by the design of the latter, and its architectural details be conceived in the same spirit. There is room for hearty co-operation also in the disposition of the service buildings, for while the domestic architect designs the culinary offices, the landscape architect places and arranges the kitchen garden, and efficiency demands that they shall be reciprocally planned; and the same principle applies to every other feature.

Considered from the landscape architect's standpoint, the chief essential of the planning of the house and its dependent buildings is that they shall be grouped so as to provide the most economical and practical arrangement which will cause the smallest amount of unremunerative labour and running to and fro. The logical deduction from this statement is that the whole—mansion, stables, lodges, laundry, garage, and outbuildings—should be designed as parts of one block, and that this can be done without disfiguring the mansion or destroying its privacy will be seen from illustration No. 11, which shows the plan of the house and administrative annex as designed to suit the particular plot of ground we have been discussing.

In recent years, there has been a tendency to detach the stables and laundry and as many other buildings as possible from the main block, the stables being in one place, the laundry in another, the kitchen garden in another, and the workmen's cottages away from the place altogether, with consequent waste of time as well as lack of composite architectural effect. Doubtless this state of things has, in the past, had its *raison d'être* in hygienic considerations, but the high position to which sanitary science has now attained removes all objections not of an entirely sentimental nature.

*Centraliza-
tion in
planning.*

Having thus disposed the principal buildings on the ground in collaboration with the domestic architect, we may now proceed to arrange the surroundings; but before doing so it is necessary that we should study the question of upkeep. Owners of new places very properly give careful consideration to the question of the cost of the formation of their gardens, but how few give any thought at the time to the still more important question of annual maintenance. We will suppose, therefore, that the owner of the plot we have under consideration desires to limit the amount devoted to the annual upkeep of the grounds to £350 : 0 : 0. In such a case we must so arrange our plan as to limit the expenditure as follows:—

*The
question of
upkeep.*

	Per annum	£	s.	d.
Head Gardener 30/- per week with cottage		78	0	0
Second gardener 22/- do. do. do.		57	4	0
Two garden labourers 18/- do. do.		93	12	0
Strong youth 10/-		26	0	0
Seedsman's account for seeds, bulbs and sundries		22	0	0
Nurseryman's account for fruit-trees, shrubs for making up, etc. ..		18	0	0
Coke and coal for heating, peat, loam, silver sand, etc... ..		35	0	0
Sundry expenses		16	10	0
Balance		3	14	0
		£350 0 0 *		

* Nothing is allowed in this statement for interest on money sunk in lodges and cottages inhabited by gardeners, as the exact proportion of this to be credited would be difficult to apportion and would vary in each case.

THE CHOICE OF A SITE AND ITS TREATMENT.

Of course the items will vary somewhat in different years, but the total can be kept fairly constant by so laying out the grounds as to limit the amount of bedding out or other features which entail a great deal of extra work. An incoherently planned garden entails more work than one artistically designed. Broad level stretches of lawn, with a few quaint box-edged flower-beds filled with old-fashioned perennials, require much less expenditure of labour than undulating slopes of grass cut up by tortuous walks and shrubberies laid out in exaggerated curves.

*Extent of
grounds and
proportion
of their
parts.*

Other practical matters influencing the ultimate design must be considered at this point. The first is the scale and extent of the grounds and the relative proportion of the various parts. With regard to their scale and extent, after the question of cost, the size and importance of the mansion, together with the social status of the owner, will be determining factors, while the size of his establishment will decide the extent of the kitchen garden, orchards, laundry greens and other more utilitarian features; and the ages and interests of the members of his family and the amount of entertaining he proposes to do will regulate the number of tennis or croquet lawns.

These requirements, if altogether fulfilled, take second rank to the ideal desideratum that the garden should be a proper setting to the house, in which capacity it serves the double purpose of foreground to the landscape when viewed from the house, and at the same time provides a base or setting for the house when viewed from a distance. The garden is thus the link which connects house and landscape.

*The indi-
viduality of
the site to be
preserved.*

Unfortunately prospective builders usually approach the task of garden construction with preconceived ideas as to what is desirable, and proceed to make the site conform to their ideas, instead of moulding their design to fit the site, thus putting "the cart before the horse." The bane of modern garden design, as of much contemporary art, is its inappropriateness, objects which would grace certain surroundings being obtruded among others totally unsuitable; but the true artist always gets his inspiration from Nature, in this case from the site. By all means have a general idea of your requirements before commencement, but, when you come to the site, then begins the problem which differs from all others, and is the delight of the true architect, who, grouping the necessary features conveniently and compactly, at the same time adorns them with an expressive shape and form which accord happily with the prevalent characteristics of the site and local traditions, using the ready-to-hand local materials wherever possible.

The late J. D. Sedding speaks very emphatically on this point. He says:—"The gardener's first duty in laying out the grounds is to study the site and not only that part of it on which the house stands but the whole site, its aspect, character, soil, contours, sectional lines, trees, etc. Common sense, economy, Nature and art alike dictate this."

"There is an individual character to every plot of land as to every human face, and that man is unwise who, to suit preference for any given style of garden, or with a view of copying a design from another place, will ignore the characteristics of the site at his disposal. . . . To leave a house exposed upon the landscape unscreened and unterraced is not to treat the site or house fairly."

Another point we should bear in mind before setting to work to develop the site is that a garden should impress the spectator as being a place for flowers rather than shrubs, and should always have a cared-for appearance. The arrangement, also, should rather suggest a series of outdoor apartments than a panorama which can be grasped in one view. Art is well directed in arousing curiosity, "always inviting further exploration, to be rewarded with new but never final discovery." A garden ought also to proclaim itself as having been made for the accommodation and enjoyment of Nature's bountiful supplies.

The first features to receive the attention of the designer will be the entrance drive

THE CHOICE OF A SITE AND ITS TREATMENT.

and service road. For the details of this work the reader is referred to a subsequent chapter. It is sufficient here to point out that, as already arranged, the house is placed near the old farmstead on a natural plateau about two hundred yards long from East to West and eighty yards broad, and, as the railway station is about three miles distant to the North-west, the most convenient position for the entrance will be as shewn on the plan (No 10). This demands that the service road and the kitchen garden, laundry green and offices should be to the North-east of the main block. Had the main bulk of the traffic approached from the opposite direction, and the entrance therefore been placed near the North-east corner, the conditions would have been more ideal.

*Entrance
drive.*

The kitchen garden, which is in direct communication with the service block, is, with the surrounding borders, an acre in extent. It is surrounded by walls, that on the North-east side being ten feet six inches high, built of the local stone with a projecting coping and with weather boarding as described in the chapter on kitchen gardens. It has also wires strained horizontally on its South-west face twelve inches apart for the training of fruit trees. The wall dividing the kitchen garden from the pleasure grounds is furnished with pilasters twenty feet apart to impart character to it, and, for a short distance from the garden house at the Southernmost corner, wrought iron panels are inserted in the wall to allow extended views in this direction. At this corner of the kitchen garden the ground is raised on the outside so that there is space under the garden house for a store for tools, etc., with an opening into the kitchen garden. The garden house and the wrought iron bays in the wall are clearly indicated at the right-hand end of the lower portion of the section (Ill. No. 12). In order that the kitchen garden may be used for promenading, as suggested in a subsequent chapter, a long walk is formed communicating with the pleasure grounds and forming, at its Western end, a part of the upper terrace.

*The kitchen
garden.*

Having thus disposed of the more utilitarian portion of the grounds, the pleasure gardens must now claim our attention. Here greater regard must be paid to the existing natural features than on a site devoid of natural beauty and, in order to preserve the coppice woods, the formal gardens are somewhat smaller than would otherwise have been the case. Apparent extent is, however obtained by means of the very strongly marked axial line at right angles to the South front of the house, which is continued across the lake by the garden temple on the opposite bank, as may be seen from the plan (No. 10), and which has necessitated the drawing of the sections (No. 12).

*Main axis
of pleasure
grounds.*

Working outwards from the front of the house along this section line, we must dispose the levels of the made ground in accordance with the fall of the land considered in conjunction with the height of the house and the breadth of frontage, being careful at the same time to allow for an equal amount of cutting and filling so as just to use up all the material excavated, and to arrange so that very sudden changes in level with consequent engineering feats in the way of strong retaining walls are avoided.

The principal terrace is approached from the house either from the conservatory or loggia at the South-west corner or the garden entrance from the drawing room, which opens into the covered way leading to the glasshouses in the kitchen garden (No. 11). It can also be reached from the carriage drive through a wrought iron gate in an arched opening in the wall which divides this terrace from the drive. Its width is forty feet, which is made up as follows. The border next to the house is seven feet wide, then comes seven feet six inches of grass which divides it from the walk ten feet across, and beyond this there is fourteen feet of grass between the walk and the wall, the thickness of which makes up the forty feet.

*The
principal
terrace.*

It is proposed that the upper terrace shall be supported by a handsome balustraded wall, and a broad flight of steps in the centre of this leads down to the lower terrace

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on the South-east side of the house, while another flight leads to the tennis lawn on the South-west. The latter lawn, with its surrounding flower borders, forms a third terrace constructed to a level somewhere between those of the other two, and, owing to the nature of the contours, it is only possible to make it large enough for one court. Others could, if necessary, be provided on the open ground to the North-east of the house.

The lower terrace.

The lower terrace is arranged with a view to breadth of effect. It is intended that effective use shall be made on this terrace of free-flowering perennials and roses to give brightness and colour, but they will be concentrated to prevent a spotty effect and also to emphasize the central axial line of the composition, leaving the rest of the terrace free for broad, unbroken expanses of lawn.

Following the safe principle already enunciated, that the further we proceed from the house the freer should be the treatment of the details of the garden scheme, the retaining wall of the lower terrace, instead of being finely wrought and balustraded like that between it and the higher terrace, is simpler in design and treatment, being built in the local random-coursed rag stone with a plain coping, but, to prevent baldness, buttresses are placed at intervals with pier caps and finials over them, thus breaking the straight line and helping the perspective.

Further still from the house the formal arrangement is continued by the walk down to the lake, which, instead of walls, is enclosed by the clipped holly hedges shown on the upper portion of the section No. 12, thus

FIG. 13.

ensuring a still freer treatment, for however truly the greenery is clipped, it can never have as hard a line as a wall would.

The Lake.

To dam up the stream so as to restore the lake to its original levels is an obvious necessity, and to prevent any hard break between the formal and the natural in the arrangement where the path from the house meets it, a bridge is suggested connecting with a garden temple on the opposite bank.

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There remain only two other prominent features for consideration, the stream and the paddock. The former is left much in its natural state with the exception of the insertion of a little rockwork such as that shown in illustration No. 261, and the enlargement of some of the pools to accommodate aquatic plants. The paddock is placed to the South-east of the house with convenient access to the public road and is brought into the garden scheme by the arrangement of the plantations both within it and near its boundary.

The Paddock.

Of the planting it is not necessary to speak at length as the whole subject is dealt with in a subsequent chapter. The chief points are to ensure shelter at one or two points and to frame and enhance the existing views to the South.

FIG. 14.

We have thus glanced briefly over all the more prominent of the many problems which beset the prospective owner of a new domain in choosing his site and deciding the broad lines on which it is to be developed. Details must be left to be dealt with, each in its own separate chapter. It is of course impossible to illustrate every point in this complex undertaking from one site, however typical that one may be. Thus, the value of compactness and agreement between the several indoor and outdoor departments of a country residence cannot be over-estimated. How far this principle may be carried is shown on the plan in Illustration No. 13, of a house and garden now in course of erection in South Wales. The site is a very elevated one, with a slope to the South-west, though on the Eastern side there is a partly level stretch extending to the highway. As the house has been developed from an old cottage and farm-

The value of compactness in planning.

THE CHOICE OF A SITE AND ITS TREATMENT.

stead it will be seen that the plan is almost ideal in its compactness and convenience for economical working.

Exceptional sites.

In other cases, family, social or commercial interests may outweigh all other considerations and lead to the adoption of a site which, though ideal for a picnic or excursion, does not possess those qualities usually sought for in a domain. Unpromising beginnings, however, often lead to the most interesting results as may be seen from the gardens shewn in Nos. 14 and 15. The first one is known as the Flagstaff, Colwyn Bay, and crowns an eminence which, up to recent years, was the best known point of interest in the neighbourhood, and so appealed strongly to the purchaser, Walter Whitehead, Esq.

FIG. 15.

The second of these gardens is a wooded and level area of seven acres in Buckinghamshire which already possessed a few fine oaks and has been planted all round with a wide belt of trees, of about thirty years' growth, giving on all sides a ragged sea-saw line and effectually cutting off any view of the open country. Though flat, the ground is well elevated, and, from a raised platform erected on the spot chosen for the house, it was possible to take a survey of the surrounding country, composed of well-timbered rolling downs almost entirely free from buildings. From this platform radial lines were drawn on the survey plan in the direction of the best views, and both house and garden planned in relation to these. This involved the felling of a number of young trees and the opening of glades which not only framed the distant views but let a flood of light into the grounds. To ensure that the best views shall be obtained from the entertaining rooms, the house is raised above the mean level and supported by a terrace wall, the tennis lawns being sunk to give it a still further appearance of elevation.

FIG. 16.—GATE PIERS AT VILLA CARLOTTA.

CHAPTER IV.

No parts of a scheme for a residential property call for such thoroughness or mature deliberation as entrances and carriage courts. Here at the entrance are obtained the first impressions of the domain, which, like all first impressions, either of a person or of anything else, are the ones which last. Existing examples present every gradation from the cheap modern over-pretentious arrangement, to the entrance which properly suggests the impersonal and dignified charm of a truly English home, under whose subtle spell you fall immediately you enter its precincts. This noble type of work, characterised by ample proportions, and yet by restraint and quiet dignity, is what all true designers seek to create, only to find that it is the most difficult to achieve. The same qualities of orderly restraint and quiet dignity are essentials of the forecourt, but here the opportunities are greater. A well-considered grouping of house, stables and outbuildings round a sufficiently large space will usually assure an æsthetic composition which needs only a pair of piers and a short enclosing wall to complete it.

First impression gained from style of entrance.

The design of an entrance, whether in the form of gate-houses, lodge-entrances or the more simple and homely arrangement which gives character to many a suburban residence, has a greater bearing on the æsthetic qualities of the residence than many persons suppose. It gives the first impression, and ought to provide the keynote to what follows. This keynote should above all things be truthful, and prepare the mind and eye for what is to follow. For instance, the classic proportions and detail shown in illustration No. 17 is a natural prelude to the beautiful residence in the Italian manner two hundred yards distant. And that shown in the heading to the next Chapter equally prepares one for one of those quaint yet stately Georgian houses of which one finds so many good examples near London. Of course where an entrance is placed far away from the house, then the local note which accords with the landscape ought to be more pronounced.

This index to the architectural qualities of the property is capable of much greater development than the mere differentiations between the entrance to a ducal domain and that to a mountain lodge or shooting box. These mark the two extremes, and are not difficult to attain. Scale and refinement would most beseem the one, and rugged picturesqueness the other. What is much more difficult, but none the less important, is to interpret, in the lodges and entrance as a whole, those subtle distinctions not only of style and scale but also the finer qualities of perfect harmony with environment and the expression of the social or intellectual ideals for which the family may be noted. Just as it may be said that a place fits the family, so the entrance should fit the place.

Fitness and scale.

On large estates, old and semi-retired servants are often placed in these lodges, the wife to attend to the gate, the man to keep the entrance clean and tidy. Under these conditions the lodges are usually very small, and often of one story only, the architectural

Lodges.

ENTRANCES AND CARRIAGE COURTS.

FIG. 17.—ENTRANCE TO THE GROUNDS OF A RENAISSANCE MANSION.

FIG. 18.—A SIMPLE ONE-STORIED LODGE BUILT OF LOCAL MATERIALS.

ENTRANCES AND CARRIAGE COURTS

emphasis being gained by massive gate piers, beautiful wrought-iron gates, and fine wing walls. On the other hand, if the lodges are to be occupied by the gardener or other active servants, they might be treated as the architectural *tour de force* of the entrance,

FIG 19.—SMALL ONE-STORIED LODGE.
(THE LATE MR. DAN GIBSON, ARCHITECT.)

the gates, piers and wing walls being designed on simpler lines. Illustrations Nos. 18 and 19 show simple but convenient forms of small, one-storied lodges, each having a living room, scullery, two bedrooms, a porch and larder, with the usual conveniences, while gate-houses, as distinct from other forms of lodges, invariably need the close association of other buildings, and are usually placed very near the residence, either at one side of the carriage court, as in illustration No. 22, and as in the well-known example at Borwick Hall, or on the side opposite the main entrance to the house as in No. 86. In the older examples these were seldom placed further away than in the well-known gatehouse at Charlecote, unless treated as the entrance to some lordly domain from the town or village, or, in very exposed positions, to

Gate-houses.

give shelter to the grounds as in the case of those shown in illustrations Nos. 81 and 82.

The twin lodges (Ill. No. 21), designed in connection with one of the principal entrances to Pittencreiff Park, Fifeshire, provide, in their general grouping and composition, a transition from the gate-house to the pair of lodges; these were to stand some distance from the house, up to which there is a wide straight avenue. When a gate-house, with an arch enclosing a view over the park or gardens is adopted, such an arrangement as that shown in illustration No. 23, planned and erected for Earl Beauchamp at Madresfield, allows of very varied treatments.

Single lodges usually require much more careful planning in relation to the site than double lodges, for in the latter case, provided the drive is at right angles to the public road, and continues for some distance in a straight line, the mere balance of parts secures a certain imposing effect. Single lodges are usually erected in positions where the drive takes an oblique or curving line from the road. Here the lodge must be placed, and the windows of the living room arranged so as to secure a long view of the road on one side and the drive on the other. This often leads to a certain picturesqueness of outline and composition and an originality of treatment which may give an individual charm to the entrance.

This position of the lodge, in relation to the direction from which carriages approach, and to the ease with which the gates can be opened by the attendant, is important. The arrangement aimed at is usually to obtain the longest view of the drive and of the public road, so that the attendant may have due warning of the arrival of vehicles. How this can be accomplished is seen in the accompanying plan (No. 20), the curved line representing the course the carriage would take in driving to the residence. As indicated by the radiating lines, the living room has a bay window A commanding the drive in both directions, and the entrance porch B is within seven yards of the centre of the gateway. If after passing the gates, the drive curved in the opposite direction, an additional window would be required at E.

*Placing of
the lodge.*

FIG. 20.

ENTRANCES AND CARRIAGE COURTS.

FIG. 21.

FIG. 22.—THE CARRIAGE COURT "WOOD," DEVONSHIRE.

ENTRANCES AND CARRIAGE COURTS.

Lodges placed a little distance back from the wing walls are the most pleasing, though the many considerations which influence their position make it difficult to lay down a general rule. The ground may rise so rapidly from the entrance, as in the case shown in

illustration No. 24, as to give the lodge a stilted appearance if set back, or it may fall so rapidly as to compel their erection close up to the wing walls, when it is necessary to bring the lodge closer to the road. An example of double lodges demanding a very open treatment is shown in the heading to Chapter VI. These were erected as the entrance to Brooklandville, an old colonial classic residence some twenty miles West of Baltimore, U.S.A. Although the public road was wide enough, the macadamized part was very narrow, and therefore it was desirable to provide stretches of grass outside the gates, and give to the latter added importance by the provision of wrought-iron grilles. Illustration No. 23, shows two lodges designed by Mr. E. P. Warren for a client in South Wales; the ground floor of that on the right and

Double lodges.

FIG. 23.

the upper floor plan of that on the left being shown. The drive, as planned by the author, is for a considerable distance perfectly straight, and is planted as a broad avenue, which when fully grown should make a dignified approach to a fine modern mansion which occupies an elevated site. In No. 25 are illustrated a pair of workmen's cottages as lodges, placed at some distance from Dunchurch Lodge, Rugby, and at the junction of the drive with the Rugby road, and designed by Gilbert Frazer, Esq. Unfortunately, the photograph was taken before the climbers and surrounding plantation had been given time to add their picturesque and softening touches to the composition. There is another lodge of more distinctly architectural pretensions at the entrance to the gardens.

FIG. 24.

ENTRANCES AND CARRIAGE COURTS.

FIG. 25.—ESTATE WORKMEN'S COTTAGES AT DUNCHURCH LODGE, RUGBY.
GILBERT FRAZER, ESQ., ARCHITECT.

FIG. 26.—LODGE AND GARAGE BY W. LEIPER, ESQ., F.S.A

ENTRANCES AND CARRIAGE COURTS.

Owing to the happy combination of homely circumstances they present, both single and double gate lodges placed at the ends of long park drives often blend perfectly with their picturesque landscape surroundings, suggesting to the passer-by a scene of peaceful habitation. It is this delightful homeliness above every other quality that is to be sought in lodges when far removed from the mansion; in these and similar positions rustic character need not be sacrificed to style. Given the right surroundings, this is much to be preferred to making the lodge appear as an offshoot from the mansion. Illustration No. 18 gives a solution of this problem of an entrance so far removed from the mansion as to suggest a design which harmonizes with the district of which it forms a part, rather than the mansion to which it belongs.

In choosing a position for a lodge, although a backing of foliage is desirable, do not place it amidst or too near trees, but allow ample space for sunshine and flowers. A common mistake is to omit the yard and provision for the ordinary household requirements, such as drying clothes, which can be arranged with privacy by enclosing a piece of ground within hedges or walls.

All examples referred to so far are connected with more or less extensive domains. There is a tendency for them to become sub-divided to meet the growing demand for small compact country residences which the motor car has brought within the reach of so many persons who for business reasons have hitherto been compelled to reside near railway stations. Such properties are often small in extent, ranging from five to twenty acres, which must be so developed as to secure the delights and conveniences of larger estates. They must therefore be carefully and compactly planned, providing, in addition to a good garden for use and ornament, a small garage or stable, with chauffeur's apartments, coachman's or gardener's cottage. Here necessary compactness of plan often leads to a most effective grouping of garage, stables, lodge and entrance. The result is usually better than a series of scattered buildings, and indeed often adds a note of interest to the garden. Illustration No. 26 shows such an arrangement. Here the residence stands on an elevated site and is some one hundred yards distant. This picturesque and well-planned group was designed by Mr. Leiper, A.S.A., of Glasgow.

Grouping of garage, stable, lodge and entrance.

The grouping of the necessary accessories to small country houses will undoubtedly be further developed, and out of this may grow a distinctive character and style; but, as each site will need special consideration, no fear need be entertained of monotonous repetition.

It has always appeared to the writer, that the suburban house, on a site of perhaps only two acres, requires greater care in its placing than any other; such houses when built on the South side of the road, are invariably placed near the public highway, with little more than a carriage court or even only a covered way (Ill. No. 27) to separate them. Formerly the house was often a plain Georgian structure, with a beautifully designed portico entrance. This refined and scholarly phase of English domestic architecture, whether near a town or in the country, calls for a corresponding solidity and

richness in the entrance piers, wing walls, and gates. At Fairfield House, near Bolton Abbey (Ill. No. 48), piers stand at either side of the entrance to the North Garden, which was probably at one time the carriage court. The wrought-iron gates, which from their position and proportions must have been very beautiful, have disappeared. The Carshalton gates and piers are better known, but both serve to show how much the architects of the later

Houses near the highway.

FIG. 27.

renaissance valued the entrances as points of emphasis, often restraining expenditure on the house that they might enrich them.

The gate piers at Wood, a modern residence on Dartmoor, are of more modest

ENTRANCES AND CARRIAGE COURTS.

FIG. 28.—ENTRANCE TO A DOMAIN IN DEVONSHIRE.

FIG. 29.—ENTRANCE TO CARRIAGE COURT, DUNCHURCH LODGE, NEAR RUGBY.

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dimensions, and on that account perhaps better adapted to the majority of entrances (Ill. No. 28). They are built of roughly squared granite, with simply detailed capitals to

permit of the molds being cut by local workmen, the whole surmounted by lead urns. Other columns of similar height, but in brick, are shown in No. 34. Others in brick and tiles and octagonal on plan are shown in illustration No. 35.

Where a homely quaintness is sought after rather than architectural expression, much may be done with the simplest local material, whether brick and tile, granite, limestone, millstone grit, or slate rock as in Westmorland and North Wales. Where there is neither rock nor brick of sufficiently good quality to stand the strain of gates, then any material which comes handiest may be built up

Gate piers and local material.

FIG. 30.

in cement and completed in cement rough-cast, with a flag or simply dressed cap, which may be surmounted by a ball, sugarloaf, or other suitable finial. An example in rough stone is given in No. 31, and of brick in Nos. 34 and 35.

For the gates themselves, wrought iron in some form or other, either plain or ornamental, is the best. No reference has been made to those fine achievements in the smith's art which are the fitting accompaniment of the palatial mansion, but a study of them is not only interesting but helpful to all who contemplate the erection of new entrance gates, even though they may necessarily be on a more modest scale. Considered from the practical point of view however, wrought iron lasts longest and needs little repair beyond an occasional coat of paint. Unfortunately no material lends itself so readily to the manipulation of the wholesale manufacturer who, by his machinery, supplants the craftsmanship of the worker. In no branch of applied art does

Wrought iron gates.

FIG. 31.—A SIMPLE ENTRANCE IN GRANITE AND WROUGHT IRON.

ENTRANCES AND CARRIAGE COURTS.

the skill of hand and head of the worker count for more than in the forging and fashioning of iron, and for this reason a perfectly plain gate carefully constructed is better than an elaborate one turned out by machinery.

As some proof that the clever craftsman is still with us I illustrate three recently constructed carriage gates. No. 28 shows the gates at "Wood." No. 29 the gates to the carriage court at Dunchurch Lodge, near Rugby, and Nos. 32 and 33 to the principal entrance, Little Onn Hall, Staffordshire.

Gates in wood and iron combined.

A combination of wood and iron has often been tried, sometimes with success. There seems no valid reason why this combination should not oftener have been resorted to, except on the ground of the difference between the lasting qualities of the two materials used. Here are two designs, Nos. 34 and 35 which combine both materials, the iron being treated constructionally to strengthen the woodwork and the gates as a whole. Teak is an excellent timber to use in conjunction with iron, and so is English oak, but pine, even when well painted, seems to decay quicker by contact with it.

Wooden gates.

For most people an oak or painted gate must suffice. For detached villas and even larger houses, well-designed gates, partly panelled or arranged with open bars and strong substantial strap hinges and hung to squat, strongly-built stone or brick piers, such as those given in illustration No. 69, are both effective and inexpensive. Over-elaboration

FIG. 32.—ENLARGED DETAIL OF FIG. 33.

FIG. 33.—ENTRANCE GATES AT LITTLE ONN HALL, STAFFORDSHIRE.

ENTRANCES AND CARRIAGE COURTS.

spoils, and at the same time adds unnecessarily to the cost. Simple, well-proportioned gates, of good construction, are invariably the most satisfactory, whilst the money thus saved would often pay for the erection of stone or brick hanging piers. Gates which are not constructed on the principle of the five-barred gate, i.e., with diagonal braces, are better in pairs. The usual setting-out widths for entrance gates, from that for a main entrance to an important property down to a single gate to a suburban villa and wing wall, are shown on illustration No. 36.

FIG. 34.

FIG. 35.

In planning the wing walls every designer naturally has his own ideals as to what will suit any given position. Practice, and failures in practice, yield useful object lessons and settle points which, although they involve a few restrictions, repressing flamboyancy, yet eventually help towards right methods. *Wing walls.*

As previously stated, the distance from the line of roadway to the entrance gate is dependent on many things. If the drive runs at right angles to the road, it is advisable to place the gates far back to allow a turn of large radius for carriages. If the public road be narrow in proportion to the amount of traffic upon it, it becomes all the more necessary to have some form of well-recessed wing walls.

FIG 36.

Broadly speaking, there are three forms of wing walls, viz., the bell and cup shapes, formed by convex and concave lines, and a combination of the two by O. G. lines. They are shown in the accompanying sketch (Ill. No. 37), and of these there are many variations and developments, such as splayed wing walls. For entrances placed at right angles to the road, the cup-shaped plan is generally most effective, as it allows a good outside green, which may be protected by posts and chain. The next best is the O. G. line ; but for drives entering at irregular angles the bell-shaped is preferable, the convex lines being

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more adaptable to an unsymmetrical plan and wing walls of unequal length. Where the entrance is at the end of a street, as in the accompanying sketch plan (Ill. No. 38), and the residence is of sufficient importance, the outer pillars are effective if in a line with the outside width of the street, the wing walls, being concave, describing a quarter of a circle; or frequently a good effect may be obtained without placing back the line of the gate, by simply arranging the gate piers in a line with the boundary fences.

FIG. 37.

*Laying out
curved wing
walls.*

The most difficult entrances to set out with satisfactory lines are those which are of irregular shape, i.e., with unequal wing walls. Nothing could be more deceptive to the uninitiated than the effect of curves. Somehow, even when they have had much careful planning, they lose that easy flow of line which on paper looks so pleasing, for there is all the difference between a flat scale drawing and the lines as laid down and viewed in perspective. When dealing with a long curved wing wall to an entrance as in illustration No. 20, a good method is to have the ground roughly graded and a rope line laid down along the proposed curve. For this purpose, obtain an old cart rope, or any rope or long garden line, free from stiffening; tie one end to a peg fixed at the point where the wing wall is to strike the pillar, and fix a second peg at the extremity of the curve; having thrown out the line between these two points, walk from the first peg along the proposed line of fence with rope in hand, allowing it to pass lightly through the half-closed fingers, repeating the operation until the line is pleasing to the eye. Having fixed the curve, place ranging poles at regular distances along it, and imagine the inter-spaces brick or stone wall, when the result will generally be to make the line longer or flatter by carrying the first peg further along the road. Curved lines always appear more full and rounded when viewed in perspective. If some architectural character and dignity are desired, then from these actual lines make a survey, and thereupon design the elevations.

The carriage entrance, if sufficiently important, should be provided with side gates for pedestrians on one or both sides; these may be any width from three to five feet, and the parapet or sidewalks, where these exist, with proper kerb and channel terminating against the pillars. The opening for a carriage gateway is usually 12 feet, but if the gate pillars and general arrangement are on a large scale, 14 feet is not too wide; but these dimensions cannot as a rule be exceeded with satisfactory results. Where wrought iron is used and a very open effect is aimed at, fixed side panels with strongly braced and strutted hanging bars may be adopted.

FIG. 38.

*Carriage
courts.*

In the old examples of carriage courts or turns, the shape and size are decided by the plan of the house, of which they were really a part. The house was sometimes arranged as a square, with a court in the middle, or as an "E," "H," or "L," shaped block of buildings, with the court in one of the recessed parts. In an "E" shaped plan, as No. 39, the central wing often consisted of the entrance porch only, leaving the end wings to project a long distance beyond. In the "H" plan the recess at one end was often used as the carriage court, and the one at the other end as kitchen court. In the "L" plan the court was protected on one side only. At Blicking Hall, Norfolk, there

is an inner court, the space for carriages being between the stables on one side and the offices on the other. In many cases there were two carriage courts, a plan which has been adopted for Graythwaite Hall (Ill. No. 41), and which may in future have to

FIG. 39.

be resorted to in those places where the existing court cannot be enlarged. In the planning of a modern house this is seldom done, the chief entrance being on the line of the main block, or at the end of a projecting wing, with no building whatsoever to flank either side of the carriage turn, and usually no terraces on the entrance side; the park, pastures, and natural portions of the grounds being allowed to run up to the edge of the gravelled carriage space. This change of plan is probably responsible for the curved or circular form of court, the absence of architectural limitations giving

FIG. 40.

the landscapist an opportunity of introducing his curves, as in illustration No. 40. This feature is one of the most sensible things he has ever devised, because the shape, if well considered, indicates the lines which a carriage would most naturally follow when driving to or from the front entrance.

In certain recent examples, especially where Georgian traditions are followed, there is a tendency to return to the architectural carriage court, by enclosing the remaining side with gate-houses or high masonry, as at Wood, N. Devon, (Ill.

FIG. 42.

No. 22), and at Thornton Manor,

where the carriage court is enclosed from the public highway by the gatehouse illustrated in Nos. 81 and 82. In others a pleasing and protected court is formed by projecting the kitchen wing on one side (the windows being arranged on the opposite side), and the billiard wing on the other, frequently enclosing nearly the entire court. This desire for a well-screened carriage court is eminently

FIG. 41.

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sane and practical, and if it cannot be obtained by any other means, then the enclosure should be protected by hedges or even climber-covered trellis.

Whatever the form adopted, there are three conditions which should be carefully observed. First: the area of gravel between walls should be much greater than when the court is surrounded by grass, not less than 60 feet by 80 feet if to accommodate

FIG. 43.

motor cars ; if surrounded by level grass, a gravelled space of 45 feet by 65 feet would suffice. These are medium widths, quite apart from the amount of gravel space suited to the position which the court or carriage turn occupies. Of course, in every case, æsthetic considerations, taken in conjunction with the special requirements of the particular case, will determine the size as well as the placing of the carriage court. To lay down rules for universal adoption would be worse than useless. The scale of the entrance façade of the house is, of course, the predominant factor, while the contours of the surroundings and other local influences, as well as the nature and amount of

FIG. 44.

Shelter for drivers.

traffic, will need consideration. Again, where the drive is not broad enough to allow two strings of vehicles to pass one another easily, as may often be the case in very short drives, it may be necessary to give additional room for vehicles waiting their turn to leave the court. In very few instances will provision for the inclusion of flower beds be necessary, a clear line of demarcation between the approach and the pleasure

ENTRANCES AND CARRIAGE COURTS.

grounds being one of the regular functions of the carriage court. Where space permits, nothing looks better than a combination of grass and gravel as in Nos. 42 and 47, a treatment seen to perfection in the carriage courts to many of the stately homes of England. Secondly: the courts or turns should be level, or with slope only sufficient to throw

off surface water. What has been said elsewhere with reference to the necessity for giving the house a level base to stand upon by means of terracing, bears with equal force on the planning of carriage courts. Indeed what is done for the garden front of the mansion by the former, is accomplished for the entrance façade by the latter, and, even though giving the carriage court a level base should make it necessary to curtail its dimensions, this rule should be

FIG. 45.

strictly enforced. In emphasizing this necessity, I am, of course, referring to the whole of the area or plateau occupied by the court. That the gravelled area for traffic must be flat, or almost so, goes without saying, for a steep cross fall would be extremely dangerous to carriages turning round to leave the court. Thirdly: Recognizing that many country houses are centres of social life and activities which make considerable demand on a late service of motors and carriages, the comfort of chauffeurs and drivers

FIG. 46.

FIG. 47.

should be considered by arranging ample shelter. This may often be secured most simply by porters' lodges, such as were proposed for Holker, and illustrated in Nos. 43 and 44. Where there are projecting buildings or high walls, architecturally treated recesses may be inserted there. These recesses are usually sufficient, but in very exposed positions they should be supplemented by masses of plantation, not high enough to give the house a buried appearance, but still effective in screening carriages and the porch. That provision for the shelter of drivers while waiting or in charge of restive animals which cannot be left for a moment, has not been more often seized upon as a factor possessing almost unbounded æsthetic possibilities, is remarkable. They would be particularly useful in this connection: in cases where

the court is enclosed by long blank walls which need the relief which this insertion would provide, or where there is an awkward corner which seems to defy artistic treatment.

Residences are often built with entrances in such positions as to necessitate carriage turns which have steep banks falling away from them. Wherever this is so, even though wind screens may not be required, protection should be provided, as nervous horses are apt to be affected with a feeling of insecurity unless something is done to prevent this. At Capernwray Hall a yew hedge three feet thick and five feet high was to be planted, cut square, with shaped yew pillars every twenty feet, on the top of the slope which runs the full length and across one end of the gravelled carriage turn (Ill. No. 45). This simple addition is all that is required to make this ample though exposed and dangerous-looking carriage space perfectly safe.

ENTRANCES AND CARRIAGE COURTS.

Most of the garden plans illustrated in this work include a carriage court. A study of these, together with the sections and descriptions accompanying them, show why each particular form is adopted.

*Small
gardens
better with-
out drives.*

In many places it is advisable to dispense with a drive or carriage court, such as small houses placed on small plots of land, because the privacy of a garden, and even the possibility of a garden, are destroyed by the ground monopolised by a drive or carriage circle. In my own tiny garden (described later among the examples of garden design) had space been provided to drive up to the front door, there had been practically no garden; whereas, by placing the house near the road, a space of ground on the South and West is gained as compensation for the occasional short walk from the door to the carriage.

Where a house is placed near a public road, an arrangement on the lines of the carriage court at Chiswick House (Ill. No. 46) would be advisable, or better still, a court the entrance to which can be set back well from the line of the roadway, as suggested on the accompanying sketch (Ill. No. 47). There are also many cases where, even though the house may be further from the road than in either of these examples, it may still be desirable to save the space which would otherwise be given up to a drive and carriage turn and connect the highway with the house by a covered way. Where the windows of the entertaining rooms are so placed that they would inevitably be overlooked from the carriage is an instance of this, or again, where the disposition of the house on the site would otherwise prevent privacy in the pleasure grounds. There are many instances in the suburbs of all large towns where land is too expensive to allow of large grounds where much would be gained and nothing lost by doing away with the "carriage sweep," as it is usually called, and substituting for it a covered way connecting the house with a carriage stance obtained by recessing the boundary wall on either side of the gateway. By a proper attention to the details of the covered way, a most delightful cloistered effect can often be given to the garden on one or both sides of it.

FIG. 48.—ANCIENT GATEWAY AT FARFIELD HOUSE.

CHAPTER V.

In this chapter it is proposed to discuss the planning and design of those gates and fences which could not be included in the previous chapter dealing with entrances and carriage courts. These are two features which offer endless possibilities for effective treatment, and it is not too much to say that whatever the material employed, there is no case where either a gate or a fence is required about the estate which will not allow of the exercise of taste in its design and arrangement.

While in large gardens attached to historic mansions care is usually exercised in these matters, in other cases it is more often the rule than the exception to find that the necessary fences and gates have been placed anywhere convenient and selected from the wholesale manufacturer's catalogue, without any conception of the fact that, without impairing their usefulness in the least, they may be so arranged as to enhance the beauty of the grounds they enclose or partition. Gates also have the further advantage that they may mark the end of a vista or, by a judicious use of open panels, may half reveal and half conceal the beauties of the garden beyond, and so tempt to further exploration. Fences, on the other hand, may support festoons of climbing roses or other greenery, may be part of a terrace scheme or pergola, or may lead the eye forward along a vista, or otherwise help the composition of the scene as a whole.

Æsthetic possibilities of gates and fences.

In the old examples, both gates and fences were made to serve as ornaments to the gardens they graced, and the skilful design and clever craftsmanship expended upon them were doubly pleasing because legitimately applied to utilitarian objects. In making new gardens, although they may not be in the same styles as the old work, it is equally desirable to give character and distinction to such details by attention to their design and placing. This does not mean that they should be overloaded with needless ornamentation, but that their necessary parts should be so designed as to harmonize with one another and with their surroundings.

The almost infinite variety of fences of all sorts, wood, stone, brick or iron, or a combination of any two of these which is obtainable, should help to make the choice of one suitable for every position very easy, besides which there are hedges of many kinds and the sunk fence or ha-ha for occasional use in very special circumstances.

Local conditions will often determine the character of a fence, especially in the smaller garden or the more remote portions of larger ones, and its character, whether elaborately finished or rustic, will depend on its relation to the residence and the purpose it is to serve. Too much can scarcely be said in favour of the old-fashioned hedgerows in districts where they thrive and, in well-wooded localities where stone is plentiful, for stone walls or, where the conditions are favourable, for a combination of the two, stone dykes for example surmounted by hedges, or hedges planted in the open, with walls where there are overhanging trees, or in other positions detrimental to the former fence.

GATES AND FENCES FOR GARDEN AND PARK.

*Destruction
of fences
on new
property
condemned.*

The almost infinite variety of trees from which hedges may be grown, makes their inclusion in every part of the domain quite appropriate. They are however more conveniently dealt with in the chapter devoted to formal and clipped trees, and it will be sufficient here to protest against the somewhat unaccountable custom of demolishing all internal fences on new property. Of course if a tall and prominent hedge cuts like a knife right across the prospect, destroying the composition of the views and competing with the onward sweep of a vista, it must be removed and something less obtrusive put in its place, but in most cases there can be no more mistaken policy than the removal of the hedges on new estates in the attempt to gain breadth. Unless the area under treatment is most exceptionally fortunate in the amount and disposition of its timber trees, the result will be not breadth but desolation and that sense of barren newness which it is the aim of the Landscape Architect to avoid at all times. The features which impart local character to a district are entirely destroyed, and instead we have an expanse of wind-swept land without protection for stock in stormy weather or shade in heat. Far better would it be to wait until the newly-formed plantations have more or less matured, when the gradual rearrangement of the fences may be undertaken without even temporary disfigurement of the estate.

FIG. 49.

*The ha-ha
fence.*

Estate owners are not usually averse to walls or hedges to screen them from the public highways and yet they fail to see the equal necessity for a definite line of demarcation between portions of the estate serving different and even æsthetically incompatible purposes. It was as a result of this dislike of internal fences, that the ha-ha or invisible sunk wall came to be invented, the idea of which was usually to make a large meadow look as though it were part of the garden, instead of which it usually resulted in making the house appear to be placed down in the middle of a field without either protection or privacy. As already stated, there are exceptional cases where the ha-ha may be employed with success, but generally speaking it is to be avoided. From the very fact that it partakes of the nature of an extremely obvious trick on the senses which is almost immediately discovered, it cannot be permanently pleasing, especially in those numerous cases where it degenerates into an untidy ditch. In most instances it gives the impression of presenting a very poor excuse for unwarrantably curtailing the extent of the gardens, and is a silent confession that the grounds should have extended further than they do into the meadow and that a trick has been resorted to, to hide their

FIG. 50.

meagre area. Again, a fence which makes it appear as though the cattle in the meadow could come right up to the windows of the house or walk over the flower beds cannot be satisfactory. It will often be found too that the ha-ha has proved

insufficient to prevent intrusions and has been supplemented by untidy wire contrivances which have entirely defeated its original purpose, and there have been cases where short-sighted persons have walked over the edge of the hidden wall and fallen into the ditch.

To sum up, the same principle should apply to fences as to everything else in a garden. Instead of being a sham or a make-believe all the garden appointments should honestly express their functions, and their artistic qualities should be inherent and not superimposed. In every case the purpose or purposes of the fence should be recognized,

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such as, for instance, screening a public road, giving protection from winds, dividing two estates or portions of the estate or gardens, or for training fruit trees against, and then that character of fence should be adopted which best fulfils the requirements of the case and the prevailing architectural conditions.

FIG. 51.

FIG. 52.

As may be seen from many of the plans illustrating this work, the grounds to a mansion may often be almost entirely fenced in by the terrace and fruit walls. When the house stands in its own park, this is the most economical arrangement, as the balustrade necessary to grace the terrace serves the double purpose of ornament and use. Where the lawn extends beyond the terraces, however, some form of enclosing fence becomes necessary, and while it need not by any means be a solid wall, it should be substantial enough in appearance to give the impression of adequate protection against the inroads of cattle and suggest seclusion from the outer world. A more or less open arrangement, through which the grass of the Park can be seen and which will not cut off the view, will usually be preferable, and where the fence is straight and the ground fairly level, will not be difficult to obtain. A series of pillars in local stone or brick placed at regular intervals with the spaces between filled in with wrought-iron or open wood panels, such as those shewn in Nos. 51, 52 and 53, or, in more important cases, a dwarf wall with well-designed wrought-iron railings above, as in No. 50 would prove suitable. Here again local conditions should suggest original treatments. Thus in No. 49, the arrangement of slates and wires was suggested by the contrivances erected on the tops of walls in the Lake District, to prevent the hardy mountain sheep from escaping. In other places peeled larch might be used in connection with stone. Both forms produce quite a rustic fence only suitable for use at some distance from the residence, unless it were small or designed on very simple lines, while, if wrought wood panels were used, as in No. 54 the effect would be more finished.

Fencing exhibiting local characteristics.

FIG. 53.

Where the ground is undulating and the fence follows the contours in sweeping lines, a strong and simple pattern of continuous bar railing is often suitable, but what is known as unclimbable fencing, especially the pattern adopted by various railway companies, should not be used unless a shrubbery is planted in front of it or a hedge trimmed square and a few inches higher than the railing, when it forms a neat and serviceable arrangement, though perhaps a trifle hackneyed. Next to barbed wire or broken

Unclimbable fencing.

glass, however, nothing is more out of harmony with garden scenery than the spiked heads of unclimbable fencing unscreened by such a hedge as that just described. Strained wire too, as usually used, is quite unsuitable, though a nice fence may be made on the lines of the fruit espalier shown in No. 307 with oak posts and top rail. This form of fence, if arranged in straight lengths, is simple and effective, and there is much scope for

Strained wire fencing.

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originality in the shape given to the heads of the posts. In a similar fence shown in the view in gardens at Wraysbury near Staines (No. 55), the posts stand up about two feet six inches above the top rail, in the form of sugar-loaf finials which form supports for climbing roses. In this case, as part of the fence is curved, the wires are omitted and the top rail consists of a plain round galvanized bar. Another simple wooden fence, consisting of a post with a cut and shaped head and a handrail placed angle-wise, is shown in No. 56. This form is particularly useful in the wild garden or at the side

FIG. 54.

FIG. 55.—ROSE FESTOONS AT THE GRANGE, WRAYSBURY.

of a woodland path where the ground slopes away rapidly so as to render it dangerous.

There are many positions where a solid fence or wall would be inappropriate, as when a rounded mound, forming the middle distance of an extensive view from the residence, is the limit of the property. In such a case one of these simple arrangements of post and rail, or post, rail and wire, would be most useful.

*Peeled larch
fencing.*

Another form of wooden fence, which, however, is more suitable for use in connection with cottages or lodges than in the garden proper or the home park, may be made from peeled larch unwrought, with strong posts, top and bottom rail filled in with a lattice made from the same material split down the centre of each piece and the flat surfaces placed together as in No. 57.

*Oak
cord-wood.*

A similar fence is often made from the smaller limbs of oak trees known as oak cord-wood, but, as these consist almost entirely of sap-wood, they will only last a very short time, and even pieces four inches thick will rot through at the ground level in the course of a year or two. The writer has met with many cases where this material

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has been extensively used under the impression that all oak was very lasting, with consequent disappointment to the users, and the fact that, when new, it is often so hard that it is almost impossible to drive a nail into it, tends further to deceive the inexperienced as to its durability.

Another cheap fence for cottage gardens and probably the most generally useful

*Lattice
fencing.*

FIG. 56.

which could be contrived, is constructed of carpenter-made lattice framed between strong square posts, three-and-a-half inches in dia-

FIG. 57.

meter and spaced five to six feet apart. The bottom rail should be kept clear of the ground, say about three inches, and the top rail wethered or rounded on its top edge and grooved to receive the laths, which should be about $1\frac{1}{2}$ by $\frac{3}{4}$ inches thick and spaced eight or nine inches from centre to centre. A useful height for such a fence is about three feet six inches, and if it is not to be painted, the posts should be of oak, otherwise larch or pitch pine are better. Pillar and climbing roses, honeysuckle, and other flowering climbers can be most appropriately trained over it.

Another form of fence, with framework of similar construction, is the old upright paling, which may either have the posts rising from the ground or from the top of a dwarf wall. The uprights or balusters may be $1\frac{1}{2}$ inches by $1\frac{1}{2}$ inches, set angle-wise or square, or flat pieces about two and a half inches broad and three quarters of an inch thick with the top ends cut to a pattern may be substituted. The possible variations in the treatment of the details are unlimited. In Holland, the tops of the uprights are shaped and coloured to represent tulips or other flowers and the remainder painted white, but such a treatment would generally appear exotic in this country, though many ideas can be culled from the quaint Dutch gardens and also from Japanese examples. Travellers in the latter country speak enthusiastically of the artistic taste and clever craftsmanship displayed in the fences. Even the tiniest gardens are fenced by paling which, in character, is simplicity itself, exhibiting perfect taste in the spacing of the several parts, the sizes and thickness of the woodwork, or woodwork and stone combined as the case may be, minute attention being given to details, and all without sacrificing in the slightest the durability of the work, but rather the reverse, clever contrivances being made to nullify the effects of the weather by means of a pantile roof over the railings or by crowning each post with a metal cap.

*Upright
paling.*

A distinct class of wooden fence is obtained by the use of split or riven oak, which is particularly appropriate for the division of suburban gardens or as a protection from

*Riven oak
fencing.*

FIG. 58.

a footpath or road. It has the merit of being cheap when its durability is considered, and looks picturesque when weather-stained, and particularly so when overgrown with climbers. As will be seen from Nos. 58, 59 and 60, the material allows of varied and original treatment and some forms are decidedly ornamental, though the ordinary pattern,

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which, on the front side, shows nothing but a series of overlapping split battens arranged vertically and cut to the same height, will often meet all requirements. This simple

FIG. 59.

FIG. 60.

pattern may be given a little more finish by cutting the heads of the posts to a variety of designs, by the addition of an oak capping to the railing or by varying the lengths of the split oak spads. No. 60 shows a fence having all three features. A combination of split oak and oak wattles also split is shown in No. 59, while No. 61 shows much the same fence built in between brick piers to screen off the kitchen garden from the grounds designed by the author for T. Pegram, Esq., of Hoylake, Cheshire.

Stone walls.

The design and arrangement of stone walls depend so much on local conditions that it is impossible to do more than indicate a few main principles for general application. The delightful garden wall at Alton Towers, Staffordshire, which has been so often illustrated, for instance, though so appropriate to its surroundings, would be quite out of place in most circumstances. A wall if rightly placed cannot however fail to be pleasing in any locality in which there is local stone from which to build it, though a brick wall in a stone district or a stone wall where it is obviously an imported feature may be equally out of place. The prime cost, of course, will be higher than for a

FIG. 61.

wooden fence or even ordinary iron railings, but it will also be more durable. It is, however, dressed or tooled stonework which is costly and, for ordinary estate work, dry built walls (i.e. without mortar) provide all that is necessary, especially when the coping stone can be set in cement.

*Tasteful
use of local
materials.*

A well-constructed dry wall is always pleasing and each district has its own mode of building to suit the character of the local stone, whether quarried stone, slate, cobbles, rubble or flints or a combination of any of these, with or without bricks or tiles. Where, for instance, cobbles, roughly-squared stone and slates can be obtained, quite charming effects may be produced by combining them, as in No. 62, and examples of such walls

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FIG. 62.

are often found along the Deeside in Aberdeenshire, a county in which walling has been brought to the perfection of a fine craft. Flints and stone, flints and brick, or flints, brick and tiles, all may be arranged in many tasteful and original combinations, and the flints themselves may either be used whole so as to present a rounded surface or split in two to show the dark glass-like interior.

For walls nearer the residence, where a stronger construction and more finished appearance are necessary, squared rubble laid in mortar may be used with a hog-back or rounded coping, as in No. 63 or No. 64, where two courses of slates have been inserted under the coping to give a little relief. No. 65 shows a similar coping and No. 66 the same with two courses of tiles inserted. The two latter could be closely

Coping.

FIG. 63.

FIG. 64.
STONE WALL

FIG. 65.

FIG. 66.

FIG. 67.
BRICK WALL

copied in brick where necessary, and instead of the two courses of tiles, there may be three courses, of which the middle one consists of roofing tiles placed so as to show the "frogs" as in No. 67, so as very cheaply to obtain the effect of a dentil course.

By the ingenious arrangement of roofing, paving and the many shapes of ridge tiles, quaint and effective copings may be evolved suitable for all sorts of positions where a brick wall is necessary, and in some parts of the country oval land-draining tiles are made with ribbed exterior surfaces which make a simple and effective balustrade. Open panels too may be constructed by piling curved ridge tiles in a symmetrical manner. Walls dividing small gardens or surrounding rose, fruit or other enclosed pleasaunces, may often be improved by the adoption of some of these methods.

It cannot be too strongly urged, however, that, from the æsthetic standpoint, the least satisfactory boundary wall is that which is built of machine-made red bricks of even colour such as are common in Lancashire and North and South Wales, but there are many cases where a deep-coloured local brick is made, not too even in shade, which is admirable, while grey or brindled rough bricks, especially if only two inches thick, make an excellent and not very expensive boundary or for dividing adjoining villa gardens.

FIG. 68.—GARDEN GATE WITH BELLS ATTACHED TO RING WHEN MOVED.

Brick walls.

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Terrace walls, fruit walls, and the wing walls to entrances are dealt with elsewhere, but much that has been said of garden walls in general applies equally to them.

Wrought-iron fences.

The employment of wrought iron for garden fences has not of recent years received the attention it should, partly, no doubt, on account of the initial expense and partly from a failure to discriminate between wrought iron of good workmanship and cast iron

FIG. 69.—SIMPLE WOODEN ENTRANCE GATES.

imitations of the old work. In the best periods of English garden design, wrought iron was always held as almost essential to its highest development and might to-day be employed more frequently when garden improvements are under consideration. Nothing could be better for the fences between the forecourt of a Georgian residence and the highway, as at No. 50, where it is desirable to hide as little of the façade as possible. In such cases the fence should generally be designed on perfectly simple lines with the ornamental emphasis occurring seldom and concentrated at special points to emphasize the main lines of the composition as a whole. This result is most often attained by reserving the ornament for pilasters or gates, as in the design just referred to.

Having thus briefly sketched the more important of the various kinds of fences which may be used in the garden, we may now consider the gates to be used in conjunction with them, and without which they would be incomplete.

Large entrance gates.

Large entrance gates are dealt with in another chapter, and the number of folding gates which are required for other situations is more or less restricted, so that it has only been thought necessary to give designs for two, one in iron and the other in wood. The first, No. 70, was designed as part of the scheme for laying out gardens at Greenwoods, Stock, the architecture of

FIG. 70.—GATE AND STEPS AT GREENWOODS, STOCK, ESSEX.

FIG. 71.

GATES AND FENCES FOR GARDEN AND PARK.

the mansion demanding a quiet treatment of the surrounding details; and the second (Ill. No. 69) would be useful where access to the home park were required for carts, etc., from somewhere on the route of the main drive or other rather prominent positions.

Reference to any of the plans given in this book will show the important part which

FIG. 72.

*Postern
gates.*

postern and other small gates take in a well-designed garden. As to the character and design of individual gates, everything depends on the position and importance of the walks to which they give access, and the style of the residence to which they lead. The steps and gateway just referred to and which are shown in illustration No. 70, occupy a position on the central axial line through the house, and are placed on the terrace which divides the old garden from the new extension, a position which justifies the ornamental treatment adopted. The gateway in the balustraded wall shown in illustration No. 50 connects a large carriage court with the home park, the importance of the residence demanding such an arrangement. In other cases, to mark divisions between the various parts of a garden, quaintly-designed lych-gates may be used, or little gatehouses such as that shown in No. 71, which would serve the purpose of an arbour as well as a gate canopy.

In other cases, where simpler treatment would be more in harmony with the surroundings, either of the gates shown in Nos. 72 and 73 might be used. The first of these was erected at Wraysbury, near Staines, and connects the lawns and paddock. It is more elaborate than would usually be required for such a position, but was justified by its surroundings. In other cases, the one shown in No. 73, and erected at Shrublands, Windermere, would be more suitable. The gateway No. 50 with the open railing; the gateway illustrated in No. 61 with the overhead arrangement, and side panels, the one at Skibo Castle designed for Andrew Carnegie, Esq., D.C.L. (Ill. No. 74), and the opening and gate with its row of clanging bells at Ashton-on-Ribble (No. 68), are all modern examples of gates on which smith or carpenter has exercised his craft, and all are arranged to mark divisions between parts of gardens, while Nos. 75 and 76 give two antique Spanish wrought-iron gates which have been re-erected in an English garden.

*Garden
doors.*

Garden doors made to fit arched openings in fruit walls or the fence to the public highway are often required, and for their design and arrangement we have a large amount of precedent in the old English walled gardens. There is a perfectly plain but delightfully proportioned one at Melbourne Hall, Derbyshire, the seat of Admiral Lord Walter Kerr, and another rather more elaborate, and designed in the classic renaissance style, at Woolhampton Hall, Berkshire. Those shown in Nos. 299 and 300, erected in gardens by the Author, are all designed in the spirit of the old work. In this class of door more than any other it is impossible to use stock designs. Every site needs individual treatment, and the most should be made of the individual note. Where the door gives access from the highway, a sense of privacy is required, as it would be the entrance for members of

FIG. 73.

GATES AND FENCES FOR GARDEN AND PARK.

the household only, and where it gives access to a walled garden for roses or old-fashioned perennials, after the style of the old examples, a glimpse of the brilliant colour masses within might be obtained through open panels or over the door, which might not in this case be made high enough entirely to fill up the arched opening. For such doors, oak is to be preferred, and if possible English Oak, as this is not only the most durable but has an infinitely better appearance than the American Oak, which comes next in order of durability. Teak is also suitable, as it is lasting wood, but most people will prefer the appearance of oak, especially when weathered.

Before leaving the subject of garden gates, four designs are given for small entrances to little gardens. The first two, Nos. 77 and 78, are arched over, No. 77 being intended to be built in local stone, rough punch and hammer dressed, and No. 78 being designed for building in rough slate or other material with natural cleavage lines, the ball over the gate being the only portion rough punched.

The other two remaining gateways, Nos. 79 and 80, are simpler still, and have been designed with a view to strict economy. All four would lend themselves well to use in the outlying portions of larger properties, and would be quite suitable, for instance, as the entrance to a wild garden, park or paddock, and other places which are not strictly within the ornamental grounds.

Gates for little gardens.

FIG. 74.

FIGS. 75 & 76.—ANTIQUE SPANISH GATES ERECTED IN AN ENGLISH GARDEN.

GATES AND FENCES FOR GARDEN AND PARK.

The subject of gates and fences has been specially dealt with, in the hope that more care and thought may be bestowed upon them than has been in the past. It is hoped

FIG. 77.

FIG. 78.

that estate owners, instead of surrendering inevitably to the fence-maker's catalogue, will, by the aid of the examples given, be helped to evolve designs which shall have the merit

FIG. 79.

of individuality and special suitability to the needs of the particular case. It is usual to undervalue that which is easily accessible, and to value that which is exotic and remote, and in no case has this tendency been more pronounced than in the design of gates, and

FIG. 80.

it is hoped that the examples which have been given of simple designs, lending themselves to sound and honest construction by the local craftsman, may help to remove this tendency.

FIG. 81.—GATEHOUSE SCREENING CARRIAGE COURT AT THORNTON MANOR, CHESHIRE.
From the Highway.

FIG. 82.—GATEWAY SCREENING CARRIAGE COURT AT THORNTON MANOR, CHESHIRE.
From the Carriage Court.

CHAPTER VI.

Those who have studied the writings of the Early Victorian school of Landscape Gardeners, and particularly those persons acquainted with the actual work of this period, will have noticed how often the drive, which is generally the most important accessory of a country domain, seems to be treated as an unfortunate necessity. At best its æsthetic possibilities are considered to be limited to the focussing of vistas or views of the residence or park landscape, for which purpose it is arranged in a series of more or less meaningless sinuous curves. Such expedients are seldom satisfactory. They may please on first acquaintance, but, as soon as their artificiality becomes apparent, they partake of the nature of tricks, and "tricks," even in landscape gardening, invariably pall in the end.

*Æsthetic
value of
carriage
drives.*

To commence the task of designing and laying down the lines of the drive to a country house with such limited conceptions of its æsthetic possibilities, would be a fatal policy. When we consider the importance of first impressions, and that, in the case of every house which stands in its own grounds, they are gained from the main approach, we at once see that no feature is so capable of giving or, on the other hand, destroying the dignity and sense of fitness in the setting of the mansion. It is also necessary to remember that, on the placing of the drive, will depend the disposition of many other features which have a direct connection with it, or which must be so arranged as to secure privacy from it. It therefore follows that drives and approaches are to the garden designer what the skeleton lines of a conventional design, or even the leading lines of an unconventionalized statue or picture, are to the designer, artist or sculptor.

Notwithstanding much that has been written to the contrary, the questions of balance, symmetry, flow of line and the other factors which go to make up what we call "composition" in a picture or statue, all have their counterpart in the designing of drives and must receive due attention if the result is to be pleasing. There is, of course, this difference, that, in the painting or sculpture, the designer is unhampered by utilitarian considerations, while in the case of the designer of a drive, many such factors must receive attention if it is to fall naturally and fittingly into the scheme of things. This is, of course, true of all garden planning, but in the present instance, where purely practical considerations come more prominently forward than in any other branch of the subject, except, perhaps, the arrangement of entrances and carriage turns, it is especially necessary to remember the close connection which must exist between the practical and æsthetic. The result must be a compromise but need be none the worse for that, and may prove

DRIVES, AVENUES, AND SERVICE ROADS.

the fallacy of the popular dictum as to the futility of compromises. Even the artist must compromise with his medium and is bound by its limitations.

Unnecessarily long drives.

Another misconception of the Early Victorian and Georgian schools of landscape gardening which it is necessary to guard against, is that a long and meandering drive adds dignity to a residence. From the time of Repton, or even earlier, it was sought to express the value and state of a property by the length of its private roads, and in several of the better known of our lordly domains, the direct connection with the highway, guarded by symmetrically-placed gatehouses, was removed and miles of long, serpentine drives laid out. In some cases the drive is even made to run parallel with the public highway for a considerable distance, even where the most rational and direct planning of the approach to the house would result in no drive at all, but merely in a carriage court screened from the public road by gate houses or a high wall and gates, a plan frequently adopted in the approaches to the old manor houses. Though such an arrangement may, at first sight, appear to some people to be æsthetically undesirable, it is, in effect capable of the most charming and dignified treatment, and has the further advantage of giving to the remainder of the grounds more privacy and seclusion than can be obtained by any other means, especially where the main entrance door to the mansion and the public highway are both on the North side of the house, while the cost of forming and maintaining an unnecessary drive is avoided. The question of cost, both of construction and maintenance is a very serious one, and experience proves that long meandering drives, unless protected for their whole length on both sides by fencing, are very difficult to keep clean where there are cattle, and that, under any circumstances, they are not so good for quick transit as the wide, skilfully macadamized and tarred highway with which they compete. A striking instance of this Early Victorian fallacy is given in the plan of Athelhampton Hall (Ill. No. 86). Here, there is very little doubt that the approach to this beautiful and ancient domain was originally on much the same lines as those to which the Author was privileged to restore them, as shown on the plan, but, when he was called in, the drive took the course shown by the dotted lines, and there is no doubt that the change from the simple, direct and dignified approach to one which runs close to and parallel to the highway for quite a distance, was made when this false taste was in vogue. This instance is a particularly happy one, as a glance at the plan shows immediately which method is to be preferred, whether considered from the æsthetic or practical standpoints. Of course there are isolated cases where the character of a highway so alters as it approaches the house that it is undesirable for the drive to leave it at the point nearest to the mansion. Such a case occurred in the gardens laid out by the Author for Arthur Roberts, Esq., of Windermere. Here, the roadway, after being of a reasonable width and more or less satisfactorily graded for a considerable distance, suddenly deteriorated and became little more than a farm track. In this instance, the only satisfactory solution of the problem of the route the drive should take, was reached by placing its commencement at the extreme corner of the estate nearest to the point where the roadway narrowed so that only a few yards of the poorer portion must be traversed before reaching the main entrance gates, not more, in fact, than it would be possible to regrade by agreement with the rural authorities without prohibitive expense to the proprietor of the mansion.

Another exception to the rule that the drive should be as direct as possible, must be made in favour of those domains reached through exceptionally beautiful scenery, where, by reasonable deflection of its course, the approach can be taken through some especially fine country or romantic glen. No economic advantage, for instance, could justify the removal of the drive through Hawkestone Park in Staffordshire from under the natural arch of rock which at present spans it, and there are numberless instances of a similar kind in other parts of the country. This acknowledgment of

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exceptional features is not to be confounded with the neglect of every other consideration in order to focus from the route a series of more or less forced vistas and views which we have already so strongly deprecated. The two things are entirely distinct both in their intent and result.

While it is impossible to arrange the various forms of main approaches to country mansions into hard-and-fast classes, they may be broadly divided into *naturally-planned drives* following the contours of the country through which they pass; *formally arranged drives*, usually part of a symmetrical arrangement of drive, entrance and carriage court; and *tree-lined avenues*, straight or curved.

Different classes of drives.

It should be explained that while in Scotland all carriage drives, whether curved, serpentine, or straight, tree-lined or not, are called avenues, in this work, for purposes of distinction, the English usage is followed, only roadways bordered by trees placed at even distances apart being so designated. In England, carriage ways, whether curved or straight, which are not bordered by trees, are called drives, while subsidiary roads used by tradesmen or estate servants and connecting with the kitchen court, stables or farm steadings and not used as principal carriage ways, are called service roads.

The whole subject of drive design is more dependent on scale and proportion than upon any other factor, and it is this which will determine which of the above forms shall be adopted in each individual case. It has always been a common error so to treat the approach as to convey an idea of importance altogether out of keeping with the size of the mansion which it serves, though, as stated when dealing with entrances in another chapter, the added requirements of fast motor traffic make an arrangement suitable which, under older conditions, would have been somewhat grandiose.

Importance of scale.

Of all forms of drive, the stately avenue, straight from end to end, and bordered by patriarchal elms making a lofty overarching leafy canopy, or a double avenue securing a wide open glade to the mansion is the one expressing most dignified importance and demanding the most imposing architectural adjuncts to justify it. Such an avenue, on any but the smallest scale, would be quite out of place in connection with anything but an important mansion, and even there great care will be needed to get length, breadth, distance between trees, lodges, entrances and gates, all so proportioned as to fall naturally into their places and to give that sense of ordered relation and simple dignity to which such an arrangement must owe its whole effect.

Avenues.

As a general rule for adoption in all ordinary cases it may be stated that an avenue should be absolutely straight and level from end to end unless there is an even rise throughout its whole length towards the house, and while such a rise, if not too great, is probably even better than an absolutely level course, the reverse, or a drop towards the house, is, of all arrangements, the very worst, giving the house the appearance of being in a hole.

Repton, in referring to the formation of avenues, states, as his opinion, that the effect is heightened where the route followed is over hill and dale. Probably he spoke of the appearance as viewed from the side and not up the green aisle, and of avenues with green drives not spanning a roadway, for straight roads and drives traversing a series of hills and hollows lose, to a great extent, that perspective which gives them their stately appearance. This is easily seen if the spectator stands on the first rise and looks towards the last one when only the summits are seen, the intervening road in the hollow being lost to view. It is important, therefore, when making a straight drive over undulating ground, that the heights should be reduced and the hollows filled to obtain length of line. When, however, there is a swinging hollow stretching from end to end of the avenue, and not so depressed in the centre as to bring the leafy canopy at that point level with the eye as viewed from one end, the effect is almost as good as on a level course. This may be seen on a large scale on the Kenilworth Road a short

Repton on avenues.

DRIVES, AVENUES, AND SERVICE ROADS.

distance from Coventry, though, in this case, the absence of some culminating architectural feature to close the vista is much felt.

*Uniformity
of size in
the trees.*

The most important point in the formation of an avenue is that the trees shall be chosen and arranged with due regard to uniformity in their size and habit when fully grown. This is most difficult where one portion of the route is more exposed than another to cutting winds, but much may be done by obtaining the whole quantity required from one nursery and selecting individual trees for each position.

FIG. 83.

FIG. 84.

All the remarks on the choice of trees for garden work given in another chapter apply equally to those required for avenues, but, while in a smoky district or one where towering height must be sacrificed for sturdy growth, the tap-root must be cut and the leading shoot pruned at a later date; in the open country there are many positions where by far the finest result would be obtained by planting closer together and leaving tap-root and leading shoot in their natural state.

*Arrange-
ment of
trees.*

The distance apart the trees should be planted in the rows at either side of the avenue depends not only on the species to be used, but also on whether those on either side of the roadway are to be placed opposite to one another as in the first sketch (No. 83) or diagonally as in the second (No. 84). The former arrangement is to be recommended where the surroundings of the avenue are restrained and conventionalized, and the latter where it passes through more or less natural scenery. The spaces between

FIG. 85.

*Double
avenues.*

the trees in the former case would vary from thirty feet for Lombardy poplars to sixty feet for full-grown elms, and in the latter rather less, while in planting an entirely new avenue and where immediate effect is desired, double this number of trees might be inserted and half of them removed as soon as they have sufficiently grown to crowd each other inconveniently.

Where the scale of the mansion and its surroundings are such as to warrant the greatest magnificence

possible, double avenues, of four lines of trees, may be formed, especially where side tracks for foot passengers are desired in addition to the central carriage drive. In such cases, the two central lines of trees would be planted opposite to one another, and the outer two, diagonally to the trees nearest to them (No. 85). Additional effect may be obtained by pollarding the inner rows of trees and allowing the outer ones to tower above them, an arrangement which will be familiar to those who know Chelsea Hospital,

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though in this case again one feels that the avenues are a little meaningless without the incorporation of suitable architectural features to focus the vista, and also that pollarding should not be resorted to except where it is a more or less prominent local characteristic.

Pleached avenues are very useful where a formal arrangement of their surroundings is in evidence, but where the scale of the whole lay-out is not important enough for the towering elm avenue. They are most successfully formed of elms or beech and the best example familiar to Londoners is probably at Romney Road, Greenwich, where it passes between the Royal Naval College and the Royal Hospital School.

Green avenues which do not form part of the main approach to the mansion but

*Symmetrically
planned
drives.*

FIG. 86.

are designed solely as a feature of the pleasure grounds or home park, are dealt with in another chapter.

The symmetrically planned drive shares with the avenue its particular adaptability to a position where grandeur is essential. The drive and entrance at Athelhampton Hall (Ill. No. 86), already referred to, may be taken as a typical instance of this type of drive which has worked out well in practice, and produced a result which is dignified and thoroughly in keeping with the beautiful old architecture up to which it leads. As is particularly necessary in this class of drive, the gate-houses were designed by the late Mr. Dan Gibson in a style exactly to harmonise with that of the old residence, with an arch over the gateway and massive doors, the stables also being rearranged to suit their altered surroundings. In this case the surface of the drive is level, and this is

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best, except where it is rather long in relation to its breadth, when an even rise towards the house will lessen the foreshortening and give an effect of better proportion.

Formal drives of this kind are usually enclosed between clipped hedges with a space for grass between the hedge and the carriage-way, as shown on the plan just referred to, and on the correct proportioning of the breadth of the roadway and grass verges and the height and treatment of the hedge to the length of the whole, much of the ultimate effect will depend. Such drives cannot, however, be made more than a certain length without losing the perspective and dwarfing the mansion. No very hard-and-fast rule can be laid down

FIG. 87.

as to the greatest length possible, as so much depends on the height and breadth of the façade of the house up to which it leads, but in most cases, fifteen hundred feet would be a maximum. In public boulevards and park avenues this length may be much exceeded by placing a piece of statuary or other monumental feature in the middle of the roadway at its central point, i.e., equidistant from either end, thus focusing the perspective; but in a private drive such an arrangement would usually be quite out of keeping. Where the house is a long way from the highway, too far for a successful treatment on these lines, the best way would be to make a shorter formal drive at the end nearest the house, designed as a part of the more formal pleasure grounds, and treat the rest of it in a free manner either with a drive laid down in sweeping curves, or better still, where circumstances allow, by a bifurcated drive, as in the sketch (No 87). The point where the formal arrangement ends will need very strongly marking and the best way will be to place the lodges here with handsome gates between, preferably of wrought iron, and to treat the more distant gates at the roadway quite simply with simple wooden palings to the wings, the whole painted white unless in oak when rampart roses could grow over it in luxuriant masses.

The lodges to symmetrically planned drives will themselves usually be best if symmetrically arranged, as shown in the two illustrations of this type of drive which are given (Ill. Nos. 86 and 87). Those appearing on the heading to this Chapter would be suitable in some instances, while, in others, where greater dignity is required, a gatehouse with an arched portal and probably groined vaulting over the gateway would be more in keeping.

*Informal
drives.*

In the making of informal drives, the whole effect depends on a careful consideration of the contours, and an arrangement of the line of route which recognizes them and emphasizes all that is pleasing in the lay of the ground. It is to these purely local conditions and the way they are deftly woven into the scheme, that we owe much of the pleasure derived from the approaches to many a country seat.

In approaching the individual problem, the foremost consideration is to adopt a route which, if possible, will allow the drive to leave the public road at a lower level than the house, so that it may rise towards it and so increase its apparent elevation, but this must be done without sacrificing directness and convenience or belying the contours, or the result will be strained and affected in the extreme.

DRIVES, AVENUES, AND SERVICE ROADS.

No paper scheme for a drive of this kind can possibly be successful. Only by first planning on paper, then pegging on to the ground, adjusting by the eye and re-surveying on to paper, readjusting and repeating this process several times, can the best route be decided on. For the purpose of marking out the curves on the ground, small pegs are no use. Surveyors' poles are best, but where these are not immediately available, slaters' laths as long as possible will do almost equally well if they are white and clean so as to show up well against fallow ground, turf or brake, as the case may be. Where these are used and there are sudden dips in the ground a few longer stakes will also be required such as may be made from plasterers' anglebead. Dahlia stakes may be also used if unpainted, but those which have the usual dark green colour are unsuitable.

*Practical
planning
of curved
drives.*

The reason for using long stakes to mark out the course of the drive will be seen immediately if we peg it with short ones and then substitute long ones, putting them into the holes made by the short ones. It will be at once apparent how much the unevenness of the ground warps the perspective, so that curves which look nice as at first pegged out would be found to be far too flat in the hollows and too sharp on the breast of a hill when the inevitable grading is completed.

In order to judge more correctly of the effect of raising the surface of the finished drive above the natural level in the hollows, and lowering it at the highest points, and also to test the result of substituting even gradients for the original rough hummocks covering rising ground, a further expedient may be resorted to. Having fixed the long pegs in position, a number of pieces of scarlet chair webbing are procured, one for each peg and about eighteen inches or more long. These are loosely knotted round each peg so that they can be slid up and down, but so that they will remain where placed. Now cut a piece off a spare lath rather longer than the deepest cutting is expected to be, and using it as a rule, slide all the pieces of webbing up or down the stake until they are the height of your measure above the proposed finished level of the drive at each point. By running the eye along the line of red on the stakes, a very approximate idea of the ultimate result can be obtained, though due allowance must be made for the fact that curves will look flatter on this single line of pegs than they will on a drive of twelve feet or more broad. The whole can then be surveyed and marked on the plan, the amount of cutting or filling at each peg being noted.

Of course the above method of working must be subsidiary to a proper series of sections prepared from measurements taken over the course of the drive with a surveyor's level and plotted on to paper; but unfortunately, in ordinary road engineering, practical considerations usually determine the route and levels, while in the case of drives, æsthetic factors must also be considered so that visual helps such as those described must be used to assist the surveyor's measurements.

There are two other ways in which the ordinary methods of the road or railway engineer fail æsthetically when applied to drives and service roads. One relates to the arrangement of his curves and the other to his gradients. The former are laid down to fixed radii of circles tangent to one another or to intermediate straight lines. Where æsthetic conditions are sought, these set radii must give place to catenary curves, the graduated curves assumed by a chain or rope when loosely suspended between two points. The reason for this is not far to seek, for a moment's reflection will show that this is the curve any wheeled vehicle naturally takes (unless running on rails), and consequently is the best to adopt practically as well as æsthetically.

*Engineers'
and Land-
scape Arch-
itects'
methods
contrasted.*

With regard to levels, the railway engineer's lines consist of one straight gradient, or "bone" as the workman will call it, running into another or into a level stretch, and it will invariably be found that, on facing a rise where there is a flatter gradient below meeting a steeper one above, there will appear to be a sunk place in the surface where the two meet, while when the conditions are reversed and the lower gradient is

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the steeper one, the surface of the drive will appear to be raised too high at the point of junction. The remedy is to plot all the gradients on to the sections in swinging curves at their junctions, at the same time keeping changes in both direction and gradient as

FIG. 88.

few as possible. The accompanying sketch (Ill. No. 88) shows, by full lines, the engineer's methods in the bottom of a hollow and, by dotted lines, how the Landscape Architect would alter them.

Probably the most effective curved drive ever designed by the author was one something under half a mile in extent which, for its whole length, was carried in one long simple sweep round an amphitheatre of hillside and rising at one gradient the whole way from the entrance gates to the forecourt of the house.

The railway engineer's methods of working his sections will also need adaptation to the special requirements of private road work. The best way is to take a line of levels along the centre of the proposed route, and at each point measured, to take a level on either side, say fifteen feet away to right and left. The three lines of levels thus obtained are all superimposed over one datum line in three different coloured inks, making the centre line the most prominent to ensure clearness. This method, of course, causes a little distortion in the lengths of the side sections on the curved portions of the drive as they are represented as being a little longer than they are on the inside of a curve, and are shortened on the convex side of the bend. This, however, can easily be allowed for in calculating the proportions of cutting and filling. It has the advantage of showing the cross-grading at every point at a glance without reference to the cross sections usually prepared in such cases.

The writer's own method is to plot the three superimposed sections to a much larger vertical than horizontal scale, and then to add the centre line only, drawn to the same scale as the horizontal measurements, using the same lines of heights above the datum. The arrangement of the surface levels can then be proceeded with on the upper set of lines, and are afterwards transferred to the lower centre line as a check, from which the resulting gradients can be read without calculation. The amount of cutting or filling at any point can, of course, be more accurately computed from the higher set of lines.

Where the subsoil is of such a nature that all the roadmaking materials can be obtained in making the excavated portion of the drive, the finished level should be plotted on to the sections, but where these will have to be carted from a distance, the foundation levels should be laid down, thus allowing an equal amount of cutting and filling. It would seem, at first sight, as though rather more filling than cutting would be necessary, as the material used for filling packs so much more loosely than before being disturbed, even when it has had time to settle solid, but the amount used in making up the banks on the low side of a cross slope will just about absorb the surplus in all ordinary cases.

*Ease of
gradient.*

As to gradients, these should always be as easy as possible. The sight of horses struggling up a steep drive is not conducive to that sense of repose which it is the first object of the garden designer to obtain, and even in the case of a motor-car, slow threshing uphill on the lowest gear tends to be irritating.

As a general rule, gradients of more than one in twelve are to be avoided, though the whole question is relative to the general contours of the district. What is the best possible in one place would be distinctly bad in another. In extreme instances in the English Lake District, where the residence may be placed in an almost inaccessible position for the sake of a unique view, the writer has occasionally been compelled to adopt a gradient of one in six-and-a-half or seven for short distances. This may be taken as being the steepest slope up which it is possible to get a heavy luggage cart or other loaded vehicle.

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The curved drive, running through natural or park-like scenery which is most successful, will be that which is so designed as to fall naturally and fittingly into its place as a part of the general landscape, and which has the appearance of being planned on the only possible lines. This means that, in its design, the two factors of directness and ease have been kept equally in mind by its designer and balanced one against the other. In the term "ease" must be included a careful consideration of the contours of the country through which the drive runs and making its curves and gradients emphasize its undulations. Any curve which opposes them will strike the user at once as being in the very worst taste as well as being constructionally bad.

In most instances, the effort to bring the course of the drive into conformity with the requirements of the contours will result, at the first attempt, in a series of short and somewhat irritating curves, and it is in the combination of a number of these into one long, graceful sweep, as in the accompanying sketch (Ill. No. 89), that the designer's artistic capabilities will receive their fullest test. In this important work, it should always be borne in mind that both curves and gradients look much flatter on paper than on the ground, owing to the foreshortening effect of perspective, and this is again one of the reasons why practical work on the ground must go hand-in-hand with designing on paper, if the best result is to be obtained.

The junctions of curved drives with service roads require very careful adjustment in the gradients of each at the point of connection. All road makers know the difficulty of joining the varying gradients together satisfactorily, and only very careful attention to these as the work proceeds can prevent an awkward appearance; and in the case of the planning of the connection, equal care is necessary. The two roads must meet in a natural and easy manner, or, to put it technically, their centre lines must be tangent to one another at the point of junction.

FIG. 9I.

Curved drives offend more often than any other form in being so designed as to minimize or even destroy all privacy in the pleasure grounds. In one instance in the

Effect of curves.

FIG. 90.

Junctions.

Where possible, entirely separate service roads should be constructed for the use of tradesmen and for the necessary carting to the residence and stables. Where this cannot be provided and the main drive serves all purposes for a portion of its length, care should be taken in the design of the connection with the service road that visitors cannot mistake it for the main drive. This may be accomplished by making the service road narrower than the main drive, by keeping the junction as far from the residence as possible, by making the junction by a sharp curve at a point where the drive is fairly straight, and by planting the space at either side of the junction as shown in the sketch (No 90).

Service roads.

Preservation of privacy.

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writer's experience the drive was taken round three sides of the house to the front door. Unless the main entrance to the house has been very badly arranged, there could be no excuse for this or for so placing the approach that it comes in front of the entertaining room windows or overlooks the lawns or flower gardens. Even in the worst cases a screen hedge should be included in the scheme.

Double drives.

Double drives, enabling the traffic to return to the highway without turning round in a more or less confined carriage court, and without having to pass other vehicles proceeding to the house, are almost invariably curved, otherwise, in most instances, in looking along the drive, one entrance would be visible from the other, so destroying all privacy and any attempt to create a sense of breadth of treatment. A notable exception may be made in favour of those cases where the house is approached by an equal amount of traffic from two directions, as in the sketch (No. 91), say from the railway station on the one side and the village or town on the other.

FIG. 92.

Speaking generally, however, the double drive is the prerogative of those houses which stand in their own grounds but which are so near a large town that they serve all the purposes of a town residence, and so on the occasions of social functions, there is a very large amount of wheeled traffic in a short space of time, and by reserving one route for arrivals and the other for departing carriages, confusion is avoided. Such a domain is shown on the plan of Broad Oaks, Accrington, (No. 92). Here the approaches are treated in the informal manner which best lends itself to double drives on this scale, while in illustration No. 94, a more formal arrangement is shown.

Having decided the principle on which the main approach to the residence is to be laid out, whether as an avenue or a formally or naturally treated drive, there are two details common to all forms of approach, the planning of which demands consideration.

DRIVES, AVENUES, AND SERVICE ROADS.

These are the junction of the drive or avenue with the public highway and the angle and position of the drive's termination at the carriage court.

While the planning of the carriage court and the architectural accessories and furnishings of the entrance are treated of elsewhere, the subject of drive formation would be very incomplete without some reference to the general arrangement and planning of its terminations.

FIG. 94.

on this unsatisfactory arrangement would have sufficed for an entrance at right angles to the main road, which would be quite as impressive in line, and safer, provided of course that the gates could be placed well back from the main road.

The question of safety should, of course, always be paramount, and in this connection the coming of the motor-car has effected many changes. Longer sweeps, a broader outlook and the avoidance of collision points are all necessary, while the extra wear and tear of tyres caused by turning at a very short radius also has its influence in determining the lines of the entrance sweep. Whereas formerly entrance gates were set back from the roadway fifteen to thirty feet, nowadays, thirty to sixty feet, with wing walls in proportion, is considered necessary. Thus, entrances which, twenty years

furnishings of the entrance are treated of elsewhere, the subject of drive formation would be very incomplete without some reference to

the general arrangement and planning of its terminations.

For the entrance, most designers seem to favour an oblique junction, making the centre line of the drive run in the direction of a town, a railway station or other important place. Where, as in No. 93 there is a sufficient bend in the highway to justify this arrangement, it may be a success, but when the drive breaks away from a straight road, the effect is generally disappointing.

An oblique junction is also very unsuitable where the drive and the highway approach one another at very different gradients. Suppose, for instance, that in illustration No. 95 the point B, which is forty-three yards from A, is also thirteen feet higher, and the gradient of the highway between the points C and B is one in twenty, the cross fall of the ground would be so considerable as to make the entrance unsafe for carriages. Of course the ground at A, could be levelled up, but as this would have to be carried from the point of curvature of the wall to a point many yards inside the gateway, the cost would be heavy; whereas, half the money spent

Oblique entrances.

FIG. 93.

FIG. 95.

Safety.

DRIVES, AVENUES, AND SERVICE ROADS.

ago, would have been considered extravagant or even ostentatious in their proportions, to-day only meet actual needs.

FIG. 96.

*Junction of
drive with
carriage
court.*

line of direction of the court and partly upon the architecture of the house, whether it is a perfectly balanced and symmetrical structure or a picturesque, many gabled composition without any dominant axis on which to centre drive, carriage court and gate piers as a self-contained and complete entity. In any case, however, it is wrong to enter the court with such a sharp curve as to lose any comprehensive view of the residence from lack of the necessary perspective.

Here are five examples of typical treatments from the writer's recent work.

Illustration No. 99 shows the approach to a symmetrically planned dignified classical mansion, having a fine pillared portico on to which the avenue centres, the double line of trees being set back forty feet from the centre of the drive on either side, giving a clear width of eighty feet, thus allowing a clear view of the entrance façade. There is a second approach to the West which centres on to an arch leading to the garage, over the centre of which is a clock cupola.

FIG. 98.

No. 98 shows the approach to a type of residence which is happily as usual as it is delightful, one which has been built at various periods in the styles in vogue when

Apart, however, from questions of safety and convenience, it is necessary, as has already been suggested, that the entrance, especially if near the residence, should be planned strictly in keeping with it, and, as a general rule, it may be said that the nearer the entrance is to the house the more dignity it should possess. The relative importance of the various entrances to a large country seat should also be expressed in their design and arrangement, and it is equally necessary that there should be nothing to clash with beautiful natural scenery where this exists.

As to the approach to the carriage court, whether the drive should terminate at its side, end or angle, depends partly upon the size and upon the architectural character and arrangement

FIG. 97.

No. 96 shows the approach to a Scotch mansion which has an imposing entrance in the angle of the "L" shaped building. In this instance the court is enclosed within yew hedges, and the position of the entrance has given the opportunity for a somewhat unusual arrangement of brick paving over a portion of its surface.

No. 97 is the approach to the carriage court at Wood, South Tawton, in Devonshire, a view of which forms the subject of the end papers to this book. In this case there is a steep cross fall between the points A and B, on the sketch.

DRIVES, AVENUES, AND SERVICE ROADS.

each new addition was made and at all angles, resulting in a haphazard picturesqueness which resents any formal arrangement of drive or approach.

No. 100 shows a double approach which enters a large court from opposite directions, each drive, for a distance of nearly a hundred yards, centering on the *porte cochère*; while No. 101 shows an important variant of this arrangement.

FIG. 99.

Having thus dealt with the various forms of drives and avenues and the treatment of their terminations, a few remarks on those methods of construction common to them all may be given.

Materials vary very greatly in different parts of the country, and in all cases the best must be made of those available locally, for the cost of importing the one hundred tons or more of stone required for even a short drive would be quite prohibitive, though in extremely important cases, where the traffic will be very heavy, it might be advisable to obtain Mount Sorrel or Aberdeen granite for the sub-surface

Materials.

as the truest economy in the long run.

Whatever the material however, the various processes of construction will be much the same. When the ground has been made up to the required levels and gradients by cutting through the higher parts and filling deep hollows and the "made" portions

Pitching.

FIG. 100.

FIG. 101.

have had time to consolidate, a layer of broken stone in large pieces, where possible from six to nine inches in diameter, is laid over the whole width. This is known as the "pitching," and there are two varieties, viz.:—rough pitching and hand pitching. The former is the more quickly done but absorbs the more material and consists of tilting the stuff out of carts on to the place it is to occupy, and going over it with a hammer and levelling down and breaking up any pieces which are much larger than the rest, when it is considered to be ready for the sub-surface material. In the latter method, each piece of pitching material is placed by hand, giving the unfinished drive the appearance of having been very roughly paved. Where material is plentiful, the former

DRIVES, AVENUES, AND SERVICE ROADS.

method will be best, but where it is expensive or difficult to obtain, the latter is the more economical, particularly as it allows of a saving in the subsequent operations.

*Peaty
subsoils.*

The success of the pitching depends almost entirely on getting a good firm bottom on which to put it. In most districts this is easily obtained by removing a foot or so of turf, soil, fibrous matter, etc., from the site, but in others, where the ground is very wet and peaty, or where, as in many parts of Sussex, the subsoil is pure light sand, means must be taken to insure that it will not work up between the pitching and so destroy the work, as it otherwise would in the course of a few weeks, through the agency of wheeled traffic, if means were not taken to prevent this. In the case of a peaty subsoil, where this is only shallow, by far the cheapest method is to remove it entirely and fill up with dry, clean rubbish, adding a proper system of land drains, even though this may mean a rather heavy initial expense. Where the peat is too deep for this, it must be thoroughly drained, and both here and in the case of light sand, a layer of brushwood, broom, or other tough fibre, laid under the pitching, will keep everything in place, until time and the hammering of the traffic have together thoroughly consolidated the whole construction. In some districts, such as North Hertfordshire, pitching of any sort is dispensed with, and a layer of chalk substituted, but this is a material which needs very careful using, for in other districts where its physical properties are not quite the same, a sticky, putty-like substance would ooze up between the stones and ruin the whole. Brick bats and old building rubbish, if clean, make good pitching where stone is not available, and the writer has made good public park roads with a foundation of the broken crockery, etc., from the works in the Pottery Districts. It will thus be seen that in drive formation there is scope for much ingenuity combined with a knowledge of local conditions.

*Sub-surface
material.*

The pitching having been laid, a solid foundation is formed on which to put the surface material of the drive. This is usually of two kinds, which may be described as the sub-surface material and the grouting. The former consists of stone broken to pass through a sieve with a two-inch mesh, and the latter is either finely-broken stone used to fill in between the sub-surface material and form a smooth surface, or it is material added to cement the whole together. Undoubtedly the best materials are those which make their own grout, that is to say those of a tough but not brittle consistency which, when rolled, make a cement-like detritus which itself acts as a grout. The best of these is the magnesian lime-stone so largely used throughout the Lake District, but all lime-stones are by no means so good. Some make the dustiest and muddiest roads in the kingdom. Such materials as granite or flints need an added grout, and probably the best in most cases is formed of road scrapings, while another often used is composed of garden loam. If the sub-surface material is formed from rounded stones from a watercourse or sea shore, they must each be broken at least once, even if this makes them rather too small, otherwise the whole will not bind together into a solid mass and horses' feet will be continually loosening rounded pieces of material. Where a drive is being made to lead to a new house, it is a good plan to make it up roughly before building operations commence, and then to insert a clause in the main contract making the contractor responsible for its being left by him in as good a condition as he finds it. This means that all the heavy carting materials for the house will be done over it, and thus it will be thoroughly consolidated and any weak points will show themselves, and be filled in with building rubbish, often several times, until they are made good and solid. When the heavy carting is finished, a most exceptionally good sound foundation for the drive will remain, which will only need the surface repairing.

Rolling.

At every stage in its construction, the drive should be rolled with a fairly heavy roller, the weight of which will depend on the amount of pounding the material will stand, without either breaking up or being driven into the subsoil, and, in the case of a

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drive to be used by motor traffic, it is particularly desirable that it should be finished with a light steam roller.

All drives should be "crowned" or raised in the centre and sloped away at the sides in order to throw off rain water, which would otherwise soak into the surface and disintegrate it. Where the drive is hand pitched, by far the best way is to form the crown in the subsoil before commencing the pitching and to keep each layer of material the same thickness throughout, but where it is rough pitched this is not so important. A good general rule is to make the drive with a crown which raises the centre one inch for every two and a half feet of width from crown to side. Thus a drive twelve feet broad would round up to the centre nearly three inches, and one of eighteen feet nearly four inches. Here again, however, local conditions and the relative absorbency of the material used must be taken into consideration. For the sake of cyclists especially, but also for other fast traffic, it is better that, where the drive curves, and especially where the curve is sharp, the camber should be carried straight across the drive, making the inside of the curve the lower and the outside the higher point. This is particularly necessary where the drive curves to the right as one goes down-hill, where it would, of course, necessitate a special arrangement of the catchpits.

Crowning.

While there are many drives in this country where to provide catchpits would be a waste of money, there are an infinitely greater number which are a perpetual annoyance to the estate workmen and a continual expense to the owner, all for the lack of a few well-placed drains

Catchpits.

to prevent heavy rains from scouring the surface. No hard-and-fast rules can be laid down for the placing of these, but of course, the steeper the drive is, the more will be necessary. The grate should be twelve inches by eight inches with the bars curved to make it hollow towards the centre and with a lip standing above the level of the

FIG. 102.—DRIVE CUT THROUGH SOLID ROCK.

end to check any tendency for the water to shoot right over it. The chamber under the grate may be built of dry bricks, i.e., without mortar or cement, and, to carry the water away, stoneware pipes are better than earthenware, except where laid exceptionally deep, as the latter are more apt to be broken by the traffic passing over. Where the drive is at all steep, they should have channels at the sides to withstand the wash of rapidly running storm water. Undoubtedly the most æsthetic method of providing these is by cobble paving, as in illustration No. 102, where this method would be in keeping with local characteristics, as in a district where flints abound, or where cobble paving is much used in the older building works, while in a brick district a channel constructed

DRIVES, AVENUES, AND SERVICE ROADS.

of ordinary stock bricks looks as well as anything. Where the rush of water is likely to be at all great, either cobbles or brick should be laid in cement, and this is at all times the best method in the former material, as otherwise the numerous joints will grow a crop of weeds, which will involve many hours' labour in the Spring and early Summer.

Width of drives.

The widths of drives must again depend on many circumstances, and do not admit of solution by the application of preconceived dogmatic formulæ, but in no case, except where the drive is a mere carriage sweep of a few feet long, should it be less than about twelve feet broad, while for drives over two hundred yards long which are likely to be used constantly, sixteen feet is the best width. It would seem almost unnecessary to state that the same width should be carefully adhered to throughout the whole length of the drive unless under special circumstances, but observation shows how very few drives do this, giving the whole a ragged effect which no amount of care for the surface or verges can possibly remove. It has already been stated that the width of service roads should be carefully proportioned to that of the main drive. They may be anything from eight feet wide upwards, this being the narrowest roadway which will take an ordinary tradesman's cart.

Cross levels.

The whole effect of a well-planned drive may be ruined by neglect of the banks at its sides where there has been interference with the natural levels of the ground. The artistic management of cross levels demands greater attention than is usually bestowed upon it, and this is particularly so where, to insure an easy gradient, the drive follows a winding course through an undulating park, sometimes entailing a deep cutting and at others an equally deep filling, or where it encircles a hill with a cutting on the high side and a fill on the lower. In any of these cases there should be a level verge on either side of the drive at least two and a half feet broad with the bank beyond it arranged in reversed or "O.G." curves to connect with the natural levels (Ill. Nos. 103 and 104).

FIG. 103.

FIG. 104.

Fencing of steep banks

The protection of drives where there are steep falling banks on one or both sides is often necessary, for horses sometimes become very nervous when passing along them for the first time. A simple horizontal bar about three feet three inches from the ground and supported at intervals of about ten feet by a stout post will provide all that is necessary to give an assurance of safety.

The planting of the banks of drives and the treatment of their terminations, are referred to in another chapter.

FIG. 105.—GARDENS AT PRESTON, FOR W. W. GALLOWAY, ESQ.

L. A. P. 1912

CHAPTER VII.

Very gratefully do the average mind and eye accept the steadying foreground stroke and clean-cut measuring line secured by the levelled areas and symmetrically planned walls or banks of a well-balanced terrace scheme, against which to measure the freer effects of foliage and the imaginative mellowness of distances.

There are, of course, many capacious minds true to the characteristics of the rough-and-tumble Briton, whose ideal is absence of regularity, and who prefer that everything shall be spontaneous, fresh and warm from the fountain, with nothing in any sense of the word conventionalized. Whatever the personal preference however, it may be taken as an axiom that the immediate surroundings of an English home must, before all things, possess and express a spirit of restfulness, a quality which is generally secured most effectively by means of a more or less formal terrace scheme.

*Restful
effect of
terraces.*

Although some form of terrace is shown in connection with nearly all the gardens illustrated in this work, it is not intended to insist on this feature as a necessity. There are notable instances where there is no regular terrace scheme, but every landscape architect whose work has obtained recognition agrees that, in all but the most exceptional cases, to give a proper connection between the house and garden, a formal arrangement near the house is essential, and domestic architects who have undertaken the design of the garden have always made the terrace an important part of their scheme.

*Terrace not
always
necessary.*

A terrace is considered by most people as a raised platform, often a mere strip of walk some eight or ten feet wide, occupying the ground between the house and garden, the purpose of which is not very clear, as it can scarcely be considered as a part of the garden scheme and the residence apparently disowns it.

It is not in this restricted sense that I propose to deal with its design and construction, but rather as the whole plateau on which the house stands, together with the level enclosures referred to elsewhere as outdoor apartments, forming a part of the architectural scheme. These, in many cases, include, in addition to the main terrace a series of flower gardens at varying levels, each portion so arranged as to be complementary to the others and the whole forming one comprehensive plan.

*Æsthetic
purpose of
the terrace.*

The terrace scheme being in such close contact with the residence, and probably the most prominent feature in the more ornamental portion of the grounds, it is necessary that, in designing a new garden, it should have consideration before other portions are dealt with. While the terrace cannot be divorced from them, but must be designed in relation to them, it will usually be found that, at the same time, its design very largely decides the main lines of the whole scheme so far as they are not already fixed by the contours and other natural features of the site. To what a great extent this is true will be at once evident on examining the accompanying plan of gardens at Anglevillière, near Paris, designed by the Author (Ill. No. 107). Here vistas of paved walk,

*Terraces
dominate
entire
scheme.*

TERRACES AND TERRACE GARDENS.

flower garden, ornamental water and green glade all centre on and have their purpose in connection with the terrace scheme.

The methods to be adopted in this important work have already been briefly indicated in Chapter III. As is there explained, the terrace being the centre round which the pleasure grounds or woodlands are arranged, attention would first be directed to discovering and framing those features visible from it which have in them the elements of the picturesque, or which in any way give character and individuality to the site. "Nothing," says Sedding, "is prettier than a vista through the smooth-shaven green alley or an archway framing a view of the country beyond," and it is for the creation of such effects that the designer must aim in the arrangement of his terraces and particularly their steps and the placing of seats, arbours or bastions so as to emphasize them when created, at the same time taking care that the balance and symmetry of the scheme as a whole are not endangered in the treatment of individual features.

*Adapting
terrace
levels to fall
of ground.*

The points of special interest having been noted we may proceed to arrange the widths and levels of the various terrace plateaux on an axial section line such as that described in Chapter III., and shown in illustration No. 12. The resulting areas having been pegged on to the ground, a "grid" of levels should be taken at points either ten, twenty-five or fifty feet apart over the whole of each of them and an average struck which will more accurately determine the finished level of each portion of the scheme. Where the filled-up portion of the terrace is supported by a retaining wall, the fact that the excavated material will occupy more space than it did before removal must be taken into account, but where grass slopes are formed where the level of the ground is raised, this will not be necessary as the amount of surplus material will be just about enough to make up the slopes.

*Termina-
tions of
terraces.*

More terrace schemes fail through the lack of decisive and marked terminations than from any other cause. While a bold and effective treatment may be given them in their relation to the main façade of the house, and the whole scheme is centralized by the planning and scale of symmetrically placed steps and bastions, the ends of the terrace are allowed to "fade away" as it were into the less conventionally planned portions of the grounds. In

FIG. 106.—THE END OF THE BOWLING GREEN, FOOTS CRAY PLACE.

many cases it has obviously been felt that all was not as it should be, and additional central features, such as heavy and over-elaborated flights of steps, are added so that the eye is drawn away from the weak extremities. Such palliatives are, of course, worse than useless, and nothing but full recognition of the fact that the strongly marked cross lines of the terrace balustrade and paths themselves form a vista, which must be appropriately

closed at its termination, can supply a corrective. In the plan of the gardens just referred to (No. 10), the door to the kitchen garden would be so designed as to supply the necessary emphasis, and in other cases a small arbour, a boldly proportioned bastion, a seat with a little pentroof over it backed against the wall, or a circular seat like that shown in (No. 106), with a screen hedge behind, might be substituted.

FIG. 107.

TERRACES AND TERRACE GARDENS.

*Widths of
terraces.*

Much space has been devoted by writers on garden design to the length and width of terrace gardens, but, as will be seen from what has been already said, this is a question which very largely decides itself. Except where a raised plateau is being specially made on an entirely flat site, on which to place the house, it will be governed by the contours considered in relation to the height which is desirable for the retaining walls.

FIG. 108.

For instance, if the average fall in No. 108 is one in fifteen, and it is decided that retaining walls cannot be made higher than will support a bank of earth four and a half feet high

without appearing clumsy, the result will be as shown, and the proportions between the widths of the two terraces will also be fixed between very narrow limits, for moving the upper terrace wall would immediately throw the finished level too high or too low in relation to the floor level of the house. The broader the terraces on a given slope the higher the terrace walls, and so it becomes a question of so adjusting the breadths as to guard against crampedness on the one hand and repellent-looking engineering feats in the walls and their steps which may look too much like fortifications if too deep and heavy. In those exceptional cases, however, where the conditions allow a choice of widths, the terrace next to a mansion of average height and frontage should not be less than twenty-five feet wide, while for the lower terraces, one hundred and twenty feet by sixty feet, or larger in the same proportions, will generally be found suitable.

Only by adapting the terraces to the natural levels of the ground can we secure that restfulness and harmony between the home and the landscape which are so desirable, and obtain harmonious composition whether they are viewed from the mansion or surrounding gardens. Any attempt to act independently of the contours will result in giving the whole an air of artificiality which will be instinctively felt by the beholder without his being able exactly to account for it.

FIG. 109.

Examples.

The importance of fitting the house and garden to the natural contours of the ground is shown on illustration No. 10. Here each of the four garden levels can be seen from the window of the great hall, while on the North side the kitchen garden is hidden, with the exception of the central walk, between the herbaceous borders. On this site the cross fall is fairly even, but in the greater number of cases the falls or rises are at varying angles and gradients on each side of the house.

TERRACES AND TERRACE GARDENS.

In some cases the terraces may even rise from the house on one side while they fall on another, as at Blicking Hall and Tissington and partly at Haddon Hall, or as at Graythwaite Hall (No. 399), and again at Wood, in North Devonshire (No. 409). Everything depends on the natural fall of the ground.

Although terraces are usually level, circumstances may sometimes arise which will allow them to follow to a limited extent the slope of a steep hill, as in the hillside garden designed for Henry Martin, Esq., of Windermere (Ill. Nos. 109 and 110). Again, on very steep hillsides, or where the whole face of the country for a mile or more in each direction slopes all one way, a terrace finished to a true level would appear to dip into the ground on the side which originally was highest, to rectify which it may be necessary to give the surface a slight cross fall of, say, one foot in fifty in the direction of the slope of the hillside on which it stands. In fact, there are few terraces, even where the ground below them slopes only slightly, which would not be improved by a drop of a few inches from the side nearest the house to the retaining wall. As, however, the greater part of the filled-up portion is on the side farthest from the house, this is a matter which usually takes care of itself, for after the ground has been made as solid as possible and paved or gravelled to a truly level surface a little settlement in the filled portions is sure to take place. Nevertheless, every effort should be made to get the ground solid before finishing the surface, or the settlement may be excessive. In some districts this is best done by watering with a hose, but in most materials, ramming must be resorted to. Even after thoroughly ramming or watering, or both, time must be allowed to elapse before the surface is made up, and some settlement may go on for twelve months or more where the filling is deep or the material contains much fibrous or other organic matter.

The various levels of a terrace scheme having been decided upon it becomes necessary to consider the treatment of the lines of division between one level and another.

*Terraces
with a cross
fall*

FIG. 110.—TERRACED EFFECT ON A STEEP HILLSIDE.

TERRACES AND TERRACE GARDENS.

There are numerous ways of doing this, but either walls or grass banks are the ones usually adopted.

*Grass banks
or walls.*

Grass banks have the advantage as regards first cost, but, on the other hand, there is the constant cost of upkeep to be considered, which may make the wall really cheaper in the end. Where grass banks are adopted, they should slope at an angle which will give a rise of one foot in every two feet of horizontal breadth. Not only is this a most convenient slope to fit steps to, but a steeper bank is very apt to "burn" in hot weather, that is

FIG. III.

to say, it is so naturally dry that the grass is scorched and deadened. On the other hand, a flatter bank is apt to give a very undecided line of demarcation between the levels it

separates. Æsthetic considerations are usually all in favour of a wall. Not only is a flower bed difficult to arrange satisfactorily at the foot of a slope, but the bank will usually remain a bare expanse of shaven grass and therefore not be sufficiently differentiated from the lawns above and below, whereas the wall would very soon be garnished with a mass of roses and other free-flowering climbers. Where the difference of level between the two terraces is unusual in either way, a wall is again indicated, for very deep banks are difficult to mow and very shallow ones are ineffective. Quite a terraced effect can be got with a difference of level of as little as one foot, if supported by a dwarf wall with the coping standing about six inches above the higher ground level, but with a grass bank such a slight rise would usually be almost entirely lost. Such a wall may be seen on the plan of a garden at Berkhamstead, shown in illustration No. 385. In many cases, again, the amount of ground occupied by a bank is a consideration. If a wall is substituted it can be saved for a broad border at its foot (see Ill. No. III).

Most garden lovers prefer a wall overgrown with climbers, yet are deterred from erecting one, fearful of incurring the cost of such a feature, and therefore adopt a slope laid down with grass, or planted either in an informal manner or with a variety of shrubs. The cost of a wall, however, depends entirely on its elaboration and enrichment. If the architectural character of the house demands in its immediate vicinity a pierced or balustraded finish, which of itself may

FIG. II2.

cost twenty shillings per foot run or even more for the pierced work only, the outlay, for an extent of wall so erected, would, of course, be heavy, but there are comparatively few occasions on which such elaboration would be in keeping with the architecture.

*Treatment
of terrace
walls*

Where they are not discordant with the scale and effect of the house, terrace walls of simple design, built in local material, may often answer all purposes more effectively than elaborate erections, and, when covered with hardy climbers, look equally interesting,

TERRACES AND TERRACE GARDENS.

FIG. 114.

TERRACES AT ABOVEBECK, GRASMERE.

FIG. 113.

TERRACES AND TERRACE GARDENS.

or even more so than any other. Illustrations Nos. 112, 113 and 114 demonstrate this point. The first shows a terrace wall in brick in the Home Counties, and the other two, how well the black slate of the Lake District, with its necessarily massive construction, harmonizes with its rugged surroundings. Most of the terrace walls designed in connection with the gardens illustrated in this work are finished with a simple flag coping. Some have battered walls, and others have the surface broken up by pilasters or by sloping buttresses with balls or sugar-loaf finials over each buttress and lead urns or large vases to mark the sides of steps or angles. A retaining wall with the coping only a few inches above the inside ground level is usually sufficient where the difference in the levels is not more than three feet six inches, while for cases where the difference is greater, some form of protecting wall or balustrade, such as those shown in illustrations Nos. 118 and 119, is necessary. There are cases where there is not justification for a balustraded wall and yet the terrace looks unfinished without it. In such instances, a hedge of yew, privet or cotoneaster, planted close inside the dwarf wall, trimmed perfectly square and kept quite low, will be useful.

Height of walls.

The height of walls above the finished ground level on the higher side may vary from the dwarf wall just considered up to three feet three inches, the latter being known as "leaning height." Unless the fall to the lower terrace exceeds six feet, the best height for a solid wall is seventeen inches or "sitting height," while, for deeper terraces, it is safer to make it from thirty-three to thirty-nine inches high.

Balustraded walls.

Pierced or balustraded walls are seldom a necessity. In their favour it may be urged that, independent of the architectural effect, they add to the beauty of a terrace by allowing more to be seen of lower lawns and flower gardens than do solid walls. When the terraces are formed on the side of a steep hill and are therefore necessarily narrow and deep, as in illustrations Nos. 116 and 117, the openings allow more of each level to be seen, and when viewed towards the house, they prevent the garden from appearing as though entirely formed of walls.

Harmony with residence necessary.

A terrace wall cannot, however, be considered as a feature separate and distinct from the architecture of the residence. A brick or stone mansion in the style and of the period of Inigo Jones, or a modern residence in which stone and brick are combined in the same way, require similar terraces. If stone dressings are used in the house they must also be used in the terrace walls; they might not extend beyond the quoins and coping, but in some form they are necessary to secure harmony.

Simplicity is to be aimed at, yet there are many instances in which it is necessary to use ornament. The charming examples of balustraded walls at Montacute, Brympton, Wilton, Haddon, etc., are each indispensable to the success of and show a pleasing fitness to the garden they adorn. Pierced walls accord with houses which are light in design, like some of the later Tudor residences, while iron bays between stone piers often form the best balustrade to a Georgian residence. As already mentioned in the chapter dealing with garden walls, quaint use may sometimes be made of local materials, such as land tiles and ridging tiles for small or very rural gardens, but there is a distinct danger of extravagance which must be guarded against.

FIG. 115.

To give a clear impression of what is meant by simple and elaborate terrace walls, a series of designs drawn to scale of terrace walls designed for gardens planned by the Author, is given in illustrations Nos. 118 and 119. In addition to the examples in stone, there is one which may be interesting in its way, viz., a wooden balustrade designed for the terrace in front of an old house in Staffordshire, while No. 112 shows a combination of brick with wood balusters. No. 118 shows stone terrace walls with bays of wrought iron filling in the circular sweeps.

TERRACES AND TERRACE GARDENS.

FIG. 117.—TERRACE WALLS AT KEFFOLDS, HASLEMERE.

FIG. 116.—TERRACE WALLS AT KEARSNEY COURT.

TERRACE - WALLS - AND - BALUSTRADES -

STONE - BALUSTERS

PLAN.

IN - BAYS - 10 - 12 FEET - LONG -

STONE - ARCADED -

PIERCED - STONE -

VARIOUS - FINIALS -

SQUARE

LEAD - VASE -

STONE - AND
WROG - IRON -

10 5 10 FEET

FIG. 118.

TERRACE - WALLS · AND · BALUSTRADES

BRICK · & · TILE ·

ORDINARY · BRICKS

· BRICKS · & · ½ ROUND · TILES ·

· ½ ROUND · TILES

· PIERCED · BRICKS ·

· BRICK · PIERS · WITH · WOOD · BALUSTRADES ·

· SCALE · OF · FEET ·

FIG. II9.

TERRACES AND TERRACE GARDENS.

Steps.

Steps may always be made very pleasing as well as highly necessary features in a terrace scheme. They, together with their flanking walls, lend themselves to a variety of treatment which renders monotony inexcusable, but, of course, use and convenience should be considered before mere effect. In nearly every case, both convenience and effect are enhanced by making the steps broad and shallow or as the builder will put it, by making the treads broad and the risers easy; and the size which I have found to be most generally useful has a tread thirteen and a half inches wide making with the projecting nosing fifteen inches, with a rise of five and a half inches.

Steps in grass banks.

Where steps are arranged in connection with a grass slope with a batter of one in two as recommended above, they could, of course, only have a tread of twelve inches with a rise of six inches, but the effect of a tread of thirteen and a half inches can be obtained by having a projecting nosing of one and a half inches obtained by either working a mold on the front of a solid stone step, or, where the step is built up of flags, as in No. 115, by allowing the flat stone tread to overhang the same distance. Where steps accompany deep terraces, it will be found advantageous to divide them into two flights, the landing being so arranged as to allow of a summer-house or tool-shed below, and a terrace bastion above, which may often be recessed sufficiently to take a garden seat, or one may be built in the same material as the walls and furnished with a loose lattice cover. Where, however, the steps do not exceed ten in number, they may be effectively arranged at right angles to the terrace, each side of the steps being supported by side walls, or where this would cause them to project too far into the garden below, half of them may be recessed back into the terrace, and the other half built as spreading steps without side walls (No. 123). Spreading steps are those formed without side walls as shown in Nos. 120, 121 and 122, and are most usually used where the difference in level between the inside and the outside of the

Various forms steps may take.

FIG. 120.

FIG. 121.

FIG. 122.

FIG. 123.

FIG. 124.

TERRACES AND TERRACE GARDENS.

wall does not exceed four feet six inches. They may be arranged as a semicircle (No. 122), a half octagon (No. 121) or square (No. 120), but whichever shape is adopted, they should have a very ample spread. In the perspective view of the grounds of Foots Cray Place, Sidcup (Ill. No. 415) will be seen a design which combines the best features of both semicircular spreading steps and a straight flight between retaining walls. Occasionally in very elaborate flights of steps accompanying early classic renaissance mansions, the balustraded side walls are curved so as to make the steps broader as one proceeds down them. This arrangement has much the same effect as spreading steps, and exactly the same *raison d'être* in allowing the steps to be approached obliquely from below where a path runs right and left from their base.

Where the terrace is supported by a very low wall only two or three feet high, steps of great width may be made to add to the effectiveness of the terrace. Thus, *Width.*

FIG. 125.

FIG. 126.

for a summer-house having a central verandah, I proposed steps thirty feet in length, extending across its full breadth, the work, when carried out, producing a pleasing effect at a small cost.

Long flights of steps give the Landscape Architect his opportunity both to invent easy and convenient connections between varying levels and also to secure striking effects. To obtain the first, change of direction and frequent half-landings are essential, with seats or rest-houses at points of interest when a great number of steps is necessary. Unless, however, alternative sloping paths are provided for reaching the higher levels, repetition of flights on the same axial line should be avoided. The magnificence of the great stairway at the Villa d'Este at Tivoli is often quoted as the grand model for a series of steps, but those who know these gardens will remember the numerous more easy ways from one part of the grounds to another. As an example of a change of

Long flights.

TERRACES AND TERRACE GARDENS.

direction, here (No. 125) is a plan and elevation of a terrace scheme on a mountain side, the total drop of twelve feet being divided into twenty-six steps. A second drawing (No. 126) shows the solution of a similar problem but with a rise of only nine feet, while the third (No. 124) gives another arrangement where a sense of ease is secured by spreading out the steps. Here the rise is about six feet six inches.

Construction of steps.

Steps may be constructed in a variety of ways with different materials to harmonize with different styles of architecture. We have already spoken of those cut from solid blocks of stone and those built up of flags. Others may have the tread of flags and the risers built in rough local stone or brick, or, where an even freer treatment is called for, the flag may be a narrow strip along the front of the step and the back be filled in with cobble paving. Where the architecture of the house and terrace walls is of brick, especially where a wooden balustrade is added as described above, effective steps may be made to match, with a strip of English oak about four inches wide and three inches deep along the front of each step, the tread at the back and the riser below the oak being built of rich brown-red brick.

Surfaces of terraces.

Terraces may have their surfaces finished in many ways, and those not immediately before the house will form gardens of various kinds. That which is right under the windows of the principal rooms and which is usually a comparatively narrow outlook promenade from which the rest of the grounds and the prospect are viewed, will, however, need special treatment. If it is to fulfil its purpose it must usually be available for promenading at all seasons of the year, and this means that, to provide a dry path underfoot in the Winter, it must be flagged or paved in some manner. It is not necessary, of course, that it should be paved all over. Sometimes panel-shaped flower-beds will be cut out of the paving, in others there will be a paved

FIG. 127.—PLAN OF GARDENS AT THE GRANGE, WRAYSBURY.

TERRACES AND TERRACE GARDENS.

path with grass at either side with or without flower-beds in the grass, or there may be a flower border with a stone edging on that side of the paved path nearest the house and grass on the other side. A still freer treatment would be obtained by having a gravelled path with a row of flags down the middle, making a line of paving about two feet six inches broad, or a similar strip of flags might be laid with cobble paving on either side. Such arrangements open the way for harmonious colour schemes where these would be in keeping with the architecture; for instance, in a South Cumberland garden, one might combine the rich red St. Bees sandstone with the blue-grey local cobble paving, and in other districts one may have cobbles and brick, cobbles and stone, or two colours of slate, blue-black and green, or two shades of green.

The formation of flower gardens and lawns is dealt with elsewhere and it is only necessary to deal with their application to the terrace scheme. Generally speaking, beds

*Flower beds
on the
terrace.*

FIG. 128.—TERRACED EFFECT BY LOWERING GROUND AT LEES COURT, FAVERSHAM.

of a definite panel design and divided by narrow walks of a medium width of two feet six inches are often better than those cut out of grass. Where grass is preferred as a background, the widths between the beds should be greater than for gravel or paving as narrow strips of grass are constantly losing their shape and level appearance. The proportion between grass walks and borders will need arranging very carefully, and one or the other should predominate, and the others be made subservient to it in the scheme of decoration, or the result will suggest a muddle.

Tennis and croquet lawns and bowling alleys, the sizes and practical formation of which are dealt with in Chapter IX., in their demand for level unbroken stretches of greensward, are peculiarly suited to the terrace scheme. Their inclusion has also the advantage of placing them near to the house, and in those numerous instances where a narrower higher terrace overlooks the broader one on which the game is played,

*Games—
lawns on
the terrace.*

TERRACES AND TERRACE GARDENS.

FIG. 129.—PAVED GARDEN, THE GRANGE, WRAYSBURY, NR. STAINES.

FIG. 130.

TERRACES AND TERRACE GARDENS.

a convenient point of vantage from which to view the players is obtained while the tea-houses, covered and shady seats, stores for nets, racquets or bowls, and other necessary architectural adjuncts of such quiet games, can be made a part of the scheme for the terraces.

Most of the gardens illustrated have tennis lawns placed close to the house, and in positions overlooked by the principal apartments. Nearness to the house is the more necessary where the lawn is to be used exclusively for croquet, the game of pure skill, in which neither robust natural force nor physical endurance secure an advantage, and which is therefore peculiarly adapted to elderly people, who would be induced to play often if the lawn were very accessible. For this reason, it should be protected from East winds and in other ways be made as snug as possible by the provision of sheltered seats and arbours, and where necessary, should also be enclosed by stout yew or holly hedges.

Gardens too flat for a terrace.

Many persons express disappointment because their gardens are all on one level, and they therefore conclude that it is useless to attempt any distinctive arrangement, and in particular, that any substitute for a terrace scheme is impossible. I am induced therefore, (though perhaps somewhat out of place) to give a plan of the gardens laid out for G. M. Freeman Esq., K. C., at Wraysbury near Staines (Ill. No 127), omitting for want of space a formal lily pond at the end of the tennis lawn.

The point which it is particularly desired to emphasize in this scheme, is that, although it is impossible, from the level nature of the site, to obtain even a slightly raised plateau, still the whole spirit of a terrace as well as its practical advantages has been caught in the paved panel garden in front of the house which is more plainly shown in the photograph (Ill. No. 129). It will be seen thus that no one need despair of obtaining a terraced effect even on a flat site and this effect can be considerably helped by the formation of sunk gardens, thus obtaining greater contrast in the levels. A Typical example is shown in the illustration of the gardens at Little Onn Hall (Ill. No. 405).

Terraced effect by formation of sunk gardens.

A successful experiment in this direction on a somewhat extensive scale is shown in illustrations Nos. 128 and 130, which represent gardens laid out at Lees Court near Faversham, the ancestral home of Earl Sondes, for Mrs. Halsey. The main garden is on the South front of a fine example of Inigo Jones' work, now unfortunately almost entirely destroyed by fire. Here a good low terraced effect was obtained by sinking the rose garden and forming the broad central grass walk at a level of two feet below the main flagged terrace as shown in the photograph and indicated on the section at the foot of the plan. This method of obtaining a terraced effect by the formation of sunk lawns can often be adopted with great effect, especially on light, well drained soils. In wind-swept gardens such as are often met with along the coast, they not only give elevation to the house and variety to the garden, but also ensure sheltered spaces for flowering plants.

It may also be pointed out that a flat piece of ground usually possesses the quality of breadth so difficult to obtain on a hillside and, in treating such a site, the fullest advantage should be taken of the least rise or fall, so that, as previously stated, slight differences of level may be emphasized. The mistake made by many garden designers in the past has been in endeavouring to produce unnatural undulations and mounds, instead of aiming at retaining the predominating quiet peacefulness which the site already possessed, making everything harmonize with it.

FIG. 131 --ROSE GARDEN, NEWTON GREEN HALL.

FIG. 132.—SUMMER-HOUSE AND PERGOLA IN ROSE GARDEN, NEWTON GREEN HALL.

CHAPTER VIII.

In the immediate provision for flowering plants, we reach what is, in one way, the culminating point in our subject, for not only are they the finishing touch in the composition, the feature up to which everything else in the whole scheme leads, but they must appeal to every garden lover, for, unlike many other items of garden equipment, their use is essential to every class of domain, be it large or small.

Whether the garden be formal or informal they are equally necessary, if it is to fulfil its function worthily, though there is no doubt that the architectural gardener is more entirely dependent on them than the landscapist, for while in his case they form an integral part of the scheme, in the landscape garden they are often incidental and super-added adornment, and may even be intruded in such a way as to detract from the *tout ensemble*, as when flower beds cut up an otherwise well-arranged lawn.

It is not too much to say that, while the landscapist could form a garden with the sole aid of trees, shrubs, greensward and water, the formal gardener depends on flowers to clothe his balustraded walls, drape his pedestals, break up his flat areas, give vivid colour contrasts against the dark green of his clipped hedges, and everywhere relieve angularity with the waywardness of all growing things. All architectural gardening is, in fact, designed from first to last either as a background or skeleton for flowers and climbers, as when the arbour is covered with rampant foliage vines, or to stand in bold relief against a mass of greenery like the statuette in its alcove of yew, or to give point and centralization to the grouping like the sundial in the centre of the rose garden; and this dependence on the best that our gardens can show is to our mind, all in his favour.

In the landscape garden of fifty years ago, when terracing had fallen almost entirely into disuse, garden designers succeeded in obtaining many pretty effects by the arrangement of gently undulating lawns with shade trees on the outer fringe and as occasional groups on the lawn, and such gardens were usually embellished with a series of flower beds arranged in an orderly manner. The same system has been largely copied in American gardens and, it may be added, often with fine effect, especially when the house is in the colonial Georgian style, frame-built and painted white. Under such conditions the strong colours of geraniums, begonias, and verbenas give cheerfulness to the garden. In the British Isles, a similar treatment of beds and lawns is often very effective, but quieter colour effects are to be desired.

Nevertheless, however informal the planning of a domain as a whole may be, even though wild and rocky gardens predominate, flower borders, being essentially an artificial product, invariably result in a part of it being treated in a more or less formal manner. Indeed, it would almost seem that their use forced the so-called informalist or landscape

*Importance
of flower
beds to
scheme as a
whole.*

FLOWER GARDENS, BEDS AND BORDERS.

gardener to become the most pronounced formalist. This only proves that every man who approaches the subject of garden design intelligently, comes to recognize the value of contrast, colour and rhythmic order, as not only characteristic of, but essential to, every well-planned scheme.

*Flower beds
in formal
and
informal
schemes.*

There is this difference, however, that while in the formal scheme the flower beds are usually grouped round the house as the decorative accompaniments of the residence, in the landscape garden they are treated as "places apart," except, perhaps, for a narrow border round the house and a few beds along the main walk. This is quite a logical outcome of the positions of the two schools of garden design, the first of which aims at a geometrical composition softened by Nature, while the latter produces one based on natural landscape, but with parts emphasized by art.

Nevertheless both schools have much in common, one of the most important points being the correct proportioning of colour spaces, together with the tone of the colouring and the question as to the season when each bed or portion of the composition should be at its best. If, for instance, there are large groups of rhododendrons which provide sheets of vivid and alternating colour in late Spring, but are masses of monotonous green in summer, the flower beds and borders should be at their best in July, August and September, for rhododendrons in full bloom in June will not brook competition.

*Form and
shape of
beds.*

Other important points common to all flower gardens, are the formation of the borders themselves and their size and shape. With regard to the former, it is of the utmost importance that both the preparation of the soil and drainage should be thoroughly well done in the first instance, as the success of the garden depends entirely upon this. As to the methods to be employed, all that is said in Chapter XV on this subject applies equally to the flower garden, and it is only necessary to add that the object should be to form a soil neither too light nor too heavy, but lighter in a naturally moist situation and *vice versâ*, except in the rose garden, where a heavy clayey soil is demanded, as rose-trees prefer this. In any case, too, flower beds should not be formed round shrubberies, or near large trees or shrubs, which unduly rob the bed or borders of their nutriment.

The adoption of simple forms of flower beds and the avoidance of purile and ridiculous shapes would seem a matter which would need no urging, yet a visit to almost any garden will show how necessary a word of caution on this subject is. It is not that attention has not been drawn to the matter by writers on gardening, for even a hundred years ago, Nichol, who styled himself "the Horticultural Architect," wrote:—"A variety of forms (of beds) may be indulged in, without incurring censure, provided the figures be graceful, and not in any one place too complicated. An oval is a figure that generally pleases, on account of the continuity of its outline; next, if extensive, a circle. Next, perhaps, a segment in form of a half moon, or the larger segment of an oval. But hearts, diamonds, triangles, or squares, if small, seldom please. A simple parallelogram, divided into beds running lengthwise, or the larger segment of an oval, with beds running parallel to its outer margin, will always please." By "half moons" no doubt the writer meant semi-circles as crescent shapes are not only difficult to fit in with a design, but are the worst of all forms for effective planting.

The shape and size will, of course, be largely influenced by the size of the parterre and the nature of the flowering plants to be used, but in any case, fancy patterns are to be avoided, the simpler the design of the beds the better. Compare the number of flowers which can be grown in an oblong, say, twelve feet long and five broad, with the amount grown in beds of the same superficial area divided up into curves and acute angles. In the latter instances, although the same quantity of soil surface is provided and more room is monopolised, the beds are not available for plants in the same way as in the simple oblong, because in the oblong every inch can be planted, while in the others there are long narrow points to each bed which are more or less useless. Quite apart

from these practical considerations, however, simple forms are best, for those having complicated shapes are distracting to the eye and claim attention for their own sake, whereas they should be considered as a background to the flowers and not as a competing feature.

FIG. 133.

large number of cases where beds line either side of a path, and may be further varied by the insertion of posts for climbing roses at regular intervals, or rose arches across the path. The plan of the panel garden at Wraysbury, near Staines (Ill. No. 127), show an effective and simple arrangement of beds which will bear repetition, or might, whilst retaining the general characteristics, be alternated as in illustration No. 135. The spaces between the beds should not be too great where they are divided by gravel paths, or the gravelled area will appear obtrusive, but where the beds are cut out of grass, the remaining strips between them should be wide enough to take a mowing machine and to allow of the necessary trampling incidental to the care and trimming of the plants without growing bald.

A further important point is the provision of beds large enough to allow of the plants being arranged in masses. Every student of the works of those artists who make a special study of garden subjects for their paintings, will realize how one and all, they glory in large masses of brilliant colour produced by growing a quantity of one sort of plant together. Many years ago, Mrs. Siddons, the actress, in her own garden on the Harrow Road, set this most estimable fashion, and one can only wonder that it has not been more universally followed. The sizes of the beds for this purpose must, of course, be regulated by the scale of the flowering plants they are to accommodate; for instance, borders in which oriental poppies, anchusas, delphiniums and hollyhocks are to be planted, must be wide, and should be long in proportion to their width. On the other hand, beds which are to be filled with pinks, lavender, and plants of similar

Plain oblongs cannot always be employed, of course, but these relieved by circular beds, such as those shown in the accompanying sketch (Ill. No. 133), or the other arrangements shown in illustration No. 134, are adaptable to a

FIG. 134.

Arrangement of plants in masses.

FIG. 135.

scale may be much smaller. A good average width for a border to be planted with the larger herbaceous plants is nine feet, while beds for smaller things may vary from this down to only two feet broad.

Again both formal and informal gardens may have their parterres devoted to one special class of plant or flower, as in the case of the rose garden, herbarium for medicinal plants, or the Alpine garden. Hogg, the poet, writing of the flowers which were fashionable in his day says,—“In some particular instances I am disposed to copy the

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Dutchman, and I would have my beds of hyacinths distinct, my tulips distinct, my anemones, my ranunculuses, my pinks, my carnations distinct, and even my beds of double-blue hollyhocks, violets and dwarf larkspurs distinct, to say nothing of hedge-rows of different kinds of roses. Independent of the less trouble you have in cultivating them when kept separate, you have, as I said before, beauty in masses, and you have likewise their fragrance and perfume so concentrated that they are not lost in the air, but powerfully inhaled when you approach them."

*Rose
gardens.*

Of all the flowers which repay the provision of a separate garden and individual treatment, the rose by popular consent has first and unquestioned claims to special consideration and choice of position. No other flower provides such a number of varieties with such a wide range of effects and, at the same time, an extensive flowering season. The compact bedding varieties, standard pillars and rampant climbers for training over the high ugly wall, clothing the pergola or draping the summer-house, each have their distinctive habit, so that, in a representative collection, monotony is impossible.

Though such gardens are usually placed near the residence or in direct communication with it, this is not always so. For instance, where a house is built in a position of great natural beauty, it may be desirable to leave the surroundings as far as possible in a state of nature. This is often wisely decided upon, though it needs infinite skill and patience to harmonize the distinctly artificial with the obviously natural. The transition between them is often supplied by means of close-shaven undulating lawns, interspersed with groups of ornamental trees, conifers or rhododendrons. The transition thus attained is not always quite successful, and could have been managed better by gardens, which whilst distinctly geometrical in design, would not be assisted by any architectural accessories. In many such cases the situation will be too barren and bleak for roses, and thus the garden will be placed elsewhere, but, in those cases where they would succeed, no class of flower is so well adapted to producing the

right note as the briars and single hybrids which would harmonize with the natural scenery, while, nearer the house, pillars, arches or festoons of some of the innumerable climbing varieties would provide a suitable setting for the architecture and would enclose the formal garden. Within the garden itself each bed might be filled with its own variety of choice hybrid tea roses, the beds as a whole forming a perfect symphony of soft colouring.

*Gardens
devoted to
one class of
plant.*

The garden devoted to one class of plant or flower may also be placed away from the house to obtain the necessary soil and aspect. The transition from rock or dry arid tracts to bog, which will be found in many gardens in hilly districts, may make this necessary, and provides unlimited scope for the arrangement of gardens of different sorts, for roses in one part, and rhododendrons or azaleas in another, and so on. These are the opportunities which, if seized and adequately used, secure individual expression to a garden.

The allotment of several gardens to distinct classes of flowers is a very good and

FIG. 136.—TREATMENT OF OLD WALLS.

FLOWER GARDENS, BEDS AND BORDERS.

appropriate plan in those English domains which have grown out of farm houses, and where the old picturesque farm buildings and enclosures have been retained and adapted to garden uses. Orchards will remain much as they were, and cattle yards and other enclosures be converted into gardens and green courts, and where this is done with skill and taste, the result will often fully compensate for the loss of the terrace scheme, with its variety of levels. The first object should be to give some direct connection between these several gardens, the openings being treated so as to secure long vistas such as that shown in illustrations Nos. 137 and 138. An alternative which is capable of producing very pretty effects is obtained by piercing the wall between two such gardens with a series of arched openings similar to those shown in illustration No. 136. Whatever other treatment of the old walls is undertaken, however, the clothing of them with beautiful climbers, trained to trellis where necessary, should form a definite part of the scheme. The best method of

FIG. 137. OLD WALLS BROKEN THROUGH TO FORM VISTAS. FIG. 138.

dealing with such gardens is to treat the spaces between the beds as paved walks, edging them with box or stone. Between the various beds forming part of one panel design, they would be kept quite narrow, say two feet to two and a half feet broad, while the paved space round each panel would be broader, say six feet across in ordinary cases.

Illustration No. 140 shows an arrangement which is capable of delightful effects in which the garden is devoted entirely to roses and carnations, two favourite flowers, which, under skilful management, harmonize perfectly. The design allows the beds to be changed, should this be thought desirable, say, alternate years, in order to obtain some of the benefits of crop rotation. This garden is placed between the walled-in kitchen garden and the well-known and beautiful pleasure grounds at Madresfield Court, the seat of Earl Beauchamp, and provides a good and successful solution for a difficult problem, that is, how to tone down the aggressive lines of the brick walls which are essential to a large garden where high-class horticulture is pursued.

FLOWER GARDENS, BEDS AND BORDERS.

In this instance the garden is surrounded by high yew hedges, the growth of many years, and trimmed to a number of quaint shapes. The beds are edged with box, and the interspaces gravelled; but a design of this kind can often be more economically and effectually treated as an enclosed grass lawn with the beds cut out of the turf.

FIG. 139.—A CARNATION WALK.

whole being arranged as shown in the sketch (Ill. No. 139). This garden is about a hundred yards from the house, and has the advantage of a fine background on either side of native silver birches and Scotch firs, with spaces cleared and planted with rhododendrons.

FIG. 140.—THE CARNATION GARDEN, MADRESFIELD COURT.

During the later Victorian period gardens were not only devoted to one or two flowers, but also entirely to the cultivation of hard-wooded plants such as ericas, daboceas, alpine rhododendrons, azaleas, kalmias, sedums and andromedas. Some of these

FIG. 141.—GRASS WALK AT LACIES, ABINGDON.

FIG. 142.—IN THE RESERVE GARDEN, FOOTS CRAY PLACE, KENT.

FLOWER GARDENS, BEDS AND BORDERS.

gardens are quite formal, others more or less informal, which latter method seems more suited to the character of the plants, which, while allowing of good grouping effects, are more closely related to wild nature than to the highly-dressed parts of the garden. Such arrangements are usually called American gardens, and may often with advantage be laid out near the outskirts of the grounds, or in connection with the pinetum where one exists.

Herbaceous borders.

We have spoken of the formation of herbaceous gardens in the kitchen garden in Chapter XV., but there is one consideration which specially applies to their planning in relation to the point from which they are to be viewed. This has more force when they form a part of the ordinary pleasure grounds. Owing to the long flowering season which is usually attempted, there must necessarily be large areas of soil or flowerless plants in every border, resulting in a somewhat patchy and unsatisfactory appearance.* Many devices have been resorted to, to obviate this tendency of the herbaceous border, such as filling in the interspaces with annuals and biennials, and indeed, whatever plan is adopted to overcome this defect later on, some such arrangement as this will be necessary for the first year. Undoubtedly the best method of preventing the defect is so

FIG. 144.

to plan the borders that they are usually seen from one end, and not at right angles to the line of sight. The result is that, the perspective being foreshortened, the occasional large masses of bloom are, so to say, bunched together, the intervening spaces of soil being hidden. This means that, where a border is to be seen from one of the windows of the house, or through an open gateway, or the door of a summer-house, it must recede from the beholder. Of the two accompanying sketches showing herbaceous borders in relation to the front of a residence, the first (Ill. No. 143) shows the correct method of doing this, while the second (Ill. No. 144) shows the opposite, or wrong, way. These remarks do not apply, of course, to borders running along the bottom of a terrace wall parallel to the front of the house, as in the third sketch (Ill. No. 145), for, in this case, the border would be hidden from the house, and the principal point of view would be at the foot of the central flight of steps leading from one level to the other. The two accompanying photographs of such borders (Ill. Nos. 141 and 142) will show what is meant.

An example.

To illustrate most of the points dealt with in this chapter, a plan is given of the gardens recently laid out by the Author at Warren House, Hayes, Kent, for Sir Robert Laidlaw (Ill. No. 147). This instance is exceptionally suitable for our purpose, as

FIG. 143.

to plan the borders that they are usually seen from one end, and not at right angles to the line of sight. The result is that, the perspective being foreshortened, the occasional large masses of bloom are, so to say, bunched together, the intervening spaces of soil being hidden. This means that, where a border is to be seen from one of the windows of the house, or through an open gateway, or the door of a summer-house, it must recede from the beholder. Of the two accompanying sketches showing herbaceous borders in

FIG. 145.

* Some writers seem to suggest that a well-planted herbaceous border can bloom for eleven months out of the twelve.

FLOWER GARDENS, BEDS AND BORDERS.

it was found possible to create a chain of flower gardens extending right round the domain. The site is flat, though surrounded by beautifully undulating country, and, before the recent improvements, was covered with rough coppice wood interspersed with small groups of Scotch fir, which have been incorporated into the scheme.

The residence being of considerable size and no distant views being obtainable from it, it was obviously desirable to form extended vistas within the grounds. The principles on which this has been done is indicated by the radiating lines on the plan. This fact, coupled with the consideration that the existing lawns round the house were needed for tennis and croquet, and that the interposition of flower beds near the house would prevent a co-ordinated treatment of the lawns and accompanying groups of trees, which together combine to form the vistas, resulted in the beds being laid out in a series of

FIG. 146.

gardens on the outer fringe of the property. In addition to the new gardens shown on the plan, a rock garden and dell had already been formed on the West side of the site, and eventually it is hoped to complete this side by the addition of a water garden. On the East front, too, there was already a well-planned and furnished rose garden designed by the late Mr. George Devey, enclosed on the East and South sides by beautiful yew hedges, and, on the North side, by a brick wall.

In the following description of the new gardens with which the preceding have been linked up, the figures given refer to corresponding numbers on the plan. Starting from the East end of the main terrace (1), we have first a new sunk garden (2), this is enclosed at the end with an oak trellis screen for climbing roses and clematis, and has beds for roses and carnations cut out of the grass. On a higher level on

FLOWER GARDENS, BEDS AND BORDERS.

either side, (3), there are long beds of roses punctuated by standard Dorothy Perkins rose trees trained as balloons, the arches which cross the path being planted with choice clematis. This part of the garden is enclosed on either side by yew hedges. At the far end of this a curved walk commences which passes right round the estate, connecting the whole chain of gardens. On either side of this walk are pillar roses (4) trained to scaffolding poles nine feet high, and between these are planted miscellaneous roses and briars to form a tangle. The part numbered (5) is arranged as a panel garden, in the centre of which is a small lead figure of Cupid, while in the centre of each bed is a specially designed pillar, the line of the latter being continued through the adjoining garden. Over these are to be trained climbing roses, while the beds are to contain lavender and China roses. The garden marked (6) is to be devoted entirely to sweet-smelling flowers, among which stocks and carnations will be prominent. On either side of the steps (7) are planted groups of azalias, andromedas, kalmias and other peat-loving plants, and on either

FIG. 148.—LEES COURT, FAVERSHAM, BEFORE ALTERATION.

side of the curved walk are planted limes, which are to be pleached into a continuous canopy overarching the walk, the under side of the pleach being about eight feet high to admit open views on to the lawns. At the point marked (8) are large masses of choice rhododendrons, with irregular margins of ericas, sedums, and Ghent azalias of delicate colours, to harmonize with the rhododendrons. At (9) are herbaceous borders enclosed with yew hedges. In the centre of the circular end it is proposed to place a figure representing Spring, surrounded by beds, which are to be filled with Spring flowers, the long borders, on the other hand, being arranged for late Spring, Summer and Autumn effects. Against the existing mass of rhododendrons (10) is to be placed a figure of Autumn, which will form a fitting termination to the paved walk. The beds at the junction of several walks at the point marked (11) are filled with azalias,

FLOWER GARDENS, BEDS AND BORDERS.

kalmias, andromedas, and Autumn-flowering ericas. Thus is obtained a girdle of interesting gardens round the grounds, each part of which, while combining to form a delightful whole, has its own interest and individuality, so providing variety and, whatever be the season, from early Spring to late Autumn, some part or other which is specially rich in colour.

Plan of a rose garden

The plan of a rose garden given in illustration No. 146, and of which also views are given (Ill. Nos. 131 and 132), provides an example of quite a different kind. Instead of being part of a connected scheme like the last example, it has no relation to any definite formal plan, but is treated as a complete unit in itself. As will be seen from the plan, it, together with its pergola, garden-house and surrounding plantations, has been adapted to the irregular shape of the plot of ground which was available, and which also has a considerable fall to the South. It is approached from the stable drive on the one side, and, on the other, through an old shrubbery walk and wild garden. The design is dominated by the rose-covered pergola, which is taken as the central feature up to which everything must lead. The beds are cut out of the grass, and filled with roses, only one variety being planted in each, the whole arranged with regard for colour, character of foliage, growth, and degree of hardihood.

We would close this chapter with a reference to a matter which belongs proportionally as much to the next, dealing with lawns, as it does to this. This is the most mistaken but very prevalent practice of breaking up every expanse of lawn with flower beds, and so destroying the continuity of line and flowing curves, which are the chief attractions of a sweep of greensward. Nothing could be more mistaken than the prevalent idea that a clear expanse of shaven lawn must necessarily have a bare effect, and that it is essential, in every case, to enliven it with flower beds. Elsewhere we have endeavoured to show that lawns should be treated as features desirable for their own sakes and not merely as backgrounds for something else, though, of course, this must be taken with limitations as they may be either, according to circumstances. A very pronounced instance of the mistaken attempt to beautify a lawn by the insertion of beds for flowers and shrubs is given in illustration No. 148. If this is compared with illustration No. 128, which shows another front of the same residence, it will be seen at once how dependent the severe simplicity of the architecture of the mansion is upon a restful treatment of its surroundings, and how much of the dignified appearance which such buildings should have is destroyed by substituting the broken lines of a mass of shrubs and flowers for the levelled area of the turf. Reference to the latter illustration will also show that this does not mean that the immediate surroundings of the mansion must be without that charm which only flower beds can give, but that what is essential is that the dependence of the architecture on a suggestion of continuity of base line must always be kept in view in their arrangement. It is further evident too that in such positions, they must be more or less conventionalized if they are to harmonise with the architecture, wild free growths being kept at a greater distance from the mansion.

TO VIND
AUSPITIAO

FIG. 149.—LAWNS AT ASHRIDGE PARK, BERKHAMSTEAD.

CHAPTER. IX.

How slow we are to learn the lessons of breadth and repose which Nature is so ready to teach us! Swayed this way and that by the breath of fashion we first embellish every square foot within and about our homes, then change and go to the other extreme, and insipid flatness results. Nature's book, free to all who will cast away the shibboleths of convention and read with an open mind, tells us that striking and vivid contrasts should be used but seldom, and where employed, should be just sufficiently marked to emphasize the quiet orderly restfulness of the scenes they enhance. The contrasts presented by the lordly and rugged oak rising from the smooth meadow with its gently swelling contours, the towering poplar breaking across the level lines of the blue horizon, and the graceful tender foliage and white trunk of the silver birch springing from the face of the rugged precipice, prove the universality of Nature's methods whether in rural pasture, fenlands or rugged mountain scenery. She has, in the foliage of woods and forests, vast stretches of beauty, restful in its *tout ensemble*, yet full of the most charming detail, or broken masses arranged on rolling grassland in effective groupings, the verdant grass forming a restful plane on to which are projected the shadows of the trees in all their varying qualities. Thus, by open stretches of grass, a restful effect is obtained, relieving the eye of too much detail, emphasizing the beauty of form and colour in trees, shrubs and flowers, and forming green glades to carry the eye forward into mellow distances.

In no part of garden design and construction can we learn more from Nature and her methods in the arrangement of pastoral scenery than in the making of lawns and green glades. Every bit of rolling pasture is potentially a lawn, and the most distinctive feature of our English scenery.

Travellers tell us with what pride those in other lands, even in classic Italy, point to their English gardens, which, however, can only copy their pattern to a limited extent, for the chief feature, the green lawn, can only be maintained at great expense and as an exotic, or is altogether lacking. Undoubtedly the fresh greensward which our humid climate makes possible and natural to our gardens, is their greatest and most distinctive asset, and, did we but realize this, we should cease to regard grass merely as a background or foundation for other things and treat it as a feature in itself. We should cease to break up every stretch of green by dotting it all over with small exotics and instead, frame it with masses or groups of foliage placed on the higher ground and leaving the valleys free to form vistas and glades. Just as strains of music, heard across a stretch of open water, are blended and harmonized, so is detail when viewed across an open stretch of greensward, and individual trees blend into a harmonious whole.

Green lawns distinctive features of English gardens.

LAWNS, GLADES AND GARDEN WALKS.

In no case is the value of plain green turf so evident as in connection with large public or historic buildings. The plain, green, open expanse of the cathedral close, which is so essentially an English feature, teaches us many lessons, especially if we compare it with those instances where, under the mistaken idea of additional adornment, it has been broken up and dotted over with shrubs. The effect of this treatment is in every case disastrous, for, whereas formerly we had the level expanse of green complementary to and emphasizing the vertical lines so characteristic of Gothic architecture, now we have an area confessedly designed to attract admiration for its own sake and consequently in feeble competition with the architecture.

*Formal and
informal
lawns.*

We have, in most gardens of moderate extent, two distinct classes of lawn, the formal and the informal. The first of these includes those recreation grounds so essential to a modern garden, the tennis, and croquet lawns, bowling greens and possibly a formally

FIG. 150.—THE BOWLING GREEN, LEVENS HALL.

treated archery or open-air Badminton court, and those level lawns or formal banks which, together with other details, such as steps, walls, or clipped hedges, form the architectural setting of the house. The second is comprised of the outer fringe of grass running off on all sides into undulating lawns, broad grass glades or vistas which unite the more formal gardens, by easy gradation, with the landscape beyond.

As will be evident from what has already been said in dealing with terrace formation in the formal or architectural garden, the shapes of the lawns and the proportion they shall bear to the whole area of each plateau are all predetermined with almost mathematical exactness, the strips and squares of grass in due proportion to the spaces and terraces of which they form a part, and the tennis and other lawns for games in strict conformity with regulation dimensions.

LAWNS, GLADES AND GARDEN WALKS.

The making of formal lawns has been already more than incidentally mentioned in speaking of terraces and terrace gardens, and the remarks then made with regard to obtaining the correct levels for terrace gardens apply equally to the levelling of other areas for games. Lawns for single tennis courts should, where possible, have a seven-foot walk all round, thus adding fourteen feet to both the length and breadth of the playing green, the area of which should be at least one hundred feet by fifty. For use in the afternoon the lawn should preferably be so placed that the net runs from North-east to South-west, while for play earlier in the day it should stretch from North-west to South-east, thus ensuring that neither players shall have the sun directly in their eyes. A most useful size is one hundred and twenty feet square, which allows of two courts side by side with the nets placed either way according to the times of the day at which they are to be used.

*Tennis
lawns.*

For croquet the tournament size is one hundred and five by eighty-four feet, but an excellent game can be played on lawns much smaller than this. It is, in fact, to its adaptability to lawns of various sizes that croquet owes much of its favour.

*Croquet
lawns.*

FIG. 151.

Another lawn for a game which may most fittingly form a part of the formal garden, and which is increasing in popularity, is the bowling alley. The old examples, which appeal so powerfully to the sentiment of all lovers of ancient gardens (Ill. No. 150), were generally long and narrow and protected on either side by a stout hedge or wall, while, in other instances, the lawns are circular, or oblong with semicircular ends, with niched seats and sometimes adorned by lead figures, the main features of which class have been reproduced in the bowling green at Foot's Cray Place, shown in

*Bowling
greens.*

illustrations Nos. 152 and 153. The popular form to-day is a square of about forty yards long and broad, sunk some two and a half feet below the surrounding ground, the playing green having a rise of about six inches from the sides to the centre. The raised platform which thus surrounds the lawn forms a splendid vantage ground from which to watch the game.

This platform should be screened by a hedge or plantation, and if in the hedge, recesses are cut for seats, and an arch of greenery is formed over the entrance gates, the effect will be considerably heightened. Old walled-in gardens which are no longer required for vegetable or fruit growing, make the most charming bowling greens, having a quaint old-world air otherwise unattainable, especially if, as in one instance in the writer's experience, there is an old, solidly built, flag-roofed, and moss-grown fruit room, which with very little internal alteration provides a cool and shady tea-house.

The formation of lawns for games of any kind where the turf must necessarily be subjected to much trampling on, demands very careful consideration of the question of drainage. It is impossible to lay down any rules as to the amount or distance apart of the rows of pipes, for, while some soils are so light as to require practically no artificial draining, others low-lying and waterlogged would be most difficult to drain by any means.

*Drainage
of grass
banks.*

There is, however, one part of nearly every lawn which will need extra care to keep it from becoming waterlogged, and that is where it has been excavated out of the hillside, and consequently a bank or retaining wall has to be made, connecting the old level with the new. The old level being the higher, water will always tend to drain away from it to the lower, and so the part of the lawn at the foot of the bank or wall will, unless

FIG. 152.—THE BOWLING GREEN, FOOTS CRAY PLACE.

FIG. 153.—THE BOWLING GREEN, FOOTS CRAY PLACE.

measures are taken to prevent it, become and remain waterlogged. To prevent this a trench must be dug along the foot of the bank, as shown in the accompanying section (Ill. No. 151), and a pipe drain laid in the bottom. Over the pipe dry loose stones, between which the water can easily percolate, are piled to within a foot of the surface and the soil and turf laid on these.

Where the subsoil is formed of some material such as dry flints or gravel, which allows all moisture to drain away so fast that the grass burns in hot weather and all composts or fertilizers are washed away by heavy rain, an opposite case is presented. Here the best way is to sink the lawn as suggested above for bowling greens and to treat the soil with heavy manures and a certain proportion of clay.

Suggestions for the arrangement and design of one or more games-lawns may be culled from almost all the plans of gardens illustrated in this work, while in illustration No. 409 is shown a combination which is rather unusual though most convenient. It includes a tennis lawn, a hundred and twenty feet square, a bowling alley and a cedar avenue on rising ground with a handsome resthouse at the top of the glade. This glade is long enough and wide enough to be used as an archery ground, and, at the end, but centering with the bowling alley, is a croquet lawn with a loggia and raised terrace. As before stated, the advantage of a tennis lawn of the above size is that it allows of two courts, which can be placed either way, according to the time of day at which they are to be used.

Turning now to the consideration of informal lawns, we find that, while they are not susceptible to definite rules for general application, there are certain main principles which must be observed in their formation and some pitfalls to be avoided which have led to much failure in the past.

Informal lawns.

The most common error is to falsify the natural contours by the creation of artificial undulations, a process which has already been condemned. Instead of this, the natural contours of the land must be incorporated into the scheme and emphasized, and in those districts where the whole of the surroundings of the mansion are at one dead level, the attempt to reform the surface into flowing lines must inevitably result in such a contrast with the remainder of the prospect outside the domain, as at once to suggest its artificiality to the least observant beholder, in which case it had far better be confessedly artificial and arranged as a formal garden throughout.

FIG. 154.

In practice, however, there are occasionally cases where gradients become necessary which are not part of the natural undulations of the site. For instance, to obtain an easy walk, it may be advisable to excavate below or fill above the surrounding natural levels. In all such cases it is well to remember that a garden in any style is simply landscape adapted, and that it is the gentle undulating lines of nature

which are to be followed, not the rough broken ground of the upland pasture, nor, on the other hand, the series of miniature railway embankments so often crowded into a garden scheme.

In those exceptional cases where interference with the natural levels of an informal lawn is justified, what are therefore needed are soft flowing lines which shall help the original contours instead of destroying them and which shall give a restful and refined appearance to the gardens. This cannot be attained by the promiscuously arranged bumpy hillocks which so many garden makers effect, but rather by the removal of those subsidiary undulations which are inimical to long sweet stretches of green lawn. The accompanying section (Ill. No. 154) through a shallow valley along which it is proposed

Interference with natural levels on informal lawns.

LAWNS, GLADES AND GARDEN WALKS.

to form a vista will explain this. The numerous small hummocks with which the rising ground on either side is studded are removed and the surface left more or less to the contours shown by the dotted line.

Where the mansion has been designed in keeping with its surroundings and rightly placed on the site, much interference with existing levels in the more naturally treated portions of the grounds will very rarely be called for. There are, however, cases where it is advisable to erect a screen between the gardens and outlying properties of an unæsthetic character, or for the purpose of giving privacy from public thoroughfares. In such instances the raising of a mound and a little judicious planting will soon secure the best of all protections; but here again breadth of treatment is desirable, for if the mound merely forms a ridge along the boundary its use is so apparent as to call attention to what is on the other side instead of hiding it.

FIG. 155.—THE GLADE, LEWISTON MANOR.
(See also Ill. Nos. 1 and 157).

FIG. 156.—GLADE CUT THROUGH COPPICE WOOD,
FOOTS CRAY PLACE.

Woodland glades. . . There is one form of lawn directly suggested by those clearings and roadways which abound in English woodlands and which ever attract and please the artistic mind and for which there is increasing opportunity. This is the woodland glade or green drive, which is often, as in the accompanying photographs and plan (Ill. Nos. 1, 155 and 157), cut through coppice wood. Much of this class of land was originally planted because it was too rough and hilly for arable purposes and not rich enough for permanent pasture. Such land has usually great attractions for lovers of rural country who are seeking a site for a new residence. Incidentally this is fortunate, for it leaves the broad pastures and meadows for the farmer.

In treating such a site, it is well to remember at the outset that the wildness which first attracted attention to its desirability will not finally satisfy, at least for those

portions of the grounds nearest the house, and that the designer's task will include the introduction of order and primness consistently with the existing wildness which is to be retained. There is also the further consideration, that the coppice, which looks so well when maturing for its periodical cutting, leaves a bare scraggy patch when cut down, so that permanent standard trees of oak or other varieties of English timber should be encouraged to ensure a permanent woodland; and glades should be planned to bear a proper relation to those trees, so that the effect of avenues may be obtained. Where possible, any opening made in the woodland, whether arranged as a formal or informal glade, should be considered first in relation to points of view from the residence or important parts of the immediate surroundings, and also in relation to views outside the estate boundary.

Two practical considerations must affect the manner of forming woodland glades. These are the shade and drip from trees, which tend to keep the ground sloppy and to encourage the growth of moss instead of grass. To remedy this, land drains should be laid on either side of the glade at a greater depth than usual, say about four feet, in order to lessen the risk of the tree roots entering them, and in addition to this, the grass should be raised in the centre or, on a hillside, sloped slightly from one side of the glade to the other, to throw heavy rains in the direction of the drains.

Soil in coppice woods, though excellent for the growth of shrubs and trees, is seldom rich enough for grass, so that if manure cannot be obtained, a liberal supply of leaf mould gathered from the surrounding woodland should be added as a top dressing or forked into the top spit of soil. If the soil is very light, give a thorough rolling and sow with clover; if heavy, allow it to consolidate naturally and sow with the grass seed given below.

Other things may take the place of grass in a glade. Ivy is often used, or the St. John's Wort (*Hypericum calycinum*), which is so extensively used at Normanhurst near Hastings, and does not look in the slightest degree exotic as one would suppose among English timber trees. Where a still freer treatment is required, there can be nothing more suitable than bracken, especially where one looks towards the sun down the glade, when the play of light and shade is very beautiful. The russet brown carpet in Winter is also another attraction in favour of brake, especially if there are holly undergrowths at either side of the

*Substitutes
for grass
under trees.*

FIG. 157.

LAWNS, GLADES AND GARDEN WALKS.

glade to give a good colour contrast of dark green and russet, just at the time of year when it is most valuable. Any of these subjects will also make a good material with which to mark the sides of the glade where box is not used. They would be kept to a straight line at either side of the grass and allowed to sow themselves back into the woods as far as they will. All three stand drip very well in any part of the country. Where the glade is of a more formal character, as in illustration No. 155, a stone edging, such as that shown, may be more suitable, or, if the extra trimming of edges involved is not objected to, a freer effect may be obtained by arranging the stones as shown in the sketch (Ill. No. 158).

In the consideration of these three features, formal and informal lawns and grass glades, we have mentioned constructional points which specially relate to each, and before turning to the subject of garden walks, must supplement these remarks with a few practical considerations which apply to all.

Drainage of lawns.

Briefly, the two things of paramount importance in the formation of a stretch of greensward of any kind are adequate drainage and a good soil. With regard to the first of these, if the ground retains too much moisture, the grass turns yellow and is also apt to burn sooner than on well-drained ground, for the roots will be nearer the surface, and, in bad cases, grass will refuse to grow at all and moss will appear instead. Much money and time are often wasted on lawns which are too wet, in sowing and fertilizing with bone dust and other manures, when all that is required is a proper system of drains. The ordinary land drains are best for the purpose. These are earthenware pipes of three

FIG. 158.

inches or upwards in diameter and made in short lengths without socketted joints. They are laid end to end in the trench dug for them and a layer of stone, brick-bats or other dry material laid over them, before putting back the material excavated. The water runs into the spaces between the stones and so into the pipes between the open joints. Occasionally one finds that, in certain soils, they soon become choked with loose matter carried into

the pipes by the water. In this case, heather, furze or some other filtrant should be put into the trench round the pipes; but this should not be done without first consulting the farmer who has tilled the surrounding land, and who will know the method which best suits the local conditions. All land drains will, of course, unless a good fall is obtainable, silt up in the course of years and must be opened up, emptied and relaid, and this is one reason why one finds so many old lawns which are in a poor sodden state, bald in patches and slippery to the feet. The tendency to silt up can of course be very much lessened where it is possible to give the pipes a good fall or slope so that the water will run rapidly in them and scour them out.

Where the whole surface of a large lawn, say a double tennis lawn, is to be drained, "herring-boning," as it is called, is usually the best way. This consists of laying a main drain pipe along the longest diameter of the lawn and arranging tributary drains on either side every ten to fifty feet according to circumstances, in the same way that the spines radiate from the backbone of a fish. The main drain may be six inches in diameter, with side drains of four inches, or four inches with the tributaries three inches according to the wetness of the ground and the local rainfall. Where the outfall drain crosses a drive for heavy traffic, stoneware pipes should be used, as these are stronger and less liable to be crushed by heavy weights going over. Sometimes drains are formed by cutting a trench and merely partially filling it with dry rubbish, such as dry flints, through which the water can percolate, then filling up with earth. In other cases a V shaped trench is cut and the bottom part, about six inches deep, is bridged

LAWNS, GLADES AND GARDEN WALKS.

over with roofing slates or tiles. The latter is only useful in stiff clays and neither are as good as pipes.

After good drainage comes a good soil. It is often considered wrong to have a good depth of loam on which to lay the turf or sow the seed, the impression being that it encourages rank grass. I have seen even a large tennis lawn finished with less than three inches of soil, with the result that in two years it was covered with moss. A lawn, like a meadow, requires to be in good heart, and must have a sufficient depth of soil. To prevent worms, however a layer of sharp clean ashes or coke breeze may be laid under the turf, or, where the lawn is to be sown down, under the top spit of soil.

Soil for lawns.

Whenever good turf can be obtained, this should be preferred to sowing seed as the tender grass takes a long time and much mowing and rolling before it forms a really good lawn, whereas lawns laid with turf and well looked after would be available for games etc., in a year's time or even less. The sods, carefully selected from a good meadow, are lifted with a turf spade in pieces about two feet six inches long and one foot broad, care being taken to cut it thick enough to carry away all the roots and plenty of loam. To prevent damage in handling and to keep it moist, each piece is tightly rolled up for transit and relaid as speedily as possible, when it must be made solid by being well beaten with a turf beater, and occasionally watered if the weather is dry, until it has become somewhat established in its new environment.

Turf for lawns.

Where turf is not available in sufficient quantities to cover the whole area of the new lawns, it should, if possible, be used for the edges of all walks and for grass banks, and the rest should be sown. Although the latter method takes a considerable period to form a good lawn, it will, in time, be quite equal to one which has been turfed, and even six weeks after it is sown, the tender grass, if sown in the spring, will be green and fresh and pleasant to look upon.

The following prescription for grass seed is the one which I have found the most generally useful, in the proportions given.

Grass seed.

Cynosurus cristatus	..	..	..	..	..	..	..	..	..	6 lbs.
Festuca duriuscula	..	..	..	..	..	..	..	..	..	4½lbs.
Festuca ovina tenuifolia	..	..	..	..	..	..	..	..	..	3 lbs.
Festuca rubra	..	..	..	..	..	..	..	..	..	2 lbs.
Poa nemoralis	..	..	..	..	..	..	..	..	..	3 lbs.
Poa nemoralis sempervirens	..	..	..	..	..	..	..	..	..	4½lbs.
Poa trivialis	..	..	..	..	..	..	..	..	..	3 lbs.
Trifolium repens	..	..	..	..	..	..	..	..	..	7 lbs.
Trifolium minus	..	..	..	..	..	..	..	..	..	3 lbs.
Dwarf perennial rye grass	..	..	..	..	..	..	..	..	..	20 lbs.

56 lbs.

April is perhaps the best month for sowing, though in the Southern Counties it may be done as late as September. The best way of proceeding is to prepare the ground early in Spring, removing all old roots, etc., and forming the surface. This will not only allow time for settlement before sowing, but those troublesome hillocks and hollows which appear after frost can also be dealt with. Every piece of newly turned ground is full of weeds in a few weeks in Spring time, and the work should be done early enough to allow of two crops of weeds being destroyed before sowing and, of course, before they seed. This will give the grass seed a far better chance.

Sowing lawns.

Before sowing, roll the ground, then lightly scratch the surface with a rake, and after sowing roll firm and protect with a net or threads of black cotton, and again eradicate all weeds as soon as they appear. When the seedlings are some two inches high, roll again, and by no means allow the first cutting to be done with a machine, but with a sharp scythe. Not only does the machine exert an upward pull and so tear and

LAWNS, GLADES AND GARDEN WALKS.

disturb the roots of the infant grasses, but it is difficult to adjust it so as not to cut too closely. Even with a scythe care must be taken, for the writer has many times seen a newly formed lawn studded all over with crescent-shaped patches of yellow grass where it has been cut too near the roots.

Walks.

The comfort and success of a garden depend greatly upon the arrangement and quality of its walks. Flowers are delightful, trees and shrubs are interesting, but if, in order to reach them, it is necessary to traverse a walk unnecessarily circuitous or one badly constructed or with steep and uneven gradients, the pleasure in the flowers and trees is largely discounted. Walks, too, may do much to make or mar the composition of the various garden scenes, and may either be so placed as to help the perspective and scale, or may cut across the view with a hard line out of harmony with everything.

In certain gardens which the Author has been called upon to re-model, the walks have presented one of two ideas. Apparently they were either survivals of an old-fashioned maze, or were made with the intention of tiring people in the shortest possible space of time, ideas quite foreign to the true intent and purpose of a garden, the prevailing spirit of which should express restfulness and ease.

The main principles which should guide in the formation of the walks of a garden are illustrated in all the plans in this work. The first of these is that a garden should not consist of a multiplicity of walks, but that each path should, by its planning and design, clearly express the purpose it is to serve. A certain number of walks and a proportionate amount of gravelled space are necessary to the design, but generally, lawns, flowers, trees and shrubs make the garden, and walks contribute to its enjoyment by affording dry paths on which to stroll at all times and to reach the various parts of the grounds without inconvenience.

Walks and paths being an absolute necessity for the proper working of the garden, and for recreative purposes, they should offer every inducement to frequent use by having well conceived and harmonious lines, easy gradients and perfect metalling or paving, supplemented by seats and shelters conveniently placed. They look best when their purpose of convenience or ornament is clearly expressed in their design, and should be arranged in such a way that the beauties of the place are exhibited, not by a series of wriggles, each of which is supposed to bring the spectator into direct line with some startling device or example of misdirected labour, but in a simple, straightforward manner to show the extent of the gardens, and picturesque views of the house and domain, the wealth of flowers, and any other feature of special interest. In the freer or landscape portion of the garden, the practice of indiscriminately cutting up lawns merely for the sake of making paths cannot be too strongly condemned, but in the formal portion nearer to the residence, division of the gardens by walks is often the most expressive way of securing character in the design.

Breadths of walks.

Walks which form part of the terrace scheme have already been mentioned in dealing with terraces and terrace gardens, and many of the remarks then made apply equally well to all those in the formal garden. Generally speaking the walks in the more formal portions of the grounds should err rather on the side of being slightly too broad than too narrow. If not given sufficient breadth they will generally look very mean and poor. The most suitable widths vary from six to twelve or fourteen feet broad, the latter being for the main terrace promenade walks. In most gardens, the best uniform width for the whole system of walks, apart from the main terrace scheme, will be seven or eight feet. In the panel garden on the other hand, it is better to err on the side of narrowness, unless the beds are very large, and usually from two to three feet wide, according to the requirements of the design, will be plenty if the walk surrounding the whole is of sufficient width.

Paving has also been incidentally mentioned in connection with the terrace scheme and

LAWNS, GLADES AND GARDEN WALKS.

is equally adapted to the formal garden, as will be seen on reference to illustrations Nos. 159 to 163, which show combinations of brick, stone and cobbles. In their formation, special attention should be given to the foundations, which should be prepared by first removing all the soil and laying down a foundation of broken brick, stone, or other hard material, to a depth of about six inches, on which a stone pattern may be laid

Paved walks.

FIG. 159.

and bedded in sand, or cobble paving may be laid in sand and afterwards grouted in cement, which is done by running liquid cement in between the stones with the aid of a hard broom and so consolidating the whole. If a layer or screed of cement is spread over the foundation material and the paving bedded into this, a very strong substantial footway will result which will not grow weeds nearly so readily as other kinds.

FIG. 160.

When the residence and other architectural erections are in brick, an excellent and inexpensive path is formed by paving with the same material, as shown in the accompanying plan of the paved garden at The Grange, Wraysbury, already referred to (Ill. No. 163). Visitors to Holland are impressed by the neatness and quaintness of the side walks paved with small klömpje bricks, while in the case just referred to, ordinary sand

FIG. 161.

bricks were used, but, whatever bricks are employed, it is necessary to use weed killers with caution in their vicinity for the copper sulphate which is the basis of most of them causes the bricks to scale. It is claimed that gas lime is a safer substitute and quite as effective as a weed killer.

FIG. 162.

Stone paths neatly laid with flags of good quality are very pleasing in appearance. Where material of two or three colours is available, from which to form it, a design in simple squares and lines, as shown in illustration No. 162, may be very effective, and there is endless scope for originality in their treatment. The writer has found, after a

LAWNS, GLADES AND GARDEN WALKS.

test extending over several years, that yellow York flags, procured from Idle or Morley, prove the most serviceable in wear, and, in colour, harmonize well with the green which preponderates in a garden.

Once or twice I have been asked to form a path across a lawn which shall appear as little noticeable as possible. In such cases I have recommended a narrow line of pea-green flags cut from Westmorland slates which, both in colour and the nature of the surface obtained by splitting them at the quarry, are admirable for the purpose.

Although there are a few exceptional cases, such as the rock garden, where crazy paving may be used effectively, there can be no doubt that in most instances, this form of garden pavement results in one of the worst forms of affectation, like rustic garden houses, seats and bridges. Except therefore where special circumstances make the use of such paving advisable, it is to be avoided.

Cement or asphalt walks are also, as a rule, undesirable. There are, however, one or two kinds of concrete less objectionable than the ordinary forms, which make

FIG. 163.—PAVING AT THE GRANGE, WRAYSBURY. (See also *Ill. No. 129.*)

pleasant paths. The best is the concrete coloured by oxides, largely used in Scotland for steps and the paving of yards, while another, deserving favourable mention, resembles broken mosaic floors and is a combination of concrete and broken gravel.

*Gravelled
paths.*

As will be seen from the accompanying section (*Ill. No. 164*) gravelled paths are formed much in the same way as drives, the formation of which is dealt with in Chapter VI., the usual difference being that the former are not made with sufficient care. This is a great mistake, as very little extra expense in formation will make the walk more serviceable ever afterwards. On the section the ground has been excavated a little deeper at the sides to take a land drain, above which comes first the pitching, then material broken to about the size of a hen's egg, and on the top of this a layer of pinnell or gravel to form the surface, the best from the point of view of colour being the gravel obtained from Farnham, Carnforth or the Wrekin. The red granite gravel so much used in the Highlands of Scotland also makes fine walks, and very beautiful gravel may sometimes be obtained from the neighbourhood of lead and copper mines. Where

LAWNS, GLADES AND GARDEN WALKS.

none of these materials are available, the walks may be laid with hard pinnell or samel and receive a coat of fine pit or river gravel, which should be rolled in.

It is sometimes found desirable in garden schemes, both formal and informal, to make walks which cannot be connected at their termini with other walks or doorways, and some feature, such as an arbour or seat, must, therefore, be supplied to atone in some measure for what appears to be faulty planning. Such opportunities allow the designer almost unlimited scope for originality of treatment, which, if successful, often appears to be particularly appropriate.

This suggestion should not be read as commending the formation of *culs-de-sac*, for to be compelled to return by the same route is undesirable, so that walks of this description should only be made when there are strong reasons for so doing, as when leading to a particularly pleasing view, a rocky eminence for instance, ascended by solid hewn steps, or a rounded knoll surmounted by a patriarchal tree, or so forth. Where a walk turns abruptly at right angles for any reason, similar conditions prevail and call for the same kind of treatment as that employed where it stops short.

Another difficulty occurs where a wild garden or wilderness adjoins and is connected with a formal scheme, the treatment at the point of connection between the two usually being anything but happy. To conceal the point of transition is usually hopeless, and it is far better to mark it definitely either with a fence and simple gate or a pergola, summer-house or arbour, placed across the path as in illustration No. 322, or a little gatehouse such as that shown in No. 71, would, in some instances, be most effective, apart from its present use.

Culs-de-sac.

FIG. 164

Connection of formal and informal portion of grounds.

FIG. 165.

FIG. 166.

In the informal garden it cannot be said that walks are at all necessary as ornament, for continuous stretches of greensward generally look better, but, as dry walks are necessary, the art of the practitioner should be directed to making them as pleasing as possible. One of the first essentials is to make them express by their route and curves the contours of the land, as already suggested for informal carriage drives, and they should always have some definite and adequate objective, such as an important point in the garden, a short cut to church or village, or happy connection with other walks, or the terrace scheme. Where they are raised above or sunk below the natural level, or cut out of

the side of a hill, they should also be treated as recommended for drives in such positions with a flat verge about three feet broad on either side and then banks arranged in flowing lines to meet the natural contours, as shown in the accompanying sections (Ill. Nos. 165 and 166).

FIG. 167.

Repton, who must have had a keen appreciation for beauty of line, laid down certain rules for walks passing through a garden designed in the landscape style. The first and most important was that, when two walks diverged, they should not appear as though intended to

FIG. 168.

Repton on garden walks.

join again, as in illustration No. 167, but rather as though they led to points far apart, as in illustration No. 168. Another rule was that curves should not be too small or unnecessarily repeated. They should instead be blended into long sweeping lines. A third rule, not specially referred to in his writings but followed in his practice, is that

LAWNS, GLADES AND GARDEN WALKS.

where anything approaching a network of walks is necessary, they should not all be seen at once. These three rules, if properly observed, would do much to remove many of the objections raised against the informal method of laying out grounds.

It is sometimes necessary to connect walks which are part of the pleasure grounds or walks leading from the conservatory, garden entrance, or other particular portion of the house, with the carriage drive. The best way in such cases is, wherever possible, to effect a junction with the carriage sweep, but if it becomes necessary to connect such paths with the drive, the same conditions should be observed as before described in making a back drive, or the junction should be at right angles, which would be still better.

Verges.

For verges to garden walks other than terrace paths, grass would, by general consent, be allowed to be the most suitable, but grass so charming when in good keeping, is all the more disappointing when untidy or sparse. This is most noticeable in the many instances where a narrow grass verge borders a drive overhung by trees, when no amount of care will prevent it from being ruined by the drip from the branches, and where it would be far better

FIG. 169.—WOODLAND WALKS AT MOUNT STEWART.

to give up the attempt to grow grass and replace with some shade-loving plant which will succeed under trees, such as ivy trimmed level and to a line, cotoneaster macrophylla similarly treated, gaultherias, hypericum calycinum, or dwarf sweet briar hedges or box, say, one and a half feet broad and two feet high. Failing these, a border of rough stones, as in illustration No. 169, cobble paving or narrow free-stone flag or other local paving material might be laid. The edgings to be avoided are those consisting of blue bricks, white spar, fancy blue or coloured edging tiles, shiny terra-cotta, glazed bricks, cement or granolithic, and also any material laid in a series of scallops or jagged points.

FIG. 170.—SUMMERHOUSE AT MONTACUTE.

CHAPTER X.

The four features which it is proposed to consider in this Chapter, Verandahs, Summer-houses, Pergolas, and Bridges, which, as architectural adornments fulfilling a practical as well as an æsthetic function, are closely related both in planning and effect, may be considered as details in garden equipment.

In the past, unfortunately, this very fact has been made sufficient excuse for treating them as extra embellishments apart from the general scheme, and arbours and pergolas have been dotted about without reference to their surroundings in a manner which has, in many instances, brought the architectural efforts of the garden designer into disrepute. They are details certainly, but in garden architecture, as in every art or science, it is the details which make or mar the final result, and no feature of garden equipment can be considered as a thing apart, but all must be made to harmonize, each item fitting naturally and inevitably into its proper place and in keeping with its surroundings.

If they are ungainly or disproportionate, their ornamentation coarse, their construction meretricious or their placing crude, persons of education and taste will be unfavourably disposed towards the whole scheme of design. If such things as ricketty wood or spidery cast-iron verandahs, or would-be rustic summer-houses, with shiny varnish and cheap stained glass, are placed in front of otherwise dignified residences, breaking up the alignment and destroying all breadth of treatment; or rustic bridges, heavy in design and insecure looking, are made to span a somewhat imaginary stream, the whole effect must be trivial.

The steadily increasing love of fresh air and an out-of-door life which has been so pronounced in recent years in this country, makes a deeply recessed verandah or colonnade on the South front of the house almost a necessity. Most domestic architects, when designing a house to-day, would incorporate this feature into their plans and make it an integral and harmonious part of their design, and in country houses, and especially those which are to be used as summer residences only, there is even a tendency to transform the verandah into a large square open-air dining room, occupying the whole of the ground floor area of a gable, the upper rooms being entirely supported on pillars on three sides. Such an arrangement would need very careful backing up by the garden architect if it is to be a success, not only on account of the exceptional architectural treatment involved, but also to give it shelter and privacy.

In the ordinary verandah placed in front of and approached from the entertaining rooms, the main practical question to be faced is that of providing sufficient light to the

Verandahs.

FIG. 171.—VERANDAH AT "THE HILL," HAMPSTEAD.

FIG. 172.—VERANDAH AT "THE HILL," HAMPSTEAD.

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

windows at its back. This is especially so in those cases where an old house has been acquired and beautiful grounds laid out, and it is desired to erect a verandah of adequate width from which to view the gardens from under cover in all weathers, and which will not obstruct the light. An attempt to do this which has proved eminently successful is shown in illustrations Nos. 171 and 172, where an existing terrace seventeen feet in width has been covered in with a glass roof which, while it passes adequate light, does not show from the garden below, and which is not too insistant or obtrusive from the verandah itself. The principle which has dominated the design in this case might be adapted to harmonize with any small country or suburban house where such a feature is to be added, so avoiding the usually distressing result in such cases.

*Verandahs
to neo-
classic
houses.*

FIG. 173.

be admitted into the hall at its opposite end, and can only be contrived when the whole house is being planned. In such cases it is not possible to add a verandah after the house is built, but loggias may be substituted.

These features are generally placed at either end of a garden court or architecturally treated terrace, as shown in the sketch (Ill. No. 174), and if properly contrived and designed in harmony with the classic details of the residence, may add greatly to its effect by broadening the façade and strengthening its base. Such structures will usually be placed as terminal features on a terrace,

clear of the main front of the house, for they cannot be placed in front of houses of classic design without destroying the element of breadth so necessary to a dignified

Where the house is built in the classic style with a pillared façade, the verandah is placed behind it, the hall being recessed for the purpose, and the entrances from the entertaining rooms being arranged as shown on the sketch (Ill. No. 173). This arrangement is, of course, only available when light can

FIG. 174.

FIG. 175.

composition. The homelier mansions however, built in local traditional styles and without marked symmetry of their parts, are often helped by one or a pair of garden houses

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

in front. If the terrace to a classic building extends far enough on either side of the main structure, the composition may be further helped by a colonnaded effect.

Two designs for garden houses terminating extended terraces are shown in illustrations Nos. 415 and 175. The first of these shows a terrace design in connection with Foots Cray Place, in Kent, and illustrates many points bearing on the arrangement of the surroundings of early renaissance buildings, while the second, which formed part of the design for laying out the grounds to Dalham Hall, near Newmarket, the seat of the late Right Hon. Cecil Rhodes, indicates methods more in keeping with the spirit of a simple Georgian residence.

*Garden
houses.*

An example of a summer-house designed to give point and architectural emphasis to the ends of a terraced lawn is shown in illustration No. 176 and was erected in

FIG. 176.—SUMMER-HOUSE AT END OF TERRACE.

FIG. 177.—SUMMER-HOUSE IN SAME STYLE AS THE MANSION.

Westmorland, the local slate-stone being the material used. In illustration No. 177 again we have a form of garden house primarily intended to bring into the scheme for the grounds some of the dominant architectural qualities of the mansion to which the terraces form the foreground. They serve also to break up a somewhat flat expanse of garden and provide the antidote to a preponderance of horizontal lines, and at the same time supply convenient rest-houses or shelters. Here, as in the previous examples, the garden-houses are placed equidistant from, and on either side of, the main axial line running through the house and grounds.

In all the cases considered so far, there has been a very marked symmetrical arrangement in the design of the house, and so this quality has necessarily been expressed in the gardens. The architectural treatment and even colour and texture of the summer-houses and loggias have also been made to correspond with that of the mansion. Symmetry of parts is however not always either possible or desirable, and, in fact, even where the design is symmetrical as a whole, it will very often be found that practical considerations interfere with its attainment in some of the details of the scheme. This will be more particularly so where one end of a terrace is finished by a summer-house and the other must necessarily be left open for access to other parts of the grounds or because any erection would interfere with the view from important windows of the house or otherwise. In such cases balance must be obtained by other means. Some-

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

times it can be achieved by elaborating the flight of steps at the open end, or the terrace may be continued at right angles along another façade and the balancing feature be placed at its far end, or a gatehouse or lych gate may be placed opposite the loggia. Where none of these expedients are possible, balance may often be obtained by the treatment of the terrace scheme itself, or the design of its walls, or it may be extended further towards the summer-house than on the other side of the main axial line.

FIG. 178.—TEMPLE OF THE SUN, KEW GARDENS.

Quite apart from the terrace scheme, however, there are many positions in which garden houses may be used. They may mark the end of a favourite walk, or the point from which a specially fine view is to be obtained and which it is desired to enjoy under all atmospheric conditions, or as a classic temple (Ill. No. 178) they may close a formal vista. Such erections must be designed in strict relation to their surroundings, and the amount of elaboration or rusticity of treatment which is necessary will usually be determined by their nearness to or remoteness from the mansion. Nevertheless, however rural their surroundings, nothing can justify that spurious rusticity which marked the designs of the Early-Victorian era, and which still predominates in the catalogues of wholesale manufacturers of cheap garden furniture. Rusticity in such features is quite allowable and even desirable among suitable surroundings, but it must permit of the structure in which it is used being designed on architectural lines and without offending the canons of art. For instance, in illustration No. 176 a rusticity has been given to the summer-house and a pleasant local character obtained by using the rough native stone quarried on the site; but this rusticity is con-

sonant with and is expressed in architectural terms. In the case of the erections shown in illustrations Nos. 179 and 180, on the other hand, the buildings were so near the house as to necessitate strict adherence to the architectural style of the main building.

Examples of garden-houses connected with outlying portions of the garden are shown in illustrations Nos. 181 and 182. The latter is a garden house erected on an elevated site in the gardens at Cringlemire, Windermere, for the late Henry Martin, Esq., and is furnished with a fireplace, thus making it available for use at all seasons. As will be seen from the illustration, a wide verandah on the East, West and South sides gives points of vantage from which to view the magnificent panorama of lake and mountain which is obtainable.

Two examples of garden houses erected primarily to mark a notable view-point, are given. The first (Ill. No. 184) shows a terraced bastion overlooking a broad

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

stretch of Dorsetshire downs and beautifully wooded heights, on which two shelters are erected. The whole is approached by a long straight woodland glade which has been cut through a large plantation of well-matured oak trees. The shelters are placed on either side of a central flight of steps, there being three distinct landscape views. The first and most important is the one seen along the main axial line, the others from each of the shelters. Such an arrangement of the two shelters has the additional advantage that one is always in sunlight while the other is in shade.

In the second case, illustrated in the end papers to this book, a very different set of circumstances has to be dealt with, as the prospect is viewed across the gardens and home park and stretches from North-east to South-west. Here the design of the structure was suggested by the elevated nature of the site, together with the fact that it would always be visible from the main entrance door to the house, with which it is placed symmetrically, and the local building material which is a coarse-grained granite quarried on the adjoining Dartmoor.

FIG. 179.

SUMMER-HOUSES IN SAME STYLE AS MANSION.

FIG. 180.

The garden house at Foots Cray Place (Ill. No. 152) with its semicircular pergola in front, is another example of view-point treatment; but in this case it was necessary to carry up the garden house to a second storey to obtain full advantage from the prospect.

A primitive summer-house or arbour is often required for a position in the wild garden, along a woodland walk or in specially interesting spots to which short excursions are made, and being away from the dominating architectural features of the residence, may be constructed of any material ready to hand. In a stone district, rough, rubble-built dry walls might be used and the roof covered with thatch of straw, gorse, or bracken, or it may be shingled or slated. Where the cost of stone or brick is prohibitive, wood might be substituted throughout, and the roof alone slated, provided always that the woodwork is sufficiently strong. Such erections, if built in the simplest and most direct manner and no attempt is made to improve them by applied ornament of any kind, whether of twisted oak or virgin bark, will generally provide a summer-house rustic

*Primitive
summer-
houses.*

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

in character, possessing all the charm which such a retreat is capable of lending to a

woodland scene, and the rusticity would be real and not of the sham description previously referred to.

Having considered the planning and outward presentment of garden houses suitable to many very varied conditions and requirements, there remains the question of their interior fittings. These will, of course, depend on circumstances. For instance, in the case of the one overlooking the extended view of Dartmoor in Devonshire, referred to above, it was intended that it should accommodate a small library of garden and nature books, and this suggested a room of fairly ample size with an open fireplace and electric light. Sometimes, too, a large summer-house makes a splendid play-room for the smaller children of the house, especially for noisy games which might cause inconvenience in the mansion, and in any case it will provide a conveniently accessible retreat in case of sudden showers when the children are playing out of doors. As they grow older, it may be fitted with quaint furniture and simple utensils for the first

Interior fittings of garden houses.

FIG. 181.—SUMMER-HOUSE

lessons in housewifery which will be all the better learnt under such pleasant conditions.

Enclosed formal gardens will hardly ever appear complete without a garden house arranged somewhat as suggested in illustration No. 183, while those garden houses which are reached from the tennis and other games lawns will fulfil the dual purpose of a shady retreat from which to watch the progress of a game, and also a tea room, for which latter purpose, access from the rear communicating with the kitchen of the house may be necessary. Cunningly contrived and quaint cupboards in and around a chimney nook, and large chests under

FIG. 182.—SUMMER-HOUSE AT CRINGLEMIRE, WINDERMERE, OVERLOOKING LAKE AND MOUNTAINS.

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

the window seats, should also be supplied for storing tennis nets, bowls and croquet mallets.

Whenever a stream passes through a garden or park, a bridge of some sort is sure to be required. Its character and design will be decided, not only by the size of the stream which it crosses, but also by the relative importance of the road or path it carries, the size and extent of the domain, and its position in relation to the mansion.

Many materials may be adopted, but whatever the surroundings or circumstances, it will generally be found to be much the wisest and most economical in the end to build in stone or brick, or where wood must be employed, in wrought oak strongly and well pinned together. Iron is seldom treated satisfactorily or made to

FIG. 183.—SUMMER-HOUSE WITH LOGGIA.

FIG. 184.—END OF GLADE, LEWISTON MANOR. (See also Ill. Nos. 155 and 157).

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

FIG. 185.—THE BRIDGE, CHATSWORTH, FROM THE USUAL VIEW-POINT.

FIG. 186.—OLD RAGSTONE BRIDGE AT LYNMOUTH, SHOWING INFLUENCE OF LOCAL MATERIALS ON DESIGN.

harmonize with garden scenery, and for this reason does not appeal to garden lovers. There are, however, many positions where it may be used with perfect propriety and without injury to the most beautiful natural scenes, if designed in keeping with their spirit as regards the main proportions of the structure, and it is kept perfectly plain and free from cast-iron filigree ornament. Even better results may be obtained by combining iron with stone, as when stone bastions or pilasters, crowned by sculptured figures, support a perfectly plain girder bridge, as in so many parks on the Continent. The one great advantage of iron is that it is possible by its aid to cross a wide stream or gorge at comparatively little cost, and, generally speaking, it is only under such conditions that its use can be encouraged in the garden, for it is unquestionable that stone or brick are materials which lend themselves far more sympathetically to the interpretation of its spirit.

A stone bridge need not be elaborate; indeed there are few places grand enough to stand a palladian bridge such as that at Wilton, nor will there often be opportunity for one on such a large scale as that which spans the river Derwent at Chatsworth; and even in this latter classic example, although, from the usual view point, given in illustration No. 185, the bridge and house form a logical and harmonious composition, in reality, æsthetic connection is

a little lacking and the spectator feels that, either the more formal portion of the grounds should have been brought into relation with the bridge or its treatment should have been somewhat simpler.

Whenever the bridge is visible from the mansion or forms a part of the pleasure grounds or park, its design and proportions as well as its details will need the most careful balancing against its surroundings. Especially will this be so where, as at Ballimore, in Argyleshire, illustration No. 402, it forms a part of a formal terrace scheme as well as a vantage point from which to view the naturally treated stream

*Iron
bridges.*

*Stone
bridges.*

FIG. 187.—BRIDGE IN DEVONSHIRE BUILT OF LOCAL GRANITE.

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

shown in illustration No. 261, with its unstudied sylvan treatment and falling torrent, for here it must harmonize with the terrace in its architectural details and scale, and yet, on the other hand, there must be nothing to clash with the natural scenery beyond, nor must it form a hard dividing line between the two.

As in the case of terrace walls and every other form of garden architecture, the style of the house will more or less dictate the material and style of the bridge if the two are near together, while in other cases, local conditions will have their influence. Thus, in illustration No. 187, is shown a bridge erected in a West Country garden in which the local granite was used, and in illustration No. 186 an old bridge of rag-stone, each being stamped with the local character; while, on the other hand, the design of one for the Marquis of Bute, shown in illustration No. 188, was influenced by other architectural details which were part of the same scheme.

Very often a perfectly simple bridge built of rubble walling with a neat flag coping will far better to err on the side of plainness than bridges still should be constructed of oak, but

FIG. 188.—BRIDGE AT MOUNT STEWART.

answer all purposes, and in any case it is to obtain an ostentatious result. Smaller never of the so-called rustic work, which, besides offending the canons of art in its design, invariably looks either brand-new or dilapidated. Where a wooden bridge is necessary, it should be a straight-forward honest piece of good carpentry, with as much quaint construction and strutting as this will allow of. Such a bridge will outlast a number of the so-called rustic affairs which are so often used because they are cheap. A representative design for this class of work is given in illustration No. 189, which shows a bridge designed by the Author for the late Colonel Sandys, M.P.; and a still more rustic wooden erection, suitable for the wild garden, is shown in illustration No. 261.

The effectiveness of bridges in gardens may often be enhanced by means of some form of superstructure, such as the summer-house shown in illustration No. 236 which represents the outlet to a formal canal at Kearsney Court, near Dover, or, in other instances, a pergola may not only stretch the whole length of the bridge, but extend along the path on either side, the part over the bridge being marked

FIG. 189.—WOODEN BRIDGE AT GRAYTHWAITE HALL.

*Wooden
bridges.*

*Super-
structures to
bridges.*

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

by extra height and square, arbour-like broadenings at either end. Where it is necessary to have a gate at one end of the bridge, this affords the opportunity for many delightful compositions, and if the bridge is of stone or brick, balustraded panels to match the design for the gate may be inserted in the parapet walls over the centre of the arch. In other cases, where the stream or ornamental canal or lake is large enough for a boat, delightful combinations of bridge, boathouse, and tiny wharves or landing stages may be arranged, and where a drop in the water level can be obtained at the bridge a formal cascade may be incorporated.

It occasionally happens that a bridge is wanted to connect two portions of a garden intersected by a public lane or service road, but, speaking generally, this means of communication should not be adopted unless the obstruction to be crossed is in a cutting or otherwise at a much lower level than the gardens on either side, or at least on the

*Bridges
over public
ways.*

FIG. 190.

side nearest the residence. This sinking of the path to be crossed prevents the bridge from being placed so high up as to have an unrestful appearance from the gardens, which it must have if it is ascended by a large number of steps, and where the ground on the far side is lower than on the near, a terraced effect can be obtained. It is, however, a mistake to use a bridge in such positions unless the conditions are favourable.

Pergolas, unlike bridges, are required in almost every garden. Though, as their name implies, they are an imported feature, they differ little from the ancient bower walks either in construction or spirit. The latter was usually made of hoops of iron placed some six feet apart, forming a series of arches clad with roses or climbers, while the former has a strong continuous frame-work, often with the sides filled in with laced trellis, or wattles, according to the pleasure or purpose of the maker.

Pergolas.

In a new garden, where shade is very difficult to obtain, a pergola is invaluable as it can be covered in a very short time with foliage, such as that of the clematis montana, honeysuckle, foliage vines or other climbers, and so prove very useful until the newly planted trees have had time to grow large enough to afford some shelter. Where it is not desirable to obstruct the view, a roof of greenery supported on pillars would be sufficient, but where it is desired to obtain privacy, one or both sides would be filled in by trellis. In those cases where the pergola skirts one end or side of a tennis lawn, and is to be used as a shady place from which to watch the game or in which

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

to take tea, the side remote from the lawn would be filled in for shelter from the wind and the other side left open, with or without a handrail. A pergola can be used with a particularly happy effect where it can be built over a path dividing two distinct portions of the grounds which it is desired to screen from each other. In this case it performs all the functions of both pergola and fence.

There is almost unlimited scope for originality in the planning and designs of pergolas, for not only may they be of almost any size and many shapes to suit varying circumstances, but also may be made in many materials and gradations of elaboration in the design. From the graceful and elaborate French *treillage* for the interior of the

conservatory, to the simple erection of unpeeled larch poles for pergolas in outlying portions of the grounds, is a very far cry, and there is every possible gradation between these extremes.

Illustration No. 388 shows a somewhat elaborate example with stone pillars and balustrade of renaissance design, and a superstructure of oak, the roof being arranged in domed form, at the angles where the pergola broadens out into arbours. By its means shelter is obtained on a terrace garden, which on the side on which the pergola is erected, is raised above the natural level of the ground some fifteen feet,

FIG. 191.—PERGOLA PILLARS OF ROUGH MASONRY.

and being overlooked from part of Hampstead Heath, would be exposed both to winds and observation without some such screen. Such an arrangement will often be useful on the principal terrace, next to the house, where it is not advisable to make a verandah.

Where a pergola is taken completely round the four sides of a formal garden, with some architectural feature such as a fountain or statue to mark the centre, a delightfully cloistered effect is obtained with the maximum of seclusion. This arrangement is particularly useful where the garden is situated among unlovely surroundings as, for instance, in a manufacturing district.

For other less prominently placed positions, the pillars may be built of brick or stone, as shown in illustrations Nos. 190 and 191; or the rough monolithic columns used in Italy for the grape vine pergolas may be employed, and where a lighter structure still is suitable, the whole erection, including the posts, may be in wood, as in illustration No. 192. The extent to which local materials may be utilized is shown

FIG. 192.—PERGOLA ENTIRELY OF WOOD.

FIG. 193.—COVERED WAY BETWEEN HOUSE AND PARK AT GREENWOODS, STOCK.

SUMMER-HOUSES, PERGOLAS AND BRIDGES.

in illustration No. 384, where the pillars are built up of small pieces of black Westmorland slate. Although ordinary rustic work of the shapeless description is quite out of place, good pergolas for the outlying portions of the grounds or a cottage path may be made of unpeeled larch poles, as these allow of sound construction and definitely balanced proportions. In other cases the material may be peeled but left in its natural round state, peeled poles having the advantage of not harbouring insects in the way those with the bark on generally do.

*Rustic
Pergolas.*

In erecting a rustic pergola, the most generally useful size is about eight feet wide and the same height, placing the strong upright posts about six feet apart. Bearers parallel to the path are nailed from the top of one post to that of the next, and cross bearers to span the walk are laid on them, projecting at each end for about eighteen inches beyond the line of posts. Climbers are then planted against the posts, and the intervening spaces left open until the plants have grown to a sufficient size to be trained

FIG. 194.

over the trellis which is subsequently placed between the posts. If this trellis is inserted when the pergola is first made, it will tend to create the impression of a forest of naked timber.

The great danger to guard against in the formation of such a pergola is a flimsy appearance, and one way of avoiding this, is to place the posts in pairs about a foot apart. Illustration No. 194 shows this arrangement and will provide suggestions for adaptation to many varying circumstances.

Pergolas need not always be of the usual more or less long and narrow form over a path. For instance, we may have a perfectly square one on a terrace near the house, for use for meals in hot weather, or a semi-circular one may cover a curved seat placed centrally at the end of a tennis lawn or at the end of a broad walk, or it may form a small arc of a large circle like that shown in the heading of this chapter.

*Covered
ways.*

Very much the purpose of a pergola is served by the covered way shown in illustration No. 193, which was erected by the Author to connect the house and home park in grounds laid out for Adam Ellis, Esq., at Stock, Essex. In positions where a dry path at all seasons is required to connect the house with a garden house or smoke room, or to provide a covered way from the highway to the front entrance of a suburban residence, such an arrangement would be far better than a pergola with an open roof. In other situations, instead of the series of brick arches, quaintly strutted oak posts could support a pantile roof, or in a stone district, stone piers and lintels with a green slate roof may be used, or even rough-casted arches where this material covers the walls of the house.

FIG. 195.—TRELLIS SCREEN AT "THE HILL," HAMPSTEAD.

CHAPTER XI.

In the last chapter, we dealt with the four principal architectural accessories of the garden, and in this we must continue the same subject by considering, as fully as space will allow, all those smaller and more portable features which form fitting subjects for applied art.

Generally speaking, garden furniture of every description suffers in repute from the very indiscriminate manner in which it has been used. In many, one might almost say, in a majority of gardens, such features as statuary, vases and seats are dotted about with very little regard to their surroundings, and so look absurdly out of place. In fact, to such an extent was this done in the case of statuary in the gardens laid out during the first half of the last century, that the very term "garden statuary" calls up to the mind of most people a vision of hideous plaster figures completely spoiling the whole effect of natural glades or sylvan scenery, seeming almost to shiver in their slight classical drapery as the green drip from the trees falls upon them and covers them with dirty streaks. The prejudice thus created is so great that many garden-lovers would seem to be unable to see that statuary has any fitting place or function in a well-ordered pleasaunce, and yet, where else could it be so effective as in a garden, ostensibly devoted to the leisured cultivation, expression and satisfaction of our artistic leanings?

*Misuse of
garden
ornaments.*

I agree most wholeheartedly that poor plaster casts from the antique or conventional figures in glaring white marble are totally unsuited to our purpose, for, quite apart from questions of subject and treatment, their hard sharply insistent white silhouettes must cause an over-emphasis of the point they are supposed to adorn; but this does not mean that statuary in other materials, such as lead or bronze, which tones and harmonizes with the surrounding greenery, rightly placed and in keeping with its setting both as to scale and sentiment, may not be used with the happiest results.

Statuary.

Severe restraint is, however, more necessary in the introduction of this feature than of any other, simply because it represents the last and culminating point in the composition beyond which we have no further power of emphasis. In music, the sudden loud crash of sound, in pictorial art, the most vivid contrasts of tone and colour, in rhetoric, the highly figurative hyperbole, must be used but rarely and with caution, because, in every case, they represent the last effort, the exhaustion of the full range of the powers of expression, and so, in the employment of statuary, which takes much the same position in our own art, restraint and reserve are equally necessary, and the highest point must be touched but seldom and, where approached, must show the evidences of a master-hand.

It is evident that the subject matter of a statue will go very far to determine its suitability or otherwise for a place in the garden, but this does not mean that we must

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fill our pleasaunces with representations of Ceres or our woodland glades with Dianas. Quaint shepherds and shepherdesses, such as those shown in illustrations Nos. 196 and 197, will strike a rural note more acceptable to modern minds, while, if a more classical subject is desired, Cupids, dryads, satyrs and fauns allow of almost endless scope for taste and discrimination in their posing, placing and application. Illustration No. 199 shows a little lead statue of Cupid which was modelled for me some years ago, and which I have reproduced several times without in the least tiring of it. In fact it has that special quality of the best work in that, instead of palling through familiarity, it seems to grow upon one the more one sees it.

*Applied
sculpture.*

FIG. 196.

But there is another way in which this form of garden ornament may be used. This is in what one may call "applied sculpture," a good instance of which is the boy and dolphin fountain shown in illustration No. 237. Fountains invite this type of decoration probably more than any other form of garden equipment, but observation of existing examples shows the necessity for great caution in its choice and arrangement, and for care that none but the best obtainable is used.

This strong insistence on the assertion that no statuary but that which is really good should be given a place in the garden does not mean that it must be excluded from the domain of the man of only moderate means. Old lead figures of real merit may occasionally be picked up for quite moderate prices, and, where the choice has to be made, I would strongly advise the acquisition of a good copy of a well-known subject, even though it lack the quality of uniqueness, in preference to an original conception of second-rate artistic merit.

The boy and dolphin from the Uffizi,

Mercier's David and Goliath, the well-known Greek Slave, and the half-dozen specially good Cupids which it is possible to obtain can never pall and, though often repeated, are to be preferred to the generally commonplace original creations of the monumental mason.

Subjects from Greek and Roman mythology will need some adaptation to their use and surroundings if they are to be successful, but there is one feature of classical ornament which seems to adapt itself perfectly without the slightest rearrangement. This is the acrolith, which from its nature is only suitable for use in gardens laid out on formal lines and usually in conjunction with clipped hedges, where it can be used to divide the hedge into bays or mark the position of an opening, as in illustration No. 203. It may also be used, however, to emphasize the termination of an avenue or glade, as in the

FIG. 197.

Acroliths.

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FIG. 198.

GARDEN STATUARY.

FIG. 199.

FIG. 200.—PALAIS ROYAL, BRUSSELS, SHOWING THE EFFECTIVE USE OF ACROLITHS.

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FIG. 201.—THE EFFECTIVE PLACING OF STATUARY.

FIG. 202.—DETACHED COLUMNS IN THE GARDENS OF MARIE OF PADILLOA, SEVILLE.

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view I give of the Palais Royal at Brussels (Ill. No. 200), while illustration No. 201 shows how a pair of these features have been placed so as to break up a plain wall surface and give character and finish to an architectural composition. Illustration No. 204 gives a modern adaptation of the same idea.

Detached columns of traditional classic design often, but not always, surmounted with statuettes or graceful lead urns may be used for the same purpose, as shown in illustration No. 202, which is an instance I came across in a garden at Seville, or one may be placed in the centre of a formal garden to be smothered in rampant roses or clematis. Those readers familiar with the Parc Monceau at Paris will also remember what a charming effect may be obtained with a classic colonnade in conjunction with wild foliage and water. Sometimes, too, a single column may support a cubical block of stone, the four faces of which bear vertical sundials (Ill. No. 234).

The sundial is a feature which allows of very varied treatment, and there are examples of quaintly conceived pedestals supporting a polyhedral block of stone bearing literally dozens of dials on its various facets, each one having its own particular markings carefully calculated in accordance with its placing in relation to the path of the Sun. Such arrangements, however, and also the huge topiary sundial at Broughton Castle, partake of the nature of curiosities or freaks, which, however quaint the original examples may be, cannot be repeated indefinitely without destroying that interest which belongs to the unique and curious. Rather should we try, in this as in every other garden feature, to combine use with beauty and grace of form, and clothe the whole with that sentiment which belongs naturally to the subject of so much literary verse, and which has come down to us with an unbroken record of usefulness from the dark ages.

Unlike some other antiques, the sundial will not usually bear removal from its original surroundings without losing the whole of its old-world charm and becoming more or less commonplace, and it is usually therefore much better to design one to fit its surroundings than to purchase one of the old examples. Again, as every position requires a specially designed dial, and every degree of latitude a differently shaped gnomon, once a sundial is removed, it cannot be relied upon to register correct time.

In passing it may be explained that the time told by the sundial is *Solar time*, which

*Detached
columns.*

Sundials.

FIG. 203.—ACROLITHS AT EITHER SIDE OF
OPENING IN A NEWLY-FORMED HEDGE.

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varies slightly according to the seasons, and not the *mean* time to which we are accustomed. There is also this difference, that whereas we use Greenwich time throughout Great Britain, and Eastern Europe, each place East or West of Greenwich has, of course, its own meridian and its own time, which is registered by the dial. This difference is easily found by reckoning four minutes for every degree of longitude separating the site of the sundial from Greenwich. This gives us Greenwich solar time, and, to discover Greenwich mean time, which is what our watches show, it is necessary to consult a special calendar which shows the difference for each day in the year between the two systems, or the calendar may be so arranged as to translate local solar time directly into that shown by ordinary clocks and watches. In most of the better dials, this calendar is engraved on the plate itself, and, in vertical dials placed on the four sides of a block of stone, such as that in illustration No. 234 previously referred to, that which would face North may be omitted, substituting for it a plate engraved with the calendar and other interesting information such as the latitude and longitude, the family escutcheon, the date, or a quaint sundial motto.

The ordinary horizontal dial plate may also be given additional interest by the application of chaste and restrained ornament. The centre is, of course, occupied by the dial markings, but there remain the margins and corners, which may be treated with chased ornament or bas reliefs in the manner indicated on the sketch of the plate accompanying illustration No. 205.

A mechanical sundial has recently been introduced, which, by projecting a spot of light on to a mark, shows Greenwich mean time most accurately to at least half a minute, but, like many other modern improvements, it has none of the charm and

FIG. 205.—DESIGN FOR A SUNDIAL.

FIG. 204.—ACROLITH IN THE FORMAL GARDEN, BROCKENHURST.

aesthetic interest which clings around the old form of dial. It may be used with advantage on the principal terrace opposite and close to the garden entrance to the house for practical purposes, but, in other parts of the pleasure, the older form, with its graceful gnomon and quaint motto will usually be preferred.

Both illustrations Nos. 205, 206 and 207 show designs for sundial pedestals which would suit most positions where it is desired to give emphasis to the central point in a garden

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or terrace scheme, while, to close a vista, a taller arrangement with vertical dials is usually more suitable. Vertical sundials also form a very appropriate ornament for garden houses or for placing over a doorway in a high fruit wall or over the garden entrance to the house, whenever any of these positions will provide a sunny aspect.

Before turning to the consideration of wooden garden furniture, vases and urns of stone, bronze or lead must be mentioned. The great is far too little accommodation for to have a rough and strongly-made vase, so that, during the worst plant which it contains may be disturbing the heavy outer casing. form of vase which I specially requirements, and which has been face closely resembling a smooth-where, other kinds of terra-cotta, avoided in the garden, but where obtained which is aesthetically pre-stone, for the sides and bottom may thinner, there is room for same... might be very... ively in

FIG. 206.—SUNDIAL SHOWING A DUTCH INFLUENCE IN ITS DESIGN.

lead, but there are so many small lead cisterns of clever and quaint old workmanship to be obtained which will answer the purpose admirably (Ills. Nos. 209 and 210) that it is

FIG. 207.

hardly necessary to make one specially unless circumstances demand a given size and shape, or a number of similar pattern are required, as when they are to be placed at regular intervals along a terrace walk or instead of finials to the balustrade.

Lead or stone urns, such as those made by the Bromsgrove Guild shown in illustrations Nos. 211 and 212, are eminently ad-

FIG. 208.

apted for the latter purpose but, in choosing these, care should be taken that nothing is introduced into the garden which suggests either a cinery urn or the one beloved of the monumental mason. Of these, again, and also the pineapple finial which fulfils much the

Vases and urns.

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same purpose, numbers are to be found which have been removed from old houses, and which are quite as good, if not better, than modern ones, apart from the interest which their history may give them. In renaissance gardens they were often placed on stone bases or used as finials to gate pillars or to mark the corners of the terrace walls.

FIG. 209.

LEAD CISTERNS.

FIG. 210.

*Wooden
garden
furniture.*

Turning now to wooden garden furniture, we are first of all confronted with the question,—What is the best wood to employ? A long experience of many kinds has convinced me that, quite apart from its sentimental advantages, oak is without a rival

FIG. 211.

LEAD VASES.

FIG. 212.

for garden purposes. It is true that teak is very good, but it does not weather to such a nice colour and, being a foreign wood, does not seem to harmonize so well with its surroundings. Oak, too, when exposed to the weather, turns a beautiful shade of silver-

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grey which is exactly complementary to the prevailing green of garden foliage, an advantage which other woods do not share. It is obvious, too, that wood which requires painting cannot be so satisfactory, for there must be more or less destruction, or at

FIG. 213.

least disfigurement, of any climbers growing over the wood-work every time the paint is renewed, and this is worse still if any such preservative stain as Stockholm tar is used, for the volatile emanations from it will have a bad effect on the climbers for months after application. That all oak, if in at all large pieces, will split more or less when exposed to the weather, however well it is seasoned, need not, I think, be considered a detriment, for it does not appreciably weaken the work, and gives it a weathered and rustic effect quite in harmony with its surroundings.

Wherever oak posts are buried in the ground, they should be placed inside an ordinary glazed drain-pipe and the space between the two be filled up with cement.

Burying oak posts.

The top of the pipe may be level with the surface of the ground, and the top of the cement be dressed so as to slope away from the post on all sides. Even by this means it is impossible to obtain an absolutely watertight joint between the wood and the

FIG. 214.

cement, for the latter shrinks somewhat in setting. It is therefore necessary to provide that the small amount of wet which finds its way into the nick between the two shall have a means of escape at the lower end, or the post will rot. This is easily done by burying the lowest three inches or so of the post in dry material, such as clean gravel, or broken stone or brick, and before filling in with the cement, placing a piece of felt, rag or waterproof paper on the dry stuff to support the cement, and so prevent it from mixing with the dry material until it has set. The wet will then run down the post and get away through the dry filling at the bottom of the pipe (Ill. No. 213).

The upper ends of all posts where exposed to the weather should be protected with caps of wood or lead. These can be made to add very much to the appearance of the post, especially if the caps take the form of ball-finials or small urns (Ill. No. 214).

While these remarks on the choice and preservation of timber apply equally to all garden furniture wholly or partly constructed of wood, they have particular force when applied to trellis.

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Trellis.

Mr. Belcher, in a most able paper read before the Royal Institute of British Architects made some remarks concerning it which apply so aptly to our present subject that I have ventured to quote him at some length. He said :—"Wherever wood construction has been in vogue, varied treatment of 'post-and-rail' and 'lattice work' has been in use all the world over. India and Burmah, China and Japan, each has its characteristic treatment worked out with wonderful elaboration and finish. The familiar Cairo lattice work is another variety of the same thing in the East, while every European country on which the sun shines, has its own method of affording shade and shelter by trellis-work. It is the ease and facility with which daring experiments can be made which render it valuable. It can be altered and shifted at pleasure until the desired effect is obtained in a way solid and valuable material prohibits....."

FIG. 215.

"In the art of laying out a garden, as in architectural designs, there is a certain seductive mystery gained by partly concealing and judiciously screening some parts from immediate view. By this means the imagination is tempted to conjecture the presence of hidden delights beyond,

FIG. 216.

"and interest is quickened in expectation of some further enchantment."

"Besides the fact that divisions of some kind are necessary for such surprises to the casual visitor, they have always the additional and permanent advantage of affording

FIG. 217.

seclusion, quiet and comfort. The very flowers and shrubs enjoy the retreat, for in the shelter they luxuriate, and their sweet fragrance is not dispersed by rude winds. Tall hedges of yew, laurel, or holly form substantial divisions, but years must elapse before such hedges can be effective. And here the common

or garden trellis will prove the temporary substitute. Against it the hedge can be planted, protected and trained. On the wood trellis roses, clematis, jessamine and

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"honeysuckle will climb readily, and show their preference for it over cold and uncongenial iron rods and chains of wire."

"With the flexible laths, deep archways can be formed in the trellis division just long enough to form a dark frame to the picture beyond. Or if a peep is required here and there, a few laths can be cut and a bent piece or hoop of wood, circular or oval, inserted, forming an unglazed window in the trellis or hedge. Should it be desirable that the upper part of a high screen, or parts of it, be more open or only partially hide what is behind it, then the trellis can be cut into patterns more or less open as desired—sometimes in panels, sometimes in a running pattern."

FIG. 218.

*Design of
trellis
screens*

In designing trellis for out-of-doors use, it is first of all necessary to remember that it is to form a background or framework on which to display growing things. While this does not prohibit the adoption of a design which shall be beautiful in itself, its beauty must be of very unassertive order, or it will compete with that of the flowering and foliage plants with which it is adorned, and so show evidences of bad taste and ostentation in its arrangement. The accompanying designs (Illustrations Nos. 215, 216, 217, 218 and 219) will show exactly what I mean, and will supply material for adaptation to the design of trellis screens for different sets of conditions. In designing trellis it is also necessary to remember that in every case a sufficient number of both horizontal and vertical pieces must be provided throughout the design for the support of the climbers. Thus, any kind which, over a considerable area, has only vertical bars, would prove unsuitable in practice.

The cheap expanding portable lattice, which is such a poor and untidy material as generally used, may make an exceedingly cheap and neat trellis when inserted in a strong framing of pitchpine, with posts about three inches square and rails about three and a half inches deep, and two and a quarter thick. It may also be combined with specially made lattice or with riven oak spads in a variety of ways, and is particularly useful, when framed up thus, for use in cottage gardens, if finished with four good coats of green paint of good and lasting quality.

Trellis, of whatever kind, must of course be firmly fixed together at every intersection of its members, not only to make it rigid and strong, but also to prevent warping.

FIG. 219.

In the case of oak trellis this may be done either with wooden pins or copper brads. Iron nails should never be used in oak as, immediately after the first shower of

rain to which the work is subjected, black stains will begin to appear round each. Copper has not this effect. In square plain lattice, such as that which fills in the spaces between the pillars in the pergola shown in illustration No. 388, oak pins are extremely effective and, if made from absolutely dry and thoroughly seasoned material, are quite satisfactory.

Almost all the drawings for pergolas in this work show its effective application to

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varying circumstances, while some of the garden plans illustrate uses to which it may be put, as, for instance, in screening cropping ground from the tennis lawn in the writer's own garden (Illustration No. 380).

*Trellis for
covering
walls.*

Trellis for covering blank walls is generally best made in perfectly plain squares about nine inches between the laths both vertically and horizontally, and of course the framing may be lighter than when it has to stand alone. Unless it is made of oak, it ought to be so fixed as to be easily removable from the face of the wall, as far as may be without tearing the stems of the climbers, in order that it may be repainted at intervals, and, if the wall is distempered, as so many roughcasted walls are, this will be still more necessary as lime distemper is very injurious to the foliage, besides looking very untidy when splashed on it.

*Openings
in trellis
screens.*

An opening in a trellis screen to allow a path to pass through it always provides the opportunity for an effective arrangement. It is very rarely that the screen itself

is high enough to allow of the opening being cut through it, and so an arch has to be formed over the path. The central part of the pergola in illustration No. 192 will show how this may be done in wood, while the rose arch in illustration No. 219 indicates how an iron arch may be contrived with happy effects.

*Rose
arches.*

FIG. 220.—ROSE ARCHES OF IRON WITH OAK POSTS.

objection, for, by the time the roses reach the iron archbars, they are well established in vigorous growth, and are not affected to the same extent by the change from wood to iron. Illustration No. 221 shows a simpler arrangement constructed entirely of unpeeled larch.

Illustration No. 222 shows another way in which arches of this kind may be used to form a screen instead of trellis. In this case they are placed side by side instead of one behind the other, and probably a better method still would be to place them further apart and hang light chains between each two, on which to train the climbers.

*Rose
screens.*

Another fence of the same kind can be contrived by simply erecting posts at intervals of say ten feet, and hanging chains between them, the whole being clothed as densely as possible with climbing roses, honeysuckle or clematis. It may be objected that the

chains would swing in the breeze and so chafe and tear the climbers, but this may be prevented by fixing the centre of each length to a neat stake driven into the ground. A variation of this arrangement, which will suggest many others, may be obtained by erecting a low trellis fence about three feet high and carrying the posts up a further four feet and suspending chains between them, the centre of the chain being attached to the top rail of the fence.

Such screen fences of trellis, arches or rose festoons need not necessarily be in straight lengths. In the chapter on kitchen gardens we have shown how effectively they may be used in a circle round the dipping well, with seats backed against them and arches over the pathways approaching the well head. They may also be used in a semi-circle to give an apsidal recess round a semi-circular seat, and other cases will occur, such as a semi-circular arrangement of flower beds at opposite ends of a lawn, which will need the shelter of a curved fence of trellis work.

Traditional French *treillage*, which is a highly elaborated form of trellis work for interior decoration, has been mentioned in connection with conservatories, where it is generally used. It is too highly decorative for general use in the garden, but its simpler forms may sometimes be employed effectively in relieving the bare walls of the courtyard to a town residence when they are viewed from the principal windows. The ornament must however be severely restrained, and the scrolls, perspective panels and rococo work which characterise the original examples should be omitted as too flamboyant for use out-of-doors in the English climate. As in all the other trellis illustrated, the effect is sought rather in the disposition of the parts and the spacing of the laths than in superadded adornment. Such trellis could only be graced by the lighter climbers, which would not hang in thick enough masses to obscure the design or strain the thin and delicate laths which are essential to it. To prevent a bare effect, trees in tubs would be placed in front of it at intervals, varieties which bear a profusion of brilliantly coloured flowers, and which have a long flowering season being chosen in the case of a town garden.

Such tubs, of which designs are given in illustrations Nos. 223, 224 and 225, are essential to the success of a town garden in a small courtyard, where it is necessary to obtain the greatest amount of bright colouring at all seasons, and there is not room for plants which are not actually in flower. The vases previously described are, of course, indispensable, but they cannot be included in great numbers without over-elaboration, so

FIG. 221.—ROSE ARCHES OF LARCH WOOD.

Treillage.

*Wooden
tubs.*

FIG. 222.—A ROSE ARCH SCREEN AT FOOTS CRAY PLACE.

that, although they must be used to emphasize the design and punctuate particular points, the smaller and more portable tubs will also be required. Filled with sweet bays of either the mop-headed or pyramidal varieties they are particularly useful, while, in the town courtyard, a screen of greenery may be contrived by placing a row of *Thuja Lobbii* or *Cupressus erecta viridis* in tubs as close together as possible, to form a hedge.

FIG. 223.

It is on a paved country house overlawns, however, that most useful. Such a somewhat exposed to the tub is far better trived in the paving, removed in the Winter. also be placed on the wall to mark the sides or at intervals to and especially where

FIG. 224.

terrace in front of a looking gardens and the tree-filled tub is position is usually winds, and therefore than a soil bed con- as the tree can be Tree-filled tubs may flat coping of a terrace of flights of steps, punctuate its length, stone finials would be

FIG. 225.

too formal and obtrusive. For such positions a rather squatter tub is usually desirable than when it stands inside the parapet in order to prevent a top-heavy appearance.

Seats.

Garden seats may be of wood, stone or iron. Of these three materials there is no doubt that, in this climate, wood is the only one which is really satisfactory. For eleven months of the year, the other two are so cold as to be quite comfortless, and even dangerous to the health, though, of course, there is no reason why stone seats should not be fitted with a wooden grating, which can be removed in bad weather, and, in the case of a classically detailed terrace wall which demands a seat on traditional

lines in the same material, I would certainly advise that this be done. Elsewhere, however, wood will look more in keeping with the sentiment of the English garden.

Within the last few years there has been a great improvement in the design of the general run of garden seats, though examination of a few examples will show that too much attention has been paid to the effort to copy the general lines of pre-Georgian work without giving sufficient care to the relation and proportioning of parts. Most of the designs seem to lack definite purpose in their conception and execution, and in those given (Ills. Nos. 226, 227, 228, 229, 230 and 231) an attempt has been made to over-

FIG. 226.

come this defect, and to give a seat of comfortable proportions without sacrificing grace of form. The usual length for such seats is six feet,

FIG. 227.

but, of course, for special positions, from five feet to twelve feet long may be necessary. Where, however, the length exceeds nine feet, an extra arm dividing it into two parts is often desirable.

For woodland walks and outlying parts of the grounds, very simple designs are usually best. A very good form is that in which the back is made of solid boards and is hinged so as to close over the seat and keep it clean when not in use. Such a contrivance may, with care, be made quite neat and in keeping with its sylvan surroundings.

Of iron seats, it may be said with truth that most of the existing patterns are atrociously ugly, and not very comfortably proportioned. There is no reason why this

FIG. 228.

FIG. 229.

should be so, and the writer has seen Georgian examples in that most intractable of all materials, cast iron, which were charming in every way. It is the more modern productions with their ridiculous fligree ornament which offend the canons of taste to the greatest degree.

Curved seats are often required, and are particularly suitable for placing at the end of a garden vista, when additional point may be given to the arrangement by marking the centre from which the curve is struck by a sundial or a choice piece of statuary on a tall pedestal. Illustration No. 232 shows a similar arrangement which

STATUARY, TREILLAGE AND GARDEN FURNITURE.

would lend itself particularly well to adaptation for use in the garden attached to a classical mansion at the end of a vista formed by a path between herbaceous borders. The most useful size is nine feet long measured straight across between the two ends, but, of course, in almost every case, such seats will have to be made exactly to suit their particular surroundings, both as to size and the amount of elaboration or simplicity in the design.

FIG. 230.

FIG. 231.

Dovecotes.

Dovecotes are extremely decorative features where it is possible to introduce them, but, unfortunately, the havoc wrought by the doves in the flower garden prevents their extended use. Illustration No. 233 shows a design erected in a garden laid out by

FIG. 232.

the Author. In even such small dovecotes as this, the interior should be divided up into a series of boxes with only one entrance to each. The usual size is about twelve inches every way, but fan-tailed birds should be given a little more room if possible. Where it is desired that the birds should breed readily this is still more necessary, and, if possible, there should be a second nesting-box opening out of the first. That the dovecote and the nests can easily be kept clean is the most necessary requirement in their design, and inaccessible corners which cannot be reached for cleaning are to be avoided. Dovecotes contrived in the gables of out-buildings and summer-houses are, of course, more practical than those of the form illustrated, where the doves, and not the quaint erection itself, are the attraction, or where a considerable number are to be kept. Attached to several of the old manor houses of England are large circular dovecotes about twelve feet in diameter, the brick or stone walls of which are honeycombed throughout with nesting holes. A large framework supporting

a ladder is built to a circular post, which is placed in the centre of the building, so that the whole can be revolved and any one of the hundreds of nests be reached at will. The walls are about fifteen feet high, and support a conical roof which has a lantern at its apex to accommodate the pigeon holes by which the birds pass into and out of the building.

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Illustration No. 417 shows the exterior of an aviary which, though not designed by the Author, forms a very welcome adjunct to one of his garden schemes. It is remarkable that such features are not more common than they are, as they not only add variety to the other charms on the garden, but allow of effective decorative treatment.

Although very few domains possess a sheet of water large enough for boating, this chapter would hardly be complete without some reference to boathouses and water pavilions, for there are many lake-side and river gardens which will require these adjuncts.

Boathouses will vary very much in design and accommodation, according to circumstances, from a simple shelter to accommodate a rowing boat, a couple of canoes, or a Thames punt (Ill. No. 235), up to the more pretentious erection required for use with

*Boat-
houses.*

FIG. 233.

FIG. 234.

the sailing boats used on the English Lakes, which will have to be provided with wet and dry docks. In any case where the erection is large enough to give the necessary base-line for a properly proportioned building of two storeys, a tea-room partly built into the roof in a quaint manner and with a broad outlook over the sheet of water, cannot fail to be a much-appreciated feature. In the Winter, too, when not required for its more legitimate purpose, it may be used for storing and redecorating the boats, and, for this reason, should be provided with a fireplace, if possible in an old-fashioned deep ingle. In other cases, the room over the boat shelter may be arranged as a dressing-room, with a staircase giving convenient access to the water near the entrance to the wet dock, so that it may be entered by bathers without encountering a cold wind.

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While a rustic appearance will usually be desired for a boathouse which stands on the margin of a picturesque river or lake, this should be obtained solely by simplicity of treatment and not by any of the tricks of the so-called rustic builder. Where stone is the native building material, rough strong work in squared rubble, without any dressed stone beyond that which is absolutely necessary to the arched entrance to the wet dock, should result in an erection which, when smothered in ivy and other native creepers, will be quite in harmony with its surroundings. The arch itself should be semicircular in form, and neither elliptical nor pointed, either of which would look artificial and unrestful.

FIG. 235.—SMALL BOATHOUSE WITH SHELTER OVER.

*Water
pavilions.*

Water pavilions will be still more rarely needed, and their design will depend so much on local circumstances that it is impossible even to lay down any general rules for their arrangement. It is, however, evident that a strong influence in this direction will be exerted by the reflections of the building in the water, as they will double its length without increasing its breadth. The design therefore, while it makes the most of this added length, should possess strongly marked horizontal lines to balance the lengthwise perspective. The Chinese water pavilions which were so mistakenly introduced into this country a hundred years ago, at least pointed the way in the direction just advocated, and our aim should be to achieve the same result in a less exotic style of architecture.

FIG. 236.—THE CANAL, KEARSNEY COURT.

CHAPTER XII.

From childhood to old age, water in its many natural and decorative forms, has an indescribable fascination for the mind. No doubt the reason for this is found, at least to a very large extent, in its variableness. Its surface alters with every shower which feeds it, every change in the sky it reflects, every variation in the breezes which touch its surface, every stage in the changing seasons and every hour of rotating day and night, so that it may be said, with perfect truth, that never do we see it under the same conditions twice and never is its surface the same.

*Water's
fascinating
qualities.*

There is another way, however, in which water appeals to us, and that is in its marvellous facility for adapting itself to its surroundings. On the wild mountain side, it rushes headlong over the rugged precipice with a dull roar which adds to the wildness of the prospect, and, on the other hand, in the peaceful meadow, it flows still and silently, its surface perhaps scarcely ruffled by passing breezes and in perfect harmony with browsing kine and gently waving reeds.

It is only when man, neglecting the lessons of Nature, tries to reproduce her incomparable beauties on a mean scale by feats of obtrusive engineering, that water can fail to please. Here we may take our first and most primitive rule for its use in our gardens, never to belittle Nature by feeble imitation, but where the conditions will not allow of the introduction of water, shall we say, on its own terms and among purely natural surroundings, to treat it in an honestly and confessedly conventional manner, in keeping with the rest of the scheme and in scale with the whole, whether it be as the lordly canal before a renaissance mansion or the quaintly detailed bird-bath before a cottage window.

We need never fear that, in training it to conventionalized uses, we shall destroy its charm. In whatever way it is employed, where it rises or falls it will provide a brilliant high-light, where it lies still, a deep mysterious shade, and where it ripples over a shallow place, the very essence of joyous life ; at all times a sensation of coolness and freshness and a temptation to rest.

Although many, perhaps most, gardens have to be content without water in any form, it may be questioned whether they are really complete without it, if only a small pond, reflecting and blending, in thousands of beautiful ways, the hues of flowers, foliage and sky, at the bidding of every passing breeze ; or but a swamp pool, hidden away in cool, fern-embowered shade and fringed with luxuriant masses of bulrush, iris and sedge.

In devising the form in which water shall be introduced into the garden and the design of its receptacle, there is a vast range for the exercise of the imaginative and creative faculties.

THE DECORATIVE TREATMENT OF WATER.

*Water's
many
applica-
tions in the
garden.*

The landscape gardener, in his naturally arranged lake and waterfall, endeavours to create a sense of breadth and rural simplicity, while the scholar, inspired, possibly, by the classical Italian and old English examples, prefers the elegance of the circular or geometrically planned pond; and each is right in his own sphere. All schools, however, agree that water in some form is desirable—the Italians in their numerous cascades, fountains and pools, as at the Villa d'Este; the French in the virile and heroic compositions of le Notre at Versailles, and the Japanese and English in their freer but equally distinctive styles.

It is seldom that an opportunity occurs in an English garden for formal arrangements of water on the scale which gives character to so many Italian and French gardens. Even in the larger public parks we feel instinctively that elaborate and theatrical displays of waterworks are out of place and out of keeping with the prevailing national spirit. In this country, large sheets of water are more often obtained by flooding valleys or low-lying land, the resulting lake or pond having an outline which follows the natural contours of the surrounding rising ground, an arrangement which suites our homely landscape far better than those in which engineering feats are much in evidence. We have, however, many formal arrangements of water which, though on a smaller scale than the classic examples just quoted, are more suited to their environment, such as the canals of Hampton Court, Chatsworth and Melbourne, Derbyshire, or the Round Pond at Bushy Park. In other places where gardens with smooth lawns bound a river on either side, as at Clare College, Cambridge, the river, lawns and any accompanying architectural features may be grouped into one formal composition with excellent results and even where only one side of the river is available for treatment, as at Trentham or Drakelow, Derbyshire, a successful formal arrangement may be evolved.

These, however, are schemes which are only adapted to large gardens accompanying palatial mansions and for use in the home park, and it is in the garden near the house that water is most entrancing. Fortunately there are so many ways in which it may be adapted to varying circumstances that few gardens need be without it in one form or another. The manner of its introduction will not only be dependent upon the character of its surroundings and its position in relation to the residence, but also upon the volume and pressure of the supply and whether it can be obtained on the estate or must be brought from a distance, also whether it must be paid for by meter or otherwise. If the supply is from a stream passing through the grounds, a good head of water would suggest a series of cascades, while if the stream were one of those sleepy rivulets so characteristic of the home counties, then the obvious treatment would consist in the arrangement of a formal lily pond or ornamental canal in which iris, reeds, or other water-loving plants might be naturalized.

Having thus touched briefly upon the introduction of water into the design of the garden, and mentioned its various forms, we may now proceed to deal with each of these more in detail.

Fountains.

By far the most generally useful of all these is the fountain, in one or another of its many kinds, which vary from the single jet rising from a simple pond to the elaborate and sculptured designs for which Versailles is famous. The choice is therefore a wide one, but, as in every other feature of the English garden, while the design and degree of elaboration should express a full sense of the relative importance of its position in relation to surrounding features, it is far better to err on the side of too simple a treatment than too great complexity and over-elaboration.

In nine cases out of ten where a fountain is well placed, it will form part of either a formal terrace scheme or the central ornament in an old English formal garden such as a rose garden. In the former instance, if the position is at all exposed, it may not be possible to have a rising jet, as the wind would blow it clear of the basin into which

it should fall, and so prevent the terraces from being used at all on its leeward side, while in the case of the formal garden, which would usually be enclosed with tall clipped hedges, there would be ample shelter. Neglect of the effect of winds on the fountain is the cause of more failures than any other factor. If, whenever there is more than the gentlest breeze, it renders all its surroundings damp, there will be comparatively few occasions when it can be used, and the extent to which the water may be blown is very little realized by those who have not experienced it. To quote an example which will be familiar to everybody, the writer has felt the spray from the fountains in Trafalgar Square, London, at the corner of Cockspur Street, on an exceptionally windy day, even though in this case there is considerable shelter from the surrounding buildings. On an exposed terrace, therefore, it is far better to allow the water to spout downwards into a series of basins, as in the well-known example at Revelstoke, or, where there is not sufficient pressure on the supply main for this, to be content with a bubble fountain. One instinctively feels that the best place for a fountain is an enclosed court of some kind where the still air might be oppressive on a hot day were it not for the sensation of coolness and freshness imparted by the falling water, and it is here that the rising jet will be least liable to be blown about.

*Fountains
in exposed
positions.*

FIG. 237.—BOY AND FISH FOUNTAIN.

In such cases the light feathery streams may rise from the surface of the water, or where more elaboration is called for, a group of statuary, such as the boy and dolphin shown in illustration No. 237 may be introduced. The height to which the jet should rise and the diameter of the pond into which it falls, should be carefully proportioned, and, generally speaking, heaviness in the effect on the one hand and a liability to overflow on the other will be avoided by making the latter very slightly more in diameter than the height of the former. At Drakelow, Derbyshire, there is a well-balanced arrangement consisting of a circular stone basin with

FIG. 238.—FOUNTAIN POND AT LEWISTON MANOR.

a simple stone verge level with the grass, and in the centre a bronze figure supporting the jet, while at Lewiston Manor (Ill. No. 238) the Author designed a simple fountain of this kind, which is surrounded by a basin edged with two concentric steps leading down to the water, the upper one level with the surrounding paths, thus obtaining a strongly marked line of enclosure without over-elaboration. Many other well-known examples will no doubt be familiar to the reader.

Simple designs.

A single jet may also be used in conjunction with formal lily ponds, such as that at Wych Cross, Sussex, shown in illustration No. 240; or two such jets may rise from either end of a long pond, as at Athelhampton Hall, Dorsetshire, and wherever there is a tendency for any formal canal or pond to appear at all stagnant, such a fountain may be used to remove this impression.

FIG. 239.—FOUNTAIN AT ROME.

Turning now to more elaborate fountains, we are at once struck with the very unaccountably large proportion of failures we meet with in their design and placing. If we dismiss the cast-iron fountain made from the iron-founder's stock patterns as being too vulgar for even serious condemnation, we still find that most of the remaining stone or terra-cotta fountains with any pretensions to elaboration are quite unworthy of the positions which they occupy. With regard to the latter material, it is sufficient to say that, while there would seem to be no valid reason why effective erections should not be possible in the more sober-coloured and stone-like surfaced terra-cottas, it has seldom been done, possibly because the many meretricious designs produced by the manufacturers of this material have disgusted capable men with it. The reason for the preponderance of heavy and over-elaborated stone fountains, with the highly polished granite columns and freestone caps surrounded by elaborately foliated cusps which form their stock ornament, is more difficult to find, and one can only conclude that the great importance of a well-balanced design, with the details carefully proportioned, is not generally understood

More elaborate fountains.

FIG. 240.—THE LILY POND, WYCH CROSS PLACE, SUSSEX.

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by the owners, and that the work is therefore left in the hands of incapable persons, instead of being entrusted to the architect of the residence, who would be anxious that nothing should be placed in close proximity to it which would not be designed in a harmonious spirit. Be improvement in the design of these private gardens if they are to be their very nature and use, their them. Unless the very best of both obtained, it is far better that elaborate than the almost severe lines of the old example illustration No. 239.

Three examples of shafts are first (Illustration No. 242) there is a central shaft rising from the upper basin with three smaller shafts supporting a further basin from which water falls into the lower basin at the foot of the shaft and from thence into the pond below. In the second (No. 241), a fountain of

sculptured fountain given. In the third (No. 243) is a central shaft from the upper basin with three smaller figures supporting a further small basin which the water falls to the larger foot of the

*Sketch for FOUNTAIN at
LEES COURT Faversham
for Mrs HALSEY*

FIG. 241.

FOUNTAIN ON TERRACE

FIG. 242.

a more usual type suitable for almost any position is given, while in the third illustration

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(No. 243) is shown a small but very chaste design which is suitable for many positions where a large fountain pond is impossible, and which in the shaft at least bears evident traces of Albert Gilbert's unique craftsmanship. Such a fountain might stand on an upper terrace immediately in front of one of the principal entertaining room windows to form a bird bath. These three may be taken as three different forms of tailpiece to this chapter being representative of fountain shaft, and the sculpture by Messrs. Cashmore & Co., which could be used with effect for the further enrichment of

The very mention of a fountain is sufficient to bring for most clients, bringing to their minds at once a vision of endless expense and worry and work is thoroughly well there need be no fear on always by any means be erection. As in the case to, and shown in illustration even be a simple font-be employed instead of a group of flower beds interest to a vista down smallest fountain at the walk or forming the formal garden, especially or other dark foliaged evergreens, may be invaluable in giving an interesting high light whereon to focus the eye, and has the additional merit of only requiring a small supply of water.

Whatever the design adopted for the fountain, however, nothing but the best of its kind can possibly be permanently satisfactory, and therefore it is far better to have a well proportioned simple erection and strongly constructed than to amount of money bitious effort be spent the same on a more ambitious which cannot be completed with the same thoroughness.

The pond or basin of a fountain may be treated in a great variety of ways, of which are various plans of this work. As a rule, a plain circle (Ill. No. 238) or an octagon (Ill. No. 244) is best, while in other positions, especially where jets on the four sides throw inwards towards the central shaft, some such combination of square and semicircle as that shown in illustration No. 245 would be more effective, allowing one semicircular bay opposite

FIG. 243.—SMALL FOUNTAIN OR BIRD BATH.

FIG. 244.—SIMPLE FOUNTAIN BASIN.

*Fountain
basins.*

THE DECORATIVE TREATMENT OF WATER.

each of the four jets. A basin oval on plan is very rarely called for, and where used should be treated as simply as possible. Such a shape in conjunction with an elaborately moulded kerb is unthinkable.

The design of the kerb surrounding the basin also allows of much variety. In simple fountains a plain flag level with the path or grass surrounding it is most suitable, or where a greater sense of protection is required than this arrangement will give, the flag may be raised on a dwarf wall, so as to bring its top surface about eighteen inches above the surrounding ground, and where a roughly built wall and coping are suitable, it may be adorned with little water-loving ferns and plants inserted into the joints between the stones, or, again, oak posts may rise out of the coping at regular intervals to a height of about six feet, and chains be suspended between them whereon to grow roses.

Where greater elaboration is needed, the kerb may consist of blocks of stone suitably moulded, or, to obtain the richest effect of all, a balustrade "leaning height" or three feet three inches high may be used and, if necessary, further enriched by piers at intervals surmounted by finials, though the latter must be very appropriately chosen and carefully proportioned if they are to look neither obtrusive on the one hand nor insignificant on the other.

The pond itself, which should be two feet three inches deep below the water line, if water lilies are to be grown, is sometimes formed for the sake of cheapness with a bottom of puddled clay and walls of brick set in hydraulic mortar with a backing of the same material, but in all cases where the basin is not of extraordinary size, it is far better to build the whole in cement concrete carefully finished to a smooth surface and with all internal angles rounded off so as to facilitate cleaning out. Whichever method is used, the inside of the pond should always be constructed so that ice may rise as it expands in freezing, otherwise it will burst the rim or carry away the coping. All that is necessary is to finish the sides with a slope or batter, instead of making them vertical and to give them a smooth surface.

The plumbing, consisting of the water supply with its stop cocks, the overflow and the means of emptying the basin, should receive special care, as there is nothing so annoying and so absurd as a fountain which will not play and one which needs continual tinkering, with the consequent damage to paths and lawns in digging up pipes. It is impossible to lay down any rules for the size of the supply pipe as it depends on so many factors which will vary in each case, but where there is any doubt of the pressure or "head" on the water being adequate, much may be done by making it extra large, avoiding unnecessary bends, and making those which cannot be avoided as easy as possible. Whatever taps are necessary to individual jets, there should be one main cock under a small hinged cast iron cover quite clear of the fountain itself. This is far better than a sunk tap which must be reached with a long key which is apt to be either left about in an untidy manner or mislaid altogether. Where there is only one tap, the cover need not be more than four inches square, but where the supply divides and each branch has separate taps for controlling different portions of the display, the main cocks and all branch taps can be collected in one trap. There should also be another tap as near the source of supply as possible, to allow of the pipe being kept

Kerbs.

FIG. 245.

*Plumber's
work for
fountains.*

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empty during the worst months of the year when the fountain will not be required, thus avoiding the possibility of damage by frost, and where the water is obtained from a stream or pond, the intake should be from a small settling tank with a copper-wire grid between the inlet and the mouth of the supply pipe. This may be made quite cheaply by the local carpenter in the form of a strong pitchpine box tarred inside and out, and buried in the ground level with the lid, which should be hung on strong brass hinges to withstand rust. For the same reason, all the taps should be of gun-metal, and if the pressure is at all great, of the screw-down type.

The overflow should of course be of a larger diameter than the supply pipe and should be provided with a strainer to prevent leaves and other *débris*, which blow into the basin, from choking it. It should be so placed as to keep the water level as high as possible so that a long stretch of bare wall or concrete does not show, as in such case the basin will look too much like a tank or well. Means of emptying the pond for cleaning out should be provided by a pipe communicating with the overflow. In the case of small fountains it may be plugged by an ordinary plumber's bath waste with its brass plug, but in the larger basins, Pulham's patent plug, which consists of a stone-ware ball dropped into the open end of the pipe, may be used. Needless to say, all connections should be accessibly arranged in case repair becomes necessary.

Wall
fountains.

Wall fountains form a distinct class in themselves, and it is fortunate that, in their case, we have not to deplore the dearth of beautiful designs referred to above in speaking of sculptured fountains surrounded by a pond. Hardly a single year passes without one or more exquisitely proportioned models for this class of fountain being exhibited at Burlington House, and indeed it would seem to be an object for the exercise of

artistic genius which particularly appeals to sculptors of note. The worst that can be said of these designs is that they seem a little lacking in originality of motif, as they generally consist of a nude or classically draped female figure poised above a shell-like tazza. It is the more surprising, therefore, that one so seldom comes across one of these beautiful adjuncts in the average garden, especially when one reflects that they are equally delightful in the largest schemes and the smallest garden plots and cost so little for the tiny stream which is sufficient to give them their *raison d'être*.

In the large pleasure, of course, they would, unless on a large scale, form only a subsidiary feature, giving point and interest to an otherwise blank wall facing the end of an important walk, or adding the cool influence of falling water to a shady retreat. In small gardens, however, they may form the central ornament up to which everything else leads more or less, which does not mean that the little domain should have only one interest or be devoid of that charm which

FIG. 246.—WALL FOUNTAIN AT FLORENCE, BY DONATELLO OR VERROCCHIO.

only contrast and a certain complexity can give.

For large wall fountains, such as are only occasionally required, there is abundant precedent in the ancient "lavatories" attached to monastic institutions in Italy, while,

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for smaller ones, most of the larger Continental towns can provide material for adaptation, such as that shown in illustration No. 246. Illustration No. 247 shows one essentially English in its treatment.

Before leaving the subject of fountains, a practical point of prime importance applying equally to every kind must be touched upon. This is the paramount necessity of a constant and ample supply

*Water
supply for
fountains.*

of water at a cheap enough rate to allow of its regular use. To insist urgently on such an obvious point would seem somewhat unnecessary, if practical observation did not show that fountains as garden ornaments have become completely discredited in the minds of many people, from the numbers of failures from this cause which disfigure the pleasaunces of this country. The fountain should play joyously, not weep sadly, and nothing can be more distressing to the true lover of gardens than a dusty fountain devoid of water or one which feebly trickles, the very picture of ineptitude and incapacity. No amount of fine sculpture or effective setting can justify a fountain which can only be used on very special occasions and then suggests nothing so vividly to the mind

of the owner as a vision of water bills to come.

In this connection Evelyn's description of the fountain at Hampton Court comes to mind. "In ye garden is a real noble fountain with syrens, statues, etc., cast in copper by Farnelli, but no plenty of water." Constancy of supply is of far more importance than a large amount or a heavy pressure, though all these factors will have their influence on the form the fountain will take. If it is known beforehand that, at certain seasons, the supply will be very slight, while at others there will be more water than can be conveniently used, the fountain may be so designed that it will appear complete with one small jet, while other displays may be available for use when possible. There may even

FIG. 247.—WALL FOUNTAIN IN GRANITE.

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be two separate sources of supply. Thus in the case of the fountain shown in illustration No. 242 and already referred to, the central jet might be fed by the smaller and reliable supply, while a bubble fountain, to be used only when the larger and more fickle stream is available, might be arranged under the arched cavity at the base of the central shaft. It is possible to imagine a case in which a third and possibly expensive supply were added for occasional use, when the same fountain might be fitted with jets rising on all sides from near the rim of the lower basin and sprouting inwards into the higher basin after the manner of Carpeaux's fountain of the Zodiac. Thus, whether one, two or three sources of supply were in use, the fountain would have the appearance of being fully furnished and complete.

If aquatic plants are to be grown in a fountain basin, it should be made large enough to allow of their being placed away from the main streams of falling water, or they will be in danger of being beaten down by it, and if gold or silver carp are to swim in it, some shelter from the light should be provided either in the form of plants or loose stones. It is not generally known that they cannot close their eyes.

The dipping well for use in the kitchen garden has the special advantage of fulfilling a utilitarian purpose as well as allowing of artistic treatment. As every gardener knows, icy-cold water drawn direct from the supply pipe, should not be used for watering

purposes, but it should be exposed to the air for a time in order that it may take the temperature of the surrounding atmosphere before being poured or syringed over the plants, and this can best be accomplished by the provision of a dipping well in a central position in the kitchen garden. How the well and its surroundings may be composed into one of the most attractive features in the domain is described in Chapter XV., and it is sufficient here to describe its construction.

The most effective dipping wells are, as a rule, those which are formed from old well-heads imported from Italy and which were originally constructed by hollowing out the

capital of a pillar from a ruined temple dedicated to one of the deities of the Roman pantheon. Sometimes they have been provided with a wrought-iron over-head arrangement from which to suspend the rope and bucket, and this may with advantage be retained as an ornamental feature. Another very useful form consists of a hexagonal or octagonal brick structure with a plain coping made from stone flags. From the nature of its position in the more utilitarian portion of the grounds, great elaboration in its design would be entirely out of place.

Dipping wells should, of course, be fitted with a water supply, and where it can be contrived so as to be out of sight and safe from damage from cans or buckets, a ball tap to keep the water-level constant should be added.

Architecturally treated cascades can only be successfully formed where the character of the accompanying architecture demands magnificence. As before stated, opportunities for work of this character on the largest scale will only seldom occur in this country, and it is difficult to conceive any circumstances which would allow of anything on the scale of the cascades at the Villa d'Este. This is not only the result of a national conservatism which makes any superlative effort after grandeur appear forced and unnatural, but also of climatic conditions. In hot and dry countries, such as Italy or India, such features appear indigenous, but here, where only one or two months in the

*Dipping
wells.*

FIG. 248.

Cascades

THE DECORATIVE TREATMENT OF WATER.

year are hot enough to justify their creation, they appear to be the result of an exaggerated effort. There is, however, no reason for the very marked dearth of architectural cascades on a simple scale, unless it be the difficulty which would often be experienced in obtaining a sufficiently large supply of water at a great enough elevation above the residence, which is usually built on a hillside with the stream in the hollow below. While this may prevent the formation of a large stepped cascade, however, some such arrangement as that shown in illustration No. 249, should be possible in many situations. This gives the lowest of a series of tazzae which it is proposed to construct on the hillside, each with its outlet spouting into the one below, an arrangement which would not demand a large volume of water. The one shown is designed for and executed in granite for erection in the neighbourhood of Dartmoor, thus emphasizing a local characteristic, but in other districts, where the native material would allow of a lighter treatment, a more elaborate and lighter "motif" might be adopted.

FIG. 249.—WALL FOUNTAIN (FIRST OF A SERIES) AT HANNAFORD, DEVONSHIRE.

The formal water lily pond is a delightful feature which is growing in popularity in this country. In illustrations Nos. 240, 248, 251 and 256, are shown examples erected in recent years from designs by the author, and it will be seen that, in almost every case, they fulfil the functions of a fountain as well as providing a large mirror for surrounding foliage or architecture. In fact the water lily pond may be considered as occupying a middle place between the fountain basin with its very restricted area of water surface on the one hand, and the large formal canal on the other, and to partake to some extent of the nature of both.

*Water lily
ponds.*

It thus follows that they form most delightful features which are adapted to gardens of very varying size and kind, and they have in addition the pre-eminent advantage of introducing to the garden whole families of plants which would otherwise be absent.

THE DECORATIVE TREATMENT OF WATER.

Their construction is very much the same as that for a large fountain basin, and whether they have a bottom of puddled clay or concrete will depend very much on local circumstances or their size and whether the aquatic plants are to be grown in pots or not. Illustration No. 248 shows a very useful shape and its main proportions.

FIG. 250.—STATUE FOR A LILY POND.

Hall, Staffordshire (Ill. No. 405), does not surround the house, but some old monastic ruins in the grounds, and the accompanying foliage, water, ruins, and ancient fish-stews together make a most delightful composition.

Wherever a stream of clear cool water flows through a garden, it may with comparatively little expense be dammed up or diverted, as shown in illustration No. 253, to

For water lilies, a depth varying from twenty to thirty-three inches is most suitable, but calla, sedges and iris must be arranged with their crowns only two or three inches under water. Illustration No. 252 shows how both classes of plants may be accommodated in a long and narrow pond by recessing the sides and keeping the recesses shallow, while in illustration No. 251 will be seen a pond, the corners of which have been roughly walled round with stones to form a shallow portion filled up with good stiff soil.

While all lily ponds must be beautiful during the Summer months when they are adorned by flowering aquatic plants, there is danger of their becoming uninteresting in the Winter when the plants are dormant, unless this drawback is guarded against by designing them so as to be interesting in themselves. It is for this reason that a piece of choice bronze or lead statuary should always be introduced somewhat in the manner of the boy and dolphin shown in the photograph of the lily pond designed by the Author for Sir William Lever, with or without the stepping stones for reaching the plants shown in the same illustration (Ill. No. 275). Another suitable subject is given in illustration No. 250).

The moats still to be found surrounding some ancient manor houses and the larger historic country seats, offer splendid opportunities for the cultivation of aquatic plants along their margins. That shown in the plan of the gardens at Little Onn

Moats.

*Bathing
ponds.*

FIG. 251.—WATER LILY POND AT ASHTON-ON-TRENT.

FIG. 252.—TINY CANAL AT ASHTON-ON-TRENT.

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form a bathing pond, and even though the pond must be fed with collected surface water supplemented by the domestic supply, facilities may be provided for those residents or guests who belong to the increasing number of persons who delight to begin the day with a vigorous cold plunge taken in the open air. A more elaborate arrangement which would in itself form a decorative adjunct to the general garden scheme, is shown in illustration No. 254, and is designed to accompany an Elizabethan mansion, while the simple hut for disrobing shown in the first example is replaced with a comfortable and

convenient dressing room. A bathing pond may often be contrived very cheaply on those rugged portions of the coast which are not suited to shore bathing by enclosing a small creek with a simple sluice to retain the tide water.

Every bathing pond should, of course, have a means of emptying, as this will be frequently necessary, or decaying vegetable matter, which inevitably collects there, will become offensive when the water is stirred up by a bather.

The large architectural ponds or canals which figured so prominently in the designs of Le Notre were never fully appreciated in this country, though there are a few examples remaining to attest their beauty and propriety, such as the well-known one at Wrest, Bedfordshire. That we have not a greater number of such beautiful sheets of

*Formal
Canals.*

FIG. 253.—A RUSTIC BATHING POND.

water is surprising and partly arises no doubt from the teachings of the early-Victorian school of Landscape Gardeners who maintained that, in no case, could a formal arrangement be beautiful. The objections urged against architectural ponds by those who affect to admire the miniature quasi-natural lakes or pools so often attempted in small gardens with such purile results, are more imaginary than real. The water in the former is as much a mirror as in the latter, while the architectural pond has the further advantage of suitability to its environment and particularly to the architecture of the house. The same art which regulates the outline of the basin or pond takes into

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account also the surroundings and character of the margins to be reflected in the water, while the reflections cast by floating clouds and the animation produced by water-fowl are shared by both alike. In cases where there is any fear of a shortage of water, practical considerations favour the formal pond, as its construction not only allows of its being made more watertight and thus economising the supply, but also makes cleaning out an easy process, a most necessary undertaking if there is the slightest doubt of the supply being strong enough to keep it clean.

The long water lagoon at Kearsney Court near Dover, of which photographs are given in illustrations Nos. 235 and 236, is a notable instance of the formation of a large sheet of ornamental water which seemed immediately to fall in with its surroundings. The large elms and other full-grown timber trees which bordered the boggy depression in which it was constructed, though not evenly spaced, or even of one kind, nevertheless give an

avenue-like effect and fall naturally into their place as part of a formal composition on a somewhat large scale. Before the work was undertaken, the stream which now feeds the canal passed underground and out of sight owing to the porous nature of

FIG. 254.—AN OPEN-AIR SWIMMING BATH.

the subsoil. This made it necessary that the whole of the bed of the canal should be covered with a layer of concrete. It is rectangular in shape with a widened centre portion. At each end is a bridge which spans the inlet or outlet and is to be extended by means of a pergola on either side to the full width of the formal water, thus screening the narrow stream above and below the canal.

Another ornamental canal is shown in illustration No. 256 and is now in course of construction on the West side of the Palace of Peace at the Hague. Here a sluggish but fairly strong stream of water passes through the grounds at a level which allows of any shape and size of formal pond most consistent with the plan of the gardens as a whole. This pond has a length of four hundred and ninety feet, with a width in the central part of eighty feet, and in the narrower canal part, of forty feet.

While most formal canals are of considerable extent, sufficiently so in many cases to allow of the effective use of Thames punts or Canadian canoes, they may be adapted to almost any size of garden and almost any position. Thus, in illustrations Nos.

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251 and 252 is shown a tiny canal which forms part of a terrace garden at Ashton-on-Trent in Derbyshire. This canal, although so small, is not without a distinctive charm of its own which this very fact gives it, and is sufficient to provide interest to this part of the garden scheme.

Where the source of supply for a formal canal is small, the most should be made of it in order to avoid any possible appearance of stagnation. In the example at Kearsney Court already referred to (Ill. No. 236), this is accomplished by arranging a small stepped cascade in connection with the bridge over the inlet, while illustration No. 249 contains suggestions for the disposal of a still smaller supply. In any case, the existence of the inlet and outlet and their positions should be marked by architectural treatment, even if it is only an effectively arranged balustrade or suitably placed vases on pedestals to act as pylons.

FIG. 255.

The construction of the formal canal may be either similar to that of the water-lily pond or it may have grass banks sloping down to the water. In the latter case, the margin should be treated as shown in the accompanying sketch (Ill. No. 255), with rough pitching at the water line to withstand the strongly-marked erosive action of ripples and wavelets and the wash from canoes and boats. The sod may be carried over the pitching down to the water. The breadth of the band of pitching will depend on whether any variation in the water level can be efficiently prevented and also on the width of the canal and amount of shelter from winds, which are both factors determining the size the

FIG. 256.—PLAN OF THE CANAL AT THE PALACE OF PEACE.
(THE COURT OF THE HAGUE TRIBUNAL.)

wavelets will attain. It will thus be seen that the breadth of the pitching will need to be much greater at the ends than at the sides, as ripples crossing the canal will not reach so great a strength as those which travel the whole length or nearly so. If the bottom is of puddled clay, it will be necessary to do the work in sections in order to prevent the clay from drying and cracking, as shown in illustration No. 257.

Whatever system of construction is adopted, the water level should be kept as high as possible, say between eighteen inches and two feet six inches below the surrounding

ground. Where the level of the supply at the inlet makes it necessary greatly to exceed the latter depth, the depressing effect which would otherwise result may be removed by making two small banks instead of one large one, and forming a path between the two, as shown in the accompanying sketch (Ill. No. 255).

So far, we have dealt with formal arrangements of water for use in the more ornamental portions of the grounds, but naturally treated streams and lakes have also their use and special charm in the more outlying portions of the domain and in the wild garden.

FIG. 257.—FORMAL CANAL UNDER CONSTRUCTION.

The landscape architect is often unjustly condemned for his natural treatment of water, his work being mistakenly associated with some of the absurd engineering feats of Capability Brown or the ridiculous miniature lakes so often squeezed into suburban gardens. Where, however, the design and construction of such sheets of water are approached in a right spirit, and the mind of the designer is imbued with a great love of Nature, and he is content not only to be led by her in designing his work, but to follow her methods as far as may be in their construction, the finest possible results may be obtained. When, as frequently happens, a pond or lake already exists, and the task is one of helping Nature to reassert herself and to attain her highest achievement, the result may be, and often is, one of the most delightful parts of the domain. Here grow to perfection plants which succeed nowhere else, ferns and lichen cover the rocks, and the sporting of fish in the pools, the diversions of the waterfowl, the ripple and sparkle of water and the waving of flags and reeds, all combine harmoniously to charm both eye and ear. A spacious sheet of water is not only invariably a welcome feature in the landscape, but under ordinary conditions furnishes boating in Summer and skating in Winter, and in these days of artificially-raised rainbow and Loch Leven trout, fishing in almost all seasons.

Lakes which entail a great expense in construction are seldom satisfactory, the best effects being almost invariably obtained where little more is required than a short dam across a valley or dell. In such a case the lake must inevitably take an outline which will exactly harmonize with its surroundings, for if the ground is gently undulating in character, the margin will take easy, flowing lines, as in illustration No. 258, whereas if the contours are bold and rugged, it will be much serrated and more in keeping with the surrounding wildness. The only adaptation essential in such cases would be that necessary to prevent the whole area of water from being seen at once, a result which is generally best attained by the formation of carefully placed and planted islands, thus giving that indefiniteness of extent and variety of prospect from different positions, which makes the Lake in Kew Gardens so charming, a result which, in this instance, is enhanced by half a century of planting, thinning, and judicious selection in the plantations and

The informal treatment of water.

Lakes.

THE DECORATIVE TREATMENT OF WATER.

FIG. 258.—THE CANAL, FOOTS CRAY PLACE.

FIG. 259.—THE LAKE, KEW GARDENS.

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pond vegetation (Ill. No. 259). Here the effect is obtained in the first instance by the outline of the lake itself, but the lake in Battersea Park, although by no means ideal in every way, shows very well how the same effect may be obtained by means of an island.

Tarn Hawes, near Coniston, is a good example of the beautiful effects which may result from simply making a dam to raise the water level and leaving the rest to Nature. By this means the late proprietor succeeded in making the present sheet of water, so well known to all frequenters of the English Lake District, where before were a series of smaller ponds and a tract of swampy ground. The effect is further heightened by the many fine plantations so effectively placed in the vicinity of the lake.

The lake in the East Park, Wolverhampton (Ill. No. 260), which is some thirteen acres in extent, illustrates the same principle, though in this case there was more spade

FIG. 260.

work, as various small hollows were united by cutting through intervening banks. It also shows how a beautiful result may be obtained under the most unpromising conditions, for it was formed from a series of spoil banks or pit mounds. The fact that there were several old pits shafts on the site, necessitated that the whole area to be covered with water should be treated with a layer of puddled clay, which in this instance was dug from the site and put through a brick makers' pugging machine, and the surface pitched with the blocks of clay as delivered from it.

The result of ignoring the natural contours and creating an artificial outline for the lake was forcibly impressed upon the writer some time ago when consulted regarding improvements to a lake upon which £3,000 had been expended with sad results. Instead of flooding the whole of a valley, a long embankment was made to enclose about half of it, with the result that the remaining half was rendered useless for anything but osier growing and was rapidly becoming offensive, and this, at least, at five times the expense

THE DECORATIVE TREATMENT OF WATER.

which would have made a sheet of water of noble proportions. The hard undulating line of the long embankment could never be softened off by suitable planting on account of the depth of the ground level behind it as well as its sodden state.

It will thus be seen that a naturally treated lake formed on the slope of a hill or anywhere but in the bottom of a hollow, where all natural lakes are found, can never be anything but a dismal failure, and, in such a position, should never be attempted; in such circumstances a formal pond is the only kind which can succeed. Nor is it a wise

policy to place an informal sheet of water within sight of a large natural lake, a broad river or the open sea. The inevitable comparison cannot fail to be odious and to the detriment of the smaller artificial sheet.

However carefully the lake itself may be formed and designed in relation to its surroundings, the ultimate effect must depend very largely on the arrangement of the foliage which is to adorn its banks. The old adage, "Plant the hills and flood the hollows" is always a safe one to follow, and if the hollows are deepened to form bays and the excavated material is used to add to the boldness of the headlands and so throw up the native foliage with which they should be crowned, the best possible result will usually be obtained. The ideal to be aimed at is clearly indicated in the photographs of

FIG. 261.—ARTIFICIAL ROCKWORK AT BALLIMORE, ARGYLESHIRE.

the Brathay Craggs on Windermere, shown in illustrations Nos. 4 and 5, and though it may not often be possible to achieve results on this scale, still the effect aimed at should be the same. From these considerations we may form the general rule that the headlands should be planted, and that in the bays the grass should slope right down to the water in a natural manner, thus giving open vistas across the lake. It should always be remembered, however, that too much foliage, especially if the supply of fresh water to the lake is small, tends to foul it.

For the higher portions of the banks, masses of Scotch fir interspersed with silver

birch may be planted with great effect, but for the lower portions, dogwood, broom, mahonia, tree ivies, laburnum or holly, are most suitable, and in any case due regard must be paid to colour in mass. For islands, masses of scarlet dogwood, willows and cut-leaved alders are suggested. Additional interest may be given to the margins by the tasteful disposition of groups of iris, lythrum, meadow-sweet, sedges, bulrushes or other sub-aquatic plants, though if the water is shallow for any distance, the natural tendency of such free-growing plants to cover the whole of the shallow area will need severely curbing, or much of the water surface may be lost under the rampant vegetation, especially in small ponds.

Additional interest and boldness may be given to the headlands by the formation of artificial rockwork escarpments such as would naturally occur in such places, but, of course, nothing in the slightest artificial in appearance should be intruded on the naturally treated area.

Naturally-treated streams also form delightful adjuncts to the wild garden or the outlying portions of the domain, in fact the former can hardly be said to be complete without at least a tiny streamlet half concealed and half revealed among masses of luxuriant native ferns.

How much can be done where a small stream is available is shown in the illustration of that at Ballimore, Argyleshire (Ill. No. 261). Standing by the water or even looking at the photograph, it is difficult to believe that, little more than a year before the photograph was taken, it flowed through a hideous conduit between rough stone walls, that the rockwork which looks so perfectly indigenous has all been placed there by the hand of man, and the finely-laminated strata even moulded out of strong cement coloured in exact imitation of the stone which forms the larger masses of rock, or that the ferns and other native plants which cover and adorn the whole have been collected from the surrounding woods and placed in position.

The other illustration of this class of work (Ill. No. 262), showing the rocky stream at Mount Stuart, Isle of Bute, which was formed for the late Marquis of Bute under the Author's supervision, originally flowed through a hollow, trodden into disagreeable mud by the feet of cattle, though there were some small pieces of natural rock in places which formed the basis of the work as illustrated. The volume of the water had been increased by the more efficient drainage of the higher ground further up the stream, thus rendering some form of protection for the banks necessary. In many cases this would have been effected at the expense of all natural beauty by clearing away the trees and stubbing the undergrowth of brambles, honeysuckle, gorse and broom, and destroying every natural charm left after the depredations of the cattle.

Instead of this, the opportunity was seized to bare the natural strata of rock, form rocky pools, and heighten the little cascades carrying the new strata by which this was achieved along the sides of the stream to protect the banks, and planting the clayey bottom of the stiller pools with iris and

Streams.

FIG. 262.

THE DECORATIVE TREATMENT OF WATER.

sedges. The banks on either side were already somewhat sparsely clothed with undergrowth under the beech trees shown in the photograph, and by the addition of many native shrubs and bushes, they were given a covering of luxuriant growth.

Both here and in the stream at Ballimore the stone used was gathered from the surrounding plantations, and where the surface was weathered or covered with moss, this was carefully preserved, with the result that the work had not that aggressive newness which usually spoils artificial rockwork until Nature has had time to reassert herself. Fissures or "pockets" of earth were also purposely formed in the rockwork, in which might be planted the ferns and wild perennials which abound on the estate.

It is wonderful what an effective stream can be made with only the tiniest flow of water if it be properly treated. There are instances where quite a satisfactory effect has been obtained where no stream at all originally existed, and the whole supply has been collected by draining pasture land at a higher level than the gardens. The secret of success is never to let the water trickle anywhere, but to arrange it in a series of large pools with falls between. The smallest fall makes a brave show compared with the same amount of water trickling or gliding over or among stones, and the pools suggest a larger supply than may be actually present.

The practical detail of most importance in the formation of artificial rockwork, where the natural stones are cemented together, or the finer strata are formed of artificial stone, and especially where the pools are lined in cement to economise a small water supply, is prevention from damage by frost. In such cases it is far the best method to place the work in the hands of a professional rock builder whose past work has shown him to possess the necessary artistic discrimination for his task, and who does not fall into the very common error of overdoing the amount of rock.

The planting of rockwork is treated of in the next chapter, which deals with the whole subject of rock gardens.

FIG. 263.—ROCK GARDEN, UNDERLEY HALL.

FIG. 264.—BOG GARDEN, UNDERLEY HALL.

CHAPTER XIII.

The subject of this chapter is one to which whole volumes might be devoted, and which, in fact, has a library of its own. Space, however, demands that we should condense into it those factors controlling the design and making of what is really, not one kind of garden, but an entirely distinct series with many subdivisions and specialized developments, each of which has its own requirements and methods of construction. It will therefore only be possible to take up the three main divisions mentioned in the title to the chapter, but in so doing we shall point the way more or less to the making of every other form of garden in which wild growth, rock and water have a place.

The spirit dominating informal gardening.

So far in our survey of the art of garden making, the mansion, as the paramount architectural feature in the composition, has dominated everything, and, because the garden is complementary to it, a more or less restrained and conventionalized aspect has been given to its various parts that they should form one composite whole, the amount of restraint or freedom in each parterre being nicely balanced in strict accordance with its relation to the dominating feature.

Now, however, everything is changed. Success depends entirely on all absence of restraint or conventionalization, and, instead of preserving an architectural continuity, we have to subordinate everything to Nature and natural surroundings. Indeed our garden, when finished, will only be successful in so far as we have achieved a generous self-effacement and allowed Nature to reign supreme. Our whole task will consist in giving her an opportunity to realize her highest and her best, a stage whereon to display her greatest powers, and, where her works have been destroyed, a chance to reassert herself. Wherever, in the finished result, artificiality is in the slightest degree apparent, or features appropriate enough in themselves are arranged so as to be incongruous, or so as to suggest a made-to-please effect, the whole will be spoiled, for Nature is never obtrusive in her handiwork.

Nevertheless, we must not run to the opposite extreme and suppose that, in the wild garden, we have the negation of art and only the result of a fortuitous chance, for, as Pope so truly said:—

“All Nature is but art unknown to thee,
All chance, direction which thou canst not see.”

and so we shall find as we proceed with our subject that, even where Nature already holds sway, there are many things which we may do to help her to excel and enhance the loveliness of all she touches.

There are, of course, scenes of such transcendent beauty and perfection that to

ROCK, WALL AND BOG GARDENS.

interfere would be the greatest presumption, as, for instance, in a case in the English Lake District in which the writer was consulted, where a mountain torrent fell in a succession of cataracts down a deep and precipitous gorge, the sides of which consisted of cliffs of virgin rock clothed in a wild profusion of native ferns and other shade-loving plants. In such cases, all that can be done is to conserve with jealous care that which exists and guard it from the intrusion of artificially incompatible features or the encroachment of commonplace utilitaria; but such instances are rare indeed and, in the vast majority of cases, Nature is not found at her best on the site of a new garden, which is oftener reclaimed from agricultural uses, which, apart from the hedgerows, have little in common with her.

Here much may be done to aid her work, and thus co-partnership with Nature at her best must give to this form of garden-making a great and peculiar fascination for those who love her and are filled with a sympathetic understanding of her excellences. Prim parterres, set in smooth green lawns, balustraded terraces giving base and continuity to the architectural features, sculptured fountains throwing sparkling water from basin to basin and water-lily tanks with unruffled surface mirroring the light of heaven, we must have if our garden is to be complete; but these alone can never satisfy the all-round garden lover. He longs also for the free and the wild, for a seclusion where flowers and plants may grow in rank luxuriance and riot, or where the mossy boulders lie piled in romantic abandon, or combine to form a cool grotto overgrown with ferns, or rich brown bog or bubbling spring lies all but concealed in the profuse growth it has engendered. The spirit which filled John Gerard the Surgeon in the sixteenth century with a love for the solace of the quiet country ways, and caused Gilbert White, a hundred years ago, to write of the two rocky hollow lanes of Selborne which delight the naturalist "with their various botany," still lives among us and is ever growing. The chequered sunlight, filtering down through overarching foliage and covering the green carpet with a scintillating filigree pattern deep down along the grassy way between tall hedges of hazel and dogwood, whose supremacy is disputed by clambering tangles of wild clematis, dog rose and sweetest-scented honeysuckle, of deep, dark mysterious shade under over-hanging rocks or masses of fern or brake, must always make a strong appeal to all who love a garden and who have learnt to understand something of Nature's perfection and to love her free profusion.

*Site of the
wild
garden.*

From the very nature of the wild garden it follows that it will usually be placed either out of sight of the house or at some distance from it in order that there may be no clashing between the natural and the artificial. In most instances, too, it will occupy a secluded dell, especially where a bog garden or water in some form is a feature of its decoration, or where ferns, mosses and lichens are to grow in rich profusion. In other instances, it will occupy an open hillside, especially where it takes the form of an Alpine garden, or again the necessity for protecting a steep bank by the side of a path may suggest its treatment with rockwork or its conversion into a wall garden.

In several instances in the Author's practice, especially when called in to remodel old gardens, he has found a natural stream flowing through the grounds which has been built in between hideous walls or even enclosed in a culvert. A notable case of this kind occurred in Pittencrieff Glen, at Dunfermline, presented to the city by Mr. Andrew Carnegie, which was all the more remarkable as natural rock abounded in the bottom and sides of the stream and required little more than uncovering and planting to make a most charming feature. Another instance, already referred to, occurred at Ballimore, in Argyleshire, and how much can be done in a very short time is shown in the illustration (Ill. No. 261), from which it would be difficult to imagine that rather over a year before the photograph was taken the stream ran between stone walls, and all the romantically waterworn rocks have been planted so luxuriantly in that period of time.

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The artificial rockwork seen in this illustration must not be confounded with the ordinary rockery made by setting all sorts of stones unrestfully on end on a mound of earth. The latter is one of the least to be commended of the mid-Victorian garden adjuncts, which, when made of white spar or some equally exotic-looking stone or even broken crockery, cannot but have a most unsatisfactory and unæsthetic effect. The only form of artificial rockwork which is to be commended or which can be permanently satisfactory is that made by skilled workmen who have had a special training for the work, and which is an exact reproduction of the indigenous virgin rock with all its strata and laminae faithfully copied, and even this should be used with restraint and great caution, for the tendency is almost always to over-do it and make it very obtrusive. The same or an even better effect can often be obtained with one or two strata jutting out of the soil which suggest hidden masses below than when great barriers of rock are

*Artificial
rockwork.*

FIG. 265.—ALPINE GARDEN ON THE SLATE ROCK OF THE LAKE DISTRICT.

constructed. Where too much is attempted, too, with the idea of getting the most for the money expended, mere size is sometimes obtained at the expense of attention to detail and balanced proportion. In such cases, it would have been far better to have been content with less than to have built so much in a manner which cannot fail to look artificial. Care should of course be taken that the material used does not clash with the local geological character. Thus freestone rocks should not be built up in a chalk district and *vice-versâ*. In those few cases where there is any choice, it may be said that ferns prefer limestone, while American woody shrubs will die on it, though they will flourish on sandstone, which is the rock-builder's favourite material.

It may be objected that, after all, the rockwork is artificial, and therefore a sham, and so cannot be pleasing to the truly artistically trained mind and eye. This is not so, however, for, if a thing may be described as a sham, it must be an inferior substitute

ROCK, WALL AND BOG GARDENS.

*Objections
to artificial
rockwork
considered.*

for that which it copies, whereas artificial rockwork, if properly executed, is equal in æsthetic value to native rock. Experience proves that this is the case, for, when one knows that the bold masses of rock in the little dell or dingle have been placed there by hand, its laminæ produced by the use of a toothed tool and the gurgling spring over which the ferns bend so lovingly is fed by hidden pipes, one's admiration for the picture of Nature at her best which is put before us is not lessened, but, on the other hand, one rather feels that sympathetic admiration for work which shows such artistic appreciation of Nature on the part of its creator which we experience in examining any other work of art which is good and worthy the name.

This is the real test, which may be applied equally to any other form of garden decoration. Does familiarity breed appreciation or contempt? Where there is real deception, as in the case of the sham ruins, churches, and other stage scenery which were so extensively used a hundred years ago, immediately the fraud is discovered, they cease to please and convey to the mind a sense of the ludicrous.

*Natural
rock
gardens.*

Nevertheless, however carefully it may be done, artificial rockwork can never be quite as satisfactory as the original virgin rock. Where this can be obtained by the removal of a few feet of soil, the best of all rock gardens may be produced at very little expense, though even here, in some cases, it may need a little aid from the rock builder in the way of providing for rough, rock-hewn steps and the provision of rocky pools where the natural formation would not allow of these. In illustration No. 265 is shown an Alpine garden which is most effective, and which has been constructed merely by baring the natural slate-rock of the English Lake District.

Quarries.

He who in his domain possesses an old disused quarry is fortunate indeed. Here he has the groundwork for a rock garden of most exceptional possibilities, especially if, as so often happens, there is a pool of water in the bottom. The aim would then be to have a tiny streamlet tumbling over the edge of the quarry into the pool below and, if possible, at a point where there is a recess in the face of the rock, so that the combination of moisture and shade may encourage the growth of ferns and mosses. Rough hewed steps will perhaps be possible winding up the face or one flank of the escarpment, in which case, favourable sites may possibly be found for every class of rock or water plant, Alpines on the face of the rock, other plants in the fissures of the rough-hewn steps, ferns in the hollows, flags, reeds and rushes in the shallow portions of the pool, with water-lilies and other aquatic plants in the deeper parts, while, in a sunny position on its margin, a small swamp garden may be contrived in which marsh marigolds, bachelor's button, gunnera, saxifraga peltata, and the marsh-loving ranunculi may grow to perfection.

*Moisture-
retaining
hollows.*

Where no quarry exists, a moisture-retaining hollow may easily be contrived in a suitable spot merely by lowering the level of the ground by excavation. There will be very few gardens where, if this is done, an ideal site for a swamp pool will not be obtained. Then, by the formation of rough steps, after the manner of those shown in illustration No. 265, and the addition of a little rockwork, most charming effects may be produced. This having been done, the rest is more or less a case of careful planting and upkeep, though a good deal will depend on the nature of the material of which the garden is formed. The true bog garden is, of course, composed of black bog earth and peat, but often one has to be content with clay, or some other impermeable subsoil, overlaid with leaf mould, or such material as may be available, and this will have a direct influence in determining what we shall plant.

*Bog
gardens.*

The great charm of the bog garden is its appearance of luxuriant, rampant, and almost tropical growth and the brilliant greens of its foliage, ranging from long-stemmed moss of almost pure lemon-yellow, down to the grey-greens of the iris, against which brown reeds stand up in strong colour relief. It therefore follows that we must plant

nothing which will not do exceedingly well, especially that anything which appears in the slightest degree hyper-cultivated or of the nature of a garden specimen plant will clash with the general scheme. There should be a huge mass, the bigger the better, of either the common English yellow flag or the German iris with its purple flower, which has been naturalized in this country, and is now quite at home. Those persons who have only seen this plant under the somewhat uncongenial conditions of the ordinary mixed border can have no idea of the beauty of broad masses waving in the breeze. Another consideration which makes for foliage effects in the bog garden is the large scale of the leaves and rampant growth of most water-loving or aquatic plants. Gunnera, iris and nymphaea may be quoted as typical examples, and, in Nature, one never sees them mixed up indiscriminately, so that, in the bog garden, each should be given a congenial place in the scheme, and be kept well within bounds so as not to displace other kinds. It is a great mistake, however, to try to plant too many sorts in one garden, unless it is big enough to allow of certain varieties being placed where they cannot all be seen at once. Reference to any of the illustrations in this work which show bog plants will prove that the best effects are obtained by careful grouping of a few kinds which are of a class to harmonize with their surroundings (Ill. Nos. 259 and 264).

All such gardens but the very smallest will need the help of a background of such moisture-loving trees as willows and alders. There are literally dozens of native or naturalized varieties of the former which are all useful, and their catkins, which are the very first harbingers of Spring, make them additionally welcome. Whether they shall be pollarded or left to grow naturally will depend on circumstances, and especially whether they are throwing too much shade over the whole garden. The aim should be to have it so contrived that part is in shade, a portion in partial sun, and another in full sun.

Where no stream of water exists, enough for the decoration of such an arrangement may often be obtained from the overflow of a fountain placed in the more ornamental portions of the grounds, or by draining pasture or other land at a higher level than the garden, when a little dripping well or bubbling spring may be contrived, and the cool sound of falling water be added to the other delights of the place. *Streams.*

We may, of course, be troubled with too much water. In such cases, to prevent aquatic plants from being washed away, large deep pools should be constructed, in the backwaters of which still places will be found wherein to arrange the vegetation. The most difficult case of all is where the supply varies very much, being now a rushing torrent and, at another time, almost drying up. This may necessitate the formation of a weir connecting with a culvert, which may have its opening at such a level as automatically to relieve the water garden of the surplus when the stream exceeds a given flow. Needless to say, such an arrangement should be kept out of sight.

Grass, either shelving down into the water or ending in a broken bank on its margin will form a part of all bog gardens. In one case, the wildness of the other portions will demand that it shall be in rough tussocks with rushes growing out of it, while in another, it should be the velvet carpet of the English meadow. In either case, primroses, cowslip, oxlip, bird's eye, snowdrop, violets, lilies-of-the-valley and, most charming of all, the blue forget-me-not, will all be found congenial positions where they may grow. The crocus, while it will grow well in grass, is a little too showy for the wild garden, and is better kept for the lawns near the house. As a rule, a rich peaty loam which retains the damp will give a rank grass, while a very light, almost pure sand will sustain only dwarf close-growing sorts, which will not form tussocks. That portion of the greensward which is close to the water, especially where there is a more or less steep bank, should be turfed, not sown, and the turf pegged into the bank by thrusting through it sharpened stakes about nine inches to a foot long, and three

ROCK, WALL AND BOG GARDENS.

quarters of an inch to an inch in diameter. By the time these have rotted away, the turf will be firmly established.

Grottos.

In certain cases, in order to obtain a proper gradient for a garden path, it may need excavating several feet at one point. By making the excavation a little wider in certain parts, we may arrange such a garden as that just described under the happiest circumstances. In such schemes, little caves and grottos are delightful when well arranged, and provide an opportunity for the cultivation of many tiny ferns and beautiful mosses and lichens which will not thrive elsewhere, except on the walls of old wells in country districts. It is in these features, however, that failure to make the artificial rockwork completely satisfactory is most often apparent. It is so difficult to avoid any suggestion of a built-up arch or lintel over the opening, and to make the interior look as though wrought out of the solid rock by the action of the elements, as in the case of a natural cave. Limestone lends itself most naturally to this class of work, as it is in this rock

FIG. 266.—WALL GARDEN AT WOOD, DEVONSHIRE.

that nine-tenths of the larger natural caves are found. Sandstone does not usually provide deep caves, and, in this material, deep, water-worn clefts overhung by a boldly-projecting stratum look more in keeping than a regular cave-chamber. The grotto-work of the Georgian garden, a little cave studded all over its interior surface with sea shells, little mirrors or coloured glass is a childish affectation, and quite unsuited to the wild garden. A naturally treated grotto of limestone, in a limestone district, with its stalactites and dripping well, is not, of course, open to the same objection.

Wall gardens.

In other cases where excavation has been necessary, a wall garden may be the better method, especially on a path subject to much traffic, or where there is no room to expand it into a rocky glen. In this case, instead of artificial rockwork, the banks will be kept back by walls of large boulders or rough-hewn stones, so built that plants may be

inserted in the interstices. Illustration No. 266 shows such a wall-garden. Its construction needs special care and thoroughness, as, by attention to the needs of the plants with which it is to be graced, during the process of building, much better results can be obtained. The varying habits of different plants will also need providing for. One may

FIG. 267.

have barely more than a surface hold of the wall, while another will die unless its roots can find their way deep into the bank at the back of the stones, where there will always be coolness and moisture, even in the hottest weather. In building an ordinary wall, however rough, everything is done to keep the interior as dry as possible, but here we must aim at the reverse, and invite rain to trickle into the spaces between the stones. This is done by making the outer surface of the wall slope back against the bank which it supports, and the upper surfaces of individual stones also to slope inwards, as in the section given (Ill. No. 267).

The process of building such a wall will be somewhat as follows:—The ground having been

excavated not only sufficiently to take the wall itself, but also a backing of garden loam, a trench the depth of one course of stones is dug as a foundation. For this, large flat stones will be used, and placed as evenly as possible and, on them, the upper courses will be built. No one who has not tried will realize the difficulty of avoiding any stiffness in the arrangement of the stones and the pockets of soil for the plants. The builder must have the ultimate result, when the whole is completed and the plants are fully grown, clearly outlined in his mind's eye, or not only will it be patchy, but drooping varieties may be so placed as to hang over and choke smaller things, and others which look best in large masses may not be given sufficient room.

The best way is to build the plants in as the wall proceeds, using good loam with a little light manure, much as the mason would use mortar, except that a good mass must be placed at the back of the wall between it and the clay, or whatever the local subsoil consists of. The stones used should, of course, be indigenous to the district, or the whole will have a very artificial appearance. As in every other form of planting, the great key to success is to plant in masses and so avoid giving the wall an appearance of being "stuck about" with a patchy assortment of little weedy plants. Such profuse-flowering things as *cerastium* may be given two or three square yards of wall-space to cover almost entirely, with the happiest results. Where the wall is fairly high, small things may fill the crevices near the top, and below, such shrubs as *Cotoneaster macrophylla*, *C. Simmonsi*, *Clematis montana* and others of the kind will grow at its base and climb over it.

Another important point to remember in building the wall is to provide "throughs" to bind it to the bank behind. These are extra long stones built into the wall so that they may reach back into the bank and bind the former to it.

After the wall is completed, with its plants all built in as described, it will, of course, be necessary to renew them from the surface, and also to provide for the annual subjects. This is best done by rolling the seeds into a little ball of earth and inserting them into the chinks between the stones.

Whether it skirts a wall garden or passes through a rocky dell, the pathway in this class of garden should be roughly paved with flat stones of the same kind that is used for the rest of the work. No attempt should be made to square these stones, but the

Crazy paving.

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best should be made of them in their rough state. The result will be what is sometimes called "crazy" paving, and it will possess a large number of little cracks which will accommodate small rock plants. The steps will be treated in the same way and, when the whole is planted, they will add very much to the effect of the garden (Ill. No. 268).

FIG. 268.—STEPS IN THE WALL GARDEN.

Usually, however, when paths and steps are planted, sooner or later the planting is overdone, and a very untidy effect results. It should never be lost sight of that they are intended for walking upon, and the planting should be kept quite subsidiary to this first and greatest requirement. This will best be done by keeping the centre quite clear and confining the planting to the sides, corners and the risers of the steps. The planted paving is extremely useful in allowing of the fuller use of annuals grown from seed, as the seeds can be scattered here so much more

successfully than on the face of a wall.

The real æsthetic difference between the wall garden and the rock garden is that the first is confessedly an attempt to beautify a utilitarian feature as a wall must always be, whether erected for the shelter it gives or to retain an earth bank, while the rockwork, except for such adjuncts as stepping stones (Ill. No. 269), is copied from Nature as faithfully as possible.

Where, as so often seems to be the case, this difference is not realized, and the wall looks rather like an attempt to imitate a natural rock, or the rockwork is obviously built, the whole result is spoiled and the work looks purile and affected.

There is again this difference, that the rock garden, with its direct portrayal of Nature, demands that it be planted with shrubs, ferns and flowers that will appear indigenous. Anything pronouncedly exotic will clash most forcibly with the general sentiment of the whole scheme, such as yuccas, cacti or tropical grasses, though one often sees the last of these in such positions, showing how little this is realized.

This consideration points to the real function of the slightly more conventionalized wall garden. In planting it we are bound by no such limitations, and almost anything may be used so long as there is not too great a mixture, for even here we shall obtain a better effect by the exercise of a little care in selecting the plants so that, while there is an avoidance of monotony on the one hand, we have not the appearance of an untidy mixture on the other.

*Alpine
gardens.*

The one exception which I would make to this rule is when the whole of the rock garden is given up to one particular class of plants, when the rockwork becomes by evident and tacit consent merely the best available background for the class of shrubs to be grown. Thus, in the case of the Alpine garden, it is impossible to ape the glories of the Alps, and so reproduce the conditions under which these attractive little plants have their natural habitat, and the rockwork forms the most suitable background available. Still, the writer is inclined to think that the most successful Alpine gardens from the point of view of collective effect are those in which the background consists either of virgin rock, or a rough built wall which, being to hand in the first instance, have obviously been adopted for that reason rather than a rock garden specially made for

their accommodation, which may invite invidious comparisons with the native surroundings of the plants.

Generally speaking, however, the charm of the Alpine garden is in its details, in the care and nurture of individual plants, and the study of the conditions under which they thrive; for, notwithstanding all that has been said of the impossibility of reproducing those conditions on the æsthetic side, on the imitation, as nearly as possible, of the soil and aspect with which these plants favour, the whole effect will depend. This will involve some knowledge of the geological distribution of the particular genus, for though most of these little plants are fairly tolerant of unsuitable rock material, the best results can never be obtained unless the grower understands which of them belong to the granite, the limestone, and the sandstone formations.

Although those persons whose preferences lead them to look with favour only on vivid masses of rampant colour such as we endeavour to obtain in the herbaceous borders, will look with contempt on the Alpine garden, it is nevertheless one of the most delightful as well as the most difficult branches of the horticulturalist's art, and the very fact that it requires infinite patience and considerable study of the needs and preferences of individual plants makes it particularly attractive to the person who loves a garden. Of course the attempt to rear too many of the most delicate and difficult varieties will spoil the general appearance entirely, and, while a few may be attempted, the more robust should predominate in order to give the necessary effect of more vigorous growth.

In constructing the Alpine garden, the main thing is to remember that a light sandy soil on a dry foundation is necessary. Nevertheless, the soil must not be too sparse, and behind the rocks and stones, or between the crevices of the virgin rock must be cool depths of sandy loam if the plants are to survive a hot summer. In the case of an artificial garden, by which is meant one not formed on

natural rocks, the soil should be excavated for a depth of about two feet throughout the entire area, and the bottom be filled up with dry hard material, such as brickbats and clinkers, to a depth of nine inches in order to give perfect drainage. If the area is at all restricted this will best be done by overhand trenching, as described in the chapter on kitchen gardens, and the soil should be well screened and the flints or stones placed among the rough material. On this can be placed the rocks and soil, the latter enriched with light manure if at all poor, and mixed with sand if heavy or clayey. The finished garden may be of any extent, according to the space available and the amount of money it is desired to spend on construction and upkeep. In any case, sufficient of the roughly paved paths and steps to allow of every part being reached and examined at close quarters will be necessary. The provision of a water supply is also of importance, as the garden will need watering in hot weather.

There is, however, another form of wall garden besides that which has for its foundation a specially-built wall of large blocks. In most old domains, and in nearly all that are being re-formed from farmsteads, there are walls of the local building material,

Old walls.

FIG. 269.—STEPPING STONES IN THE ROCK GARDEN.

ROCK, WALL AND BOG GARDENS.

be it stone or brick, which are already most artistic, and need only the addition of a few homely wall plants, such as stonecrop, roof flax, London pride, antirrhinum, wall-flower, fumitory and roof leek to make them doubly so, especially if some of the large free-growing cabbage roses can be trained over the coping. Such simple, old-fashioned flowers seem to harmonize better with old walls which do not form a part of the main gardens far better than the newer varieties; but, even with them, care should be taken not to overdo it, as old, weather-stained walls are beautiful in themselves, and should not be so fully planted up as to hide their weather-beaten surfaces. Nor should too many varieties be used. Old black slate walls in the English Lake District, which are so beautiful as to attract the attention of every visitor who sees them, usually only boast two varieties of simple fern, and two or three of moss, and yet provide an object lesson in the effectiveness of the simplest treatment, Nature pointing a way for us to follow in our wall planting.

Where a brick or stone wall is being built specially for use as a wall garden, mortar made with sand, not ashes, should be used and, of course, if there is any suspicion that the sand is salt, it should be washed. To slope back the face of an independent wall sufficiently to encourage the rain to soak in between the joints, as in building a retaining wall, is not usually possible, and in this case the best way is to have projecting courses, as shown in the accompanying sketch (Ill. No. 272). Where the coping is above the eye from every point of view so that its upper surface cannot be seen, holes may be made in it as shown in illustration No. 271, so that they may be filled with soil and a larger range of plants may be placed there where their trailing branches will hang over the wall.

Where the area of a garden is so restricted that it is impossible to devote any

FIG. 270.

part of it exclusively to rock plants, these may still be grown very effectively by arranging a boulder-built edging to retain the piled up earth on an herbaceous border. Not only does the raising of the border give the flowers it contains more prominence but it will tend to keep the plants growing in the fissures between the boulders moist and so a double advantage is gained.

Illustration No. 270 shows how this may be done. As there can obviously be no attempt at imitating natural rock, it is built in two regular tiers, and in order to prevent an appearance of a flight of steps or a monotonous row of stones, large "throughs" are introduced which also give

shelter to small and tender plants.

*What to
plant.*

In deciding what to plant in our rock or wall gardens, we are confronted with *un embarras de choix*, for there is an enormous range of material upon which to draw. The best way is for the beginner to start with a few of the common sorts which will succeed well, and then take note of and add others as he comes across them if they appeal to him and appear suitable to the position they are to occupy. Preference should always be given to native varieties, and no better advice could be given than to stroll through pastoral country and note the common harts-tongue fern for a moist position, the three main varieties of tree fern for shade, the tall foxglove, the honeysuckle, of which two kinds will be noticed, the harebell, the parsley fern, and many others which thrive on walls and rocks, and use these in positions as like those in which they are found in nature as possible.

Of course one great requirement to be fulfilled is a proper succession of effects throughout the year, and the writer always feels that the rock garden is one of the very best places for a Winter display. There are so many things, like *Cratægus Lelandi*, *Cotoneaster macrophylla*, *C. Simonsi*, which love a rock or wall to trail over, and are covered in the Winter with brightly coloured berries, which contrast strongly with their dark olive-green leaves, which are evergreen. Then for flowers, we have the Christmas rose, *chimonanthus*, the Winter jasmine and others. The last of these is very useful indeed, as it has bright green stems as well as yellow flowers to give colour to the rock at this dull time of the year. Then as the season advances we should arrange for a fine show of snowdrops, daffodils and other Spring bulbous plants, which will come up year after year without attention, and all the other Spring flowers which are so charming in nature, such as the primrose. The flowering currant (*Ribes sanguineum*) is very useful too in very early Spring, as it is of a larger size and a profuse bloomer, and the hedge mustard, of which the two or three commonest varieties are all worth planting, should be included. Thus the garden may be attractive at the dullest periods of the year, and until the regular Summer season commences, to be followed by the autumn-flowering species.

Plants for special positions will also be needed. Thus the foxglove is very useful on the soil at the foot of a wall on its North and shaded side, as is also the roumelia (*Haberlea Ramondia*) where not too damp, or the giant parsley, the rosette mullein (*Ramondia pyrenaica*), a pretty little Alpine plant which may be grown from seed, and, of course, nearly all kinds of ferns will be useful in such a position. These last will also be employed in any damp situation on the rockwork, while, under the opposite conditions, on or in the crevices of a hot dry wall, wallflowers, *Campanula pyramidalis* (a form of Canterbury bell), and the sunrose (*Helianthus*), with masses of rambler and Dorothy Perkins roses, with such things as roof leek and London pride will make a good groundwork for filling in from time to time.

Nearly every nurseryman's catalogue contains a list of plants specially chosen for their suitability for the bog garden, and, if the advice previously given is borne in mind, to plant only a few native or thoroughly naturalized varieties in large masses, the result cannot but be pleasing. A suitable selection

for most positions could be made of those things, such as gunnera and flags, which have already been mentioned, with a few others to give added colour, such as the large double marsh marigold (*Caltha palustris monstrosa* fl. pl.), three or four varieties of orange globe (*Trollius*), and others of a similar kind.

It is with the greatest regret that the Author is compelled, by the exigencies of

FIG. 271.

FIG. 272.—WALL WITH PROJECTING COURSES TO INVITE RAIN TO ENTER.

ROCK, WALL AND BOG GARDENS.

*Specialized
wild
gardens.*

space, to turn from this delightful subject without saying something of all those specialized branches of wild gardening which are of such absorbing interest. The Alpine garden has been mentioned, but there are many others, such as the iris garden, the spring bulb garden, which is usually a woodland glade the grass of which is studded with all sorts of spring flowers, as in illustration No. 273, the fernery, the little garden devoted to

FIG. 273.—WILD GARDEN, FOOTS CRAY PLACE, KENT.

insectivorous plants, the bamboo garden, and so on. The work of designing all these and many others is, however, very similar to those discussed, and it is hoped that a perusal of this chapter will enable the garden designer to grasp the principle underlying the arrangement of any of them.

A BOULDER-BUILT WALL

FIG. 274 —CONSERVATORY, WEST PARK, WOLVERHAMPTON.

FIG. 275.—CONSERVATORY AT "THE HILL," HAMPSTEAD.

CHAPTER XIV.

There is perhaps no detail of domestic architecture which calls for so much care in its design and proportions as a conservatory. Whether it is attached immediately to the residence or is placed separately and reached by a glass corridor, it is a feature which may, in the hands of a capable architect, be a delight to the eye as well as forming a most useful and pleasant adjunct to the mansion. Yet, if one may be allowed to judge from the conservatories usually erected, even in conjunction with architecture of real merit, it would seem that few people realize that intelligent design can be applied to such structures, and that the only means of rendering them presentable does not consist in the mistaken application of spidery cast-iron ridging and crudely assorted panes of coloured glass. All that is necessary to prove the contrary is to compare such buildings with the delightful orangeries and conservatories attached to some of the larger Georgian mansions, such as the conservatory at Belton House, Grantham, with its severely plain but exquisitely balanced treatment, or the more elaborately detailed one at Ven House, Milborne Port, Somersetshire, either of which would provide the designer of the modern structures with a much needed object-lesson. Compare these with the photographs in the horticultural builders' catalogues from which unfortunately the modern examples are evolved. It would never seem to have struck the prospective builders that it is just as necessary that the conservatory should be designed by a competent garden architect who understands both the æsthetic and practical requirements, as that a domestic architect should be retained for the mansion, or a specialist in any other branch of design, and instead, they have chosen one, two or three specimens, from the catalogue as the case may be, according to the amount of accommodation required.

Stock designs.

So long as the selection of stock designs is confined to the provision of propagating and growing houses, which can be kept more or less out of sight and from which the plants are removed to the conservatory when blooming, this short-sighted method may not result in much harm, provided that the materials and workmanship are good, but, when intended as an adjunct to the house or pleasure grounds, and especially when viewed in conjunction with the former, it is necessary that position, planning, grouping, and details should all receive consideration. It is above all things necessary that the treatment of a glasshouse should be distinctly architectural without heaviness.

The use to which the conservatory is to be put is of course the first and most important factor in determining its planning. In most circumstances, a pleasant "withdrawing" room is required where, at all periods of the year, the users may enjoy the sunshine amid fresh flowers and foliage, when it will have to be planned so that it has convenient access to the entertaining rooms. In other cases, where immediate connection with the mansion is not essential, and more light and air are required than can be obtained when one side is against the house, it is often found advisable to place the conservatory

Planning the conservatory.

CONSERVATORIES, GREENHOUSES, VINERIES AND FRUIT HOUSES.

a short distance away from the main block and to connect the two by means of a glazed corridor or colonnaded loggia, which in itself may be made a delightful feature within by roses or other plants grown over trellis, and may from without provide a necessary screen from different portions of the grounds, and so fulfil a double purpose. Where it helps to enclose a cloistered or other secluded garden on its sheltered side, it may be open towards it and thus provide the opportunity for a very charming arrangement of arches overlooking the pleasure, or some similar treatment.

The conservatory attached to a palatial residence must, of course, be a very different structure to one which is attached to a brick suburban villa. In the former, stone entablature and pillars may be necessary, while for the latter a much lighter erection might be suitable provided that the cornice and moldings are correctly designed, and they and the spaces between the glass rails are well proportioned.

FIG. 276.

If the conservatory is to be considered as an additional apartment of the house in which bright and beautiful flowers are to be merely displayed and not grown, then the greater part of the floor space may be reserved for chairs and tables, with perhaps a wall fountain and one or two sculptured figures, the greenery being so arranged as to give it the character of a quiet retreat. In such circumstances the proportions of solid stone or brickwork and wood to the area of glass can be considerably increased, but where, on the other hand, it is not only to be used for showing plants grown in the greenhouses but also for the growth of roses and flowering climbers, then the proportion of glass to solid spaces must be as great as possible. Large sheets of plate glass should, however, be avoided, for they, æsthetically speaking, make blank holes in the walls, while if

CONSERVATORIES, GREENHOUSES, VINERIES AND FRUIT HOUSES,

broken, they are very expensive to replace. A conservatory on the South-east or South-west of a house which stands conspicuously on a hillside and which contains large panes of plate glass, has a hard and glaring effect and suggests a huge mirror, especially if there are no trees near to give partial shade and break the hard lines of the angles. It will always harmonize better with the residence if the sides and end are glazed with comparatively small panes of strong sheet glass, nicely proportioned, which, not being highly polished or perfectly flat, reflect the light at varying angles.

In illustrations Nos. 276, 274, 275 and 277 are shown four conservatories of varying degrees of importance, all occupying positions in which it was necessary that they should attain an architectural expression. The first was planned for a residence in Lancashire, but unfortunately as carried out has undergone many alterations. It was to have formed an extension to a large open loggia used as an open-air dining room and to be so treated as to give a necessary covered approach to the enclosed garden beyond. It was intended to be used as a Winter Garden, or Orangery, with ample floor space for chairs, and, while the roof was to be arranged as simply as possible to obtain the maximum amount of light, it was necessary to design the front in harmony with the mansion, for which purpose the stone arches and open verandah shown in the illustration were suggested.

The second illustration shows a conservatory erected in the West Park, Wolverhampton. The design is adapted from that of the old English orangery and would form a very suitable structure to place at one end of a flower garden where architectural expression is desirable.

*Examples
of conserva-
tories of
various
sizes.*

FIG. 277.—CONSERVATORY WITH GREENHOUSE—CORRIDOR CONNECTING WITH HOUSE.

The third of these is shown in illustration No. 275, and was erected at "The Hill," Hampstead, for Sir William Lever, Bart. It not only closed the well-marked main axial line through the grounds, and at right angles to the main garden front of the house, and on which the water-lily pond and terrace steps are placed, but also, together with the greenhouses on either side, gave privacy to the grounds, which were previously overlooked at that point from a knoll forming part of Hampstead Heath. As will be seen from the illustration, the ornament has been carefully concentrated on the main gable and the rest kept severely plain to give contrast and throw it into relief, and great care has been exercised in both the general proportions and the spacing and arrangement of the glass rails and other details.

The fourth illustration (No. 277), shows a small conservatory designed to hide unsightly back buildings, and which occupies a convenient position on one side of the carriage circle. There is only one small supplementary plant house for keeping it supplied with flowering plants, consequently it has been arranged as a fernery with the ferns planted in the crevices of limestone rock arranged naturally against the back wall and around the sides. As will be seen it has a greenhouse corridor connecting it with the drawing-room, thus forming a convenient and desirable promenade under glass, and giving the conservatory an appearance of greater size.

CONSERVATORIES, GREENHOUSES, VINERIES AND FRUIT HOUSES.

The conservatory floor.

Incidental reference has been made in other chapters to the furnishing of conservatories. Very much will depend, of course, on the use to which they are to be put, and the taste of the users, but the following remarks are of more or less general application. The most common mistake is to pave them with many coloured tiles in a startling and obtrusive star or check pattern, instead of subordinating the whole of the interior treatment to the flowers, which should obviously and confessedly form the centralizing interest. In the case of all but the most elaborate conservatories, a dull red or buff-coloured tile free from any suspicion of shiny glaze, which will form a soft and pleasing contrast to the dark green foliage characteristic of hot-house plants, is most useful and may be in the form of either "quarries" six inches square, laid either square or diagonally, or tiles six inches by two inches laid in the "herring bone" pattern so often used for wood block flooring. In either case a little relief may be given by a narrow margin of darker brown-coloured tiles six or nine inches from the wall.

When an important conservatory is attached to a classic mansion, in which case a large amount of open floor space would probably be required, the pavement may be laid with marble either in squares of one or alternating colours, or lozenges and diamonds, as in the sketch (Ill. No. 278), which is not such a costly process as might be supposed. For somewhat smaller structures a pleasing floor may also be obtained by using sawn limestone in conjunction with green slate, blue and green slate or red and yellow sandstones, the effect of the last on a large scale may be judged from an inspection of the pavement on the terrace in front of the National Gallery, Trafalgar Square, London.

FIG. 278.

Blank walls in conservatories.

Probably the majority of conservatories possess a certain amount of interior blank wall, and unless the proportion of this is so great as seriously to interfere with the lighting, it may be regarded rather as an asset than otherwise, for it allows of much individuality of treatment and delightful results. Where from four to six feet of space in front of it can be spared for a soil bed, naturally treated artificial rockwork, such as that described in Chapter XIII., may be employed with charming results, though there is a distinct danger of pettiness and over-elaboration in treatment to be guarded against, due to the effort to make the very most of an exceedingly limited space. In large schemes of this kind, a dripping well for ferns with pools for gold fish may be added, but to attempt this on a very small scale is apt to result in an effect which suggests nothing so much as a leaky pipe and a damp place.

Treillage in the conservatory.

The graceful treillage which has been brought to such a pitch of elaboration by French artists is, in its simpler forms, eminently adapted to the interior ornamentation of conservatories. It may be treated either as a form of wall decoration in itself or may provide a support for the slighter exotic climbing plants, or screens to break up the interior space into two or more compartments may be constructed of it. Owing to its somewhat delicate construction it should not be used where there is danger of its being damaged. In any case it should be designed specially to meet the requirements of each individual case. Where treillage is too elaborate or too fragile, simple forms of ornamental trellis, designed after the style of that used in connection with so many Queen Anne or early-Georgian houses, may be used with great effect.

Of the smaller furnishings, chairs, tables and what not, it is only necessary to say that they should be light and portable, and of a nature to withstand the humid atmosphere of a glasshouse and, as in the case of the paving, quiet and harmonious in colouring.

In most gardens, even if there is no conservatory to be kept supplied with a succession of flowering exotics, a range of glasshouses, large or small, is usually considered necessary. This is particularly so when the domain is situated at some distance from

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a market and so the fruiterer and florist cannot be visited without considerable trouble ; but even when this incentive is absent, there is the delight of rearing one's own fruit and flowers, which are not only fresher than those which have been bought, but, in the case of fruits, retain the beautiful bloom which is inevitably destroyed if it is necessary for them to be packed and to travel.

As a rule, the planning and arrangement of a series of glasshouses are left more or less to chance and expediency, the various houses being placed anywhere conveniently accessible where the necessary open aspect can be obtained, or a wall exists to place the lean-to houses against. How much is lost by this lack of forethought, even in quite small and simple ranges, will be at once evident on referring to the photographs of such ranges in illustrations Nos. 280 and 281. Even where there is only one simple lean-to house, it may be given significance as part of a well-thought-out scheme by placing it centrally across the end of the main walk, across the middle of the kitchen garden, and having a door under a small gable to come opposite the walk. In larger schemes, the main span-roofed house would usually come end-on in the same position with the less important houses arranged symmetrically on either side, as in illustration No. 275, though in many instances, such as that shown in illustration No. 280, an absolutely symmetrical arrangement cannot be obtained on account of local conditions, which demand individual treatment ; such enforced variations, if intelligently dealt with, always result in added charm and a pleasing individuality.

One of the most important considerations in the planning of a range of glasshouses is the placing of the potting shed and heating chamber. As the latter must be sunk deep enough below the floor level of the glasshouses to allow the top of the boiler to be lower than any part of the radiating pipes, it is usually a good and economical arrangement to allow it to form a basement story to the former.* This arrangement is shown in a majority of the designs illustrated in this work, and where the range is symmetrically planned, the potting shed and heating chamber should come immediately behind the main centre house with a door between it and the former giving direct communication.

* The floor of the heating chamber should also be low enough to allow of a large bucket being placed under the draw-off cock, which is fixed at the lowest part of the boiler. This is a point which is often neglected.

The planning of a range of glasshouses.

FIG. 279.

1. PORCH.	10. GREENHOUSE.	16. LATE VINERY.
2. LIVING ROOM.	11. GARDEN FRAMES.	17. EARLY VINERY.
3. PARLOUR.	12. ROOT AND SEED STORE.	18. CONSERVATORY.
4. SCULLERY.	13. FRUIT STORE.	19. EARLY PEACH HOUSE.
5. STAIRS.	14. OPEN SHED.	20. LATE PEACH HOUSE.
6. YARD.	15. POTTING SHED WITH HEATING CHAMBER UNDER.	21. DIPPING WELL.
7. COKE STORE.		22. VEGETABLE BEDS.
8. COMPOST BINS.		
9. STOVE HOUSE.		

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Such an arrangement is not only economical in first cost but has several great advantages from the gardener's point of view. Three-quarters of his work will centre round the potting shed and heating chamber, so that to have these one over the other is very convenient, and the door between the former and the glasshouses will allow him to remove plants from one to the other without exposure to the weather. No fumes from the heating chamber will reach the glasshouse by this door, for the former will be approached by an outside staircase and not have any direct communication with the potting shed. All that is necessary is that the staircase to the heating chamber shall be conveniently placed in relation to a door from the potting shed, communicating with the space at the rear of the range. Again, such an arrangement allows of a very convenient planning of the hot-water pipes. In the first place it renders the construction of culverts through which to carry the pipes from the boiler to the range, or from one house to another, quite unnecessary, and this is always to be avoided as, however carefully the pipes are swathed in heat-conserving material, there is always more or less loss, varying with the length of the culvert and other conditions such as the material with which the pipes are packed and the possibility of keeping it dry. Again a further advantage lies in the fact that, in such an arrangement, the hot water pipes will go right and left from the boiler in two separate circulatory systems, so that during those portions of the year when few houses will need heat, it is possible entirely to cut off half the pipes at a main valve, and heat the rest with a small and economical fire. It also allows of the houses which require most heat being placed nearer the centre of the range, and consequently nearer the boiler than those which require less. Thus the early vinery might come first with the late vinery beyond and the early and late peach-houses after them in the same order, as the last of these would require very little or no heating. The stove house would, of course, come nearest of all, as it requires the fiercest heat.

Where the plan of a range is necessarily L shaped as in illustration No. 298, a good place to put the potting shed is in the angle, as otherwise there is necessarily a small square house at this point which, being shut in on all sides, is suitable only for a fernery and, unless this class of house is wanted, as in the instance shown, the space is more or less wasted.

*Hot water
installa-
tions.*

In the now almost universally adopted low-pressure hot-water system of heating, the hot water from the boiler is caused to circulate through the pipes by utilizing the natural law which ordains that, if one part of the water in the system is hotter than another, it will rise to the top. Thus the water is heated in the boiler and finds its way into the pipe known as the "main flow," which starts from the top of the boiler and, rising as it goes, gradually travels to the highest and most distant point in the system. Being cooled as it goes, it then returns to the boiler by means of the "main return," which joins the latter at the bottom. It thus follows that, to ensure good results, the rise in the pipes from the boiler to the extremity of the system, should be continuous and even. To make this possible, the main pipes are usually placed in a trench under the glasshouse floor, as otherwise they would come across the doorways, and could not be run through even the shortest trench between the main block and an outlying house or hot frame. The radiating pipes are then connected to the mains at convenient points and furnished with screw-down valves. There are two means of doing this known respectively as connection "in series" and "in parallel." In the former case both ends of the branch are connected to the same main, with a stop-cock on the main between the two connections, while in the latter, which is by far the better way for horticultural work, the flow of the radiating system is taken from the main flow, and the return pipe to the main return. The former method, which is more suited to the heating of domestic buildings, is sometimes advocated for horticultural

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work on the ground that the radiating pipes nearest the boiler will, if connected in parallel, monopolize most of the heat; but this is easily remedied by a little adjustment of the screw-down valves. In any case, the mains should always be run under the houses and not outside in culverts, as then any escape of heat is utilized and simply supplements the action of the radiating pipes.

The amount of piping which is required in each house will of course depend on the use to which it is put, but the situation, whether exposed or sheltered, is also a controlling factor. For general use, however, the following Table, extracted from "Fowkes on Heating," will be found reliable :—

						Per 1,000 feet of cubic contents.			
Greenhouses and conservatories	..	..	..	..	..	35 to 40 feet of 4-inch pipe.			
Vineries	..	..	..	..	..	45 to 50	"	"	"
Plant stores	..	..	..	..	..	55 to 65	"	"	"
Forcing houses	..	..	..	..	..	60 to 70	"	"	"
Peach houses	..	..	..	..	..	30 feet	"	"	"

For heating anything up to 3,000 feet of four-inch piping, I have found no better boiler than the old "Chatsworth," but sectional boilers of the "Ideal" type are growing in favour, as they can be used equally well on the smallest or largest installation, and also because, in case of accident, the injured section can be so easily replaced. They are self-contained and require no brickwork, but the cost of either is about the same, as what is saved in brickwork is spent on the more costly boiler. There is a distinct advantage in having the firebars in the form of tubes through which the water circulates, as the fire can be damped down in the evening, and will smoulder with a red heart next to the water bars, and the water is therefore kept hot without attention until the following morning. The water-cooled bars also do not deteriorate or need constant renewal like the old-fashioned firebars, which never last very long.

Boilers.

Whatever boiler is adopted, however, it should be of ample size and power for the work it has to do, as it is far more economical to fire a large boiler slowly than to produce the same heat in the pipes by fiercely stoking a smaller apparatus. Under ordinary circumstances the writer usually advises that a boiler guaranteed to heat one third more piping than the maximum load it is to be subjected to should be adopted. At some time or other, also, one of the houses may be put to a new use and require more piping, which can be added very cheaply if no alterations to the boiler are necessary.

In large installations, it is always an advantage to fix two smaller rather than one large boiler. Not only does this prevent disaster should one boiler be under repair in severe weather, but in those seasons when little heat is required, only one boiler need be fired and thus a working economy is effected. The arrangement of one main flow and two returns is quite good practice and is often done, but a greater number of flows than returns would, on the other hand, be wrong.

From what has been said, it will be abundantly evident that the two problems of planning and heating a range of glasshouses are interdependent at every turn, and nothing can be arranged with regard to the one without having a direct influence on the other, and that, by the exercise of care and forethought in these two departments, great economies can be effected not only in the initial expenditure but still more in the working and upkeep.

There is yet another point bearing on the same subject and that is the design and practical requirements of the various classes of houses required for different purposes. Sections of glasshouses showing the various forms are given in illustrations Nos. 282 to 287 inclusive, but it should be explained that the constructional details, such as roof trusses and spandrils, which show so conspicuously on the sections, do not attain the same prominence when the house is seen from the ordinary point of view.

Design of
growing
houses.

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FIG. 280.—HERBACEOUS BORDERS AND RANGE OF GLASS, WYCH CROSS, SUSSEX

FIG. 281.—SMALL RANGE OF GLASSHOUSES AT LEWISTON MANOR.

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Whatever the form of the house, however, it is important that it should not be made higher than is necessary, so as to limit the cubical area to be heated. It is admitted by the most capable gardeners that glasshouses are usually built more loftily than is necessary, in some instances so much so as to make successful plant growing impossible. Probably the best growers in this country are those who supply Covent Garden Market, whose plant and fruit houses are much lower than those usually met with in private establishments.

Another important point is the pitch of the roof. The use to which the house is to be put will largely determine this, but, where there is much choice, four other factors should be considered. The first of these is, that the flatter the pitch is, the more evenly the heat will be distributed, while, if it is steep, all the hot air will accumulate near the

FIG. 282.

FIG. 283.

FIG. 284.

apex, and thus a flat pitch tends to sturdy growth. Again, a low pitch allows of all the plants being brought very near to the glass, and this also is very desirable if they are not to run away in long bare stalks. A third consideration is that by making the roof steeper, drip, that is the dropping of condensed water vapour from the roof on to the plants, is avoided; while the fourth and most important consideration of all is to find a pitch which will admit the most light. This means that the slope of the roof must be about at right angles to the direction in which the rays of the sun will strike it at the time of the year when sunlight is most precious, that is, in the Winter months. At the worst period of all, the sun's altitude is only fifteen degrees, which would of course involve an impossibly steep roof; but extreme steepness is not of so much moment as might be supposed, for if the sun's rays strike the glass as much as thirty degrees

FIG. 285.

FIG. 286.

FIG. 287.

out of the perpendicular, the loss in efficiency is only $2\frac{1}{2}$ per cent. These various factors, if considered independently, would result in very different slopes, and it is therefore a case for compromise and adjustment. This process coupled with experience has resulted in most span houses, such as those shown in illustrations Nos. 285, 286 and 287, being constructed with a pitch of twenty-six degrees from the horizontal, which gives a rise of six inches in every foot of breadth, while the lean-to houses, such as those shown in illustrations Nos. 282, 283 and 284, are made with from this span upwards according to the use to which they are to be put, peach houses often having a very steep pitch indeed. Gables over doorways, the principal plant houses in a range having the gable end towards the spectator as he views the range as a whole (Ill. No. 280), and conservatories,

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usually have their roofs square pitched, i.e., sloping at an angle of forty-five degrees to the horizontal. Needless to say, under all ordinary circumstances, the whole of the lean-to houses in a continuous range should, if possible, be made with roofs of one pitch.

A feature common to all classes of glasshouse is the substructure of wood, stone or brick, on which the glass structure stands. This may vary from a dwarf wall only a foot high from the ground level in the case of steep-pitched peach houses, to one three feet six inches or even four feet high. Of the three materials mentioned, brick is by far the best if built in good strong mortar, as it gives a wall of a convenient thickness which is heat retaining and has a surface which can easily be kept clean. Most stone walls become dirty and encourage insect pests, some friable sandstones, such as that used so extensively in South Yorkshire, being particularly bad, while wooden substructures should never be used unless it is absolutely necessary that the greenhouse should be so constructed as to form a tenant's fixture, as such walls allow heat to escape rapidly, need constant repainting, and are liable to rot away at the ground level.

Lean-to houses. The simplest form of glasshouse possible, as distinct from frames and pits, is the lean-to house, in which the roof rises directly from the wall in front without any glazed front, or "front lights" as they are called. Such houses used to be common for plant stores or vineries, but very few are being erected nowadays, and, under ordinary circumstances, the writer would never advise their adoption as the extra cost of a glass front is always so small compared with the vast improvement it makes in the house both practically and in appearance. There is, however, a form of peach cover or late peach house which is very similar in appearance to a lean-to house without front lights, and which may be erected with advantage in the South of England where the summer days are hottest. In such houses the roof consists of a series of loose glazed frames each long enough to form a complete cover for a section of the roof from eaves to apex, and which can be removed at pleasure, leaving the whole of the interior, with its fruit bushes, open to the hot sun and air of a sultry Summer day.

Illustrations Nos. 282 and 283 show sections through the better sort of lean-to houses, the dotted lines indicating how the ventilators in the front and top open, thus providing through ventilation. This provision of both inlet and exit ventilators is an important point and must be so contrived that the cold air entering comes into contact with the radiating pipes before it reaches the foliage or fruit. All the sections given illustrate how this is done, the small circles representing radiating pipes seen in section and so placed as to meet the incoming air.

Three-quarter span houses. Illustration No. 284 shows what is practically a variation of the ordinary lean-to house, known as a "three-quarter span house." It has the practical advantage of allowing of ventilators on each side of the ridge so that, whichever way the wind is blowing, one or the other will be sheltered from it, and also gives the range of glass a better appearance by allowing of a broad house which is not so much higher than the lean-to houses on either side as to spoil their appearance, and at the same time, does not necessitate such an exceptionally high back wall as a lean-to house would.

Span-roofed houses. The remaining usual form of glasshouse is the span-roofed house, which is shown in section in illustrations Nos. 285, 286 and 287. For market gardening purposes they are often built without front lights in the manner described for the simplest form of lean-to house, but in a garden this is hardly ever done, as it would prevent the flowers being seen from without the house, which is always desirable. As will be seen from the illustrations they have ventilators in both side walls and both sides of the ridge, but the piping is not, in the instances shown, carried so as to intercept the air coming through the former as in the case of the lean-to houses already described, as they would then be very much in the way. Instead of this, they are placed under the staging close to box ventilators in the brick substructure. These box ventilators are openings in the wall

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usually about eighteen inches long by nine inches deep, fitted with a hinged lid or shutter which can be partly or widely opened according to the amount of fresh air desired. In the forcing house (Ill. No. 287) even this arrangement is not possible.

Besides these main distinctions in the design of the three chief forms of glasshouses, there are sundry others, which are adapted by their internal fittings to various uses. In the case of vineries, the front wall of the substructure is very often built in the form of arches just below the ground level and resting on piers so that the roots of the vines may have room to grow outwards as well as inwards, as shown on illustrations Nos. 282 and 284. Many gardeners object to this arrangement on the score that it is a wrong principle which entails having part of the roots of the same plant growing in a hot house and part in the open, but they forget that the transition from hot to cold in a thick bank of soil and compost will be very gradual, and may in fact be almost prevented by arranging heating pipes at the bottom of the bed, as shown in the sections just referred to.

Internal fittings.

The vines themselves are trained over wires strained parallel to the under side of the roof and about nine inches from it. These wires are sometimes placed so as to run from the apex to the eaves and sometimes horizontally. The latter is far the best way as it allows each vine to be tied to a number of them so that, in case one breaks, the vine is held by the others while it is replaced.

The peach house is fitted with a wire trellis with galvanized iron framing, which is usually curved, as shown by the double line on illustration No. 283, and rests on brick pillars passing through the soil bed inside the house.

A section through a stove house is given in illustration No. 287, which shows the arrangement of pipes under the bed which is contained in a kind of trough with brick sides and a slate bottom.

Other houses usually require staging, which may be of slate, wood or iron. Iron staging is formed by placing narrow corrugated iron on an L-iron framing, which is supported on iron legs, of which the neatest kind which the Author has yet seen is that shown in illustration No. 288. The corrugated iron used has narrow corrugations and is a very neat material, not to be confounded with that of which cheap buildings are constructed. It is usually covered with fine, even pebbles, or by spar so well.

Staging.

Slate staging is much the same corrugated iron. For most purposes as it tends to counteract the effect of remaining form of staging, and proof of wood battens about three inches apart, on a wooden framework and by two inches material. It is not ceding forms, but is a little cheaper people. It lends itself particularly to

FIG. 288.

thing with slates used instead of the this makes the best possible staging sudden changes of temperature. The bably the most usual of all, is formed broad and one inch thick and an inch supports made out of three inches practically so good as the two pre- and its appearance is preferred by some the arrangement of plants in tiers in

the centre of a plant house or conservatory, or against the back wall of a lean-to house. It can also be more easily constructed so as to be removable, in order to allow chrysanthemums or other large plants to be displayed on the floor.

The height of staging placed against the front wall of a glasshouse should preferably not exceed twenty-seven inches, and the plants will look better from the outside of the house if its surface is nine inches below the bottom edge of the glass, so that the pots are hidden. Staging in the middle of a plant house or conservatory is often used for tree ferns, palms, camellias, or large plants growing in heavy pots or tubs, and must therefore be strong; a good staging for such plants is formed of sawn flag tabling resting on stone or brick piers.

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Paving.

The best pavement for almost any glasshouse is formed of Yorkshire flags, "quarries" or red tiles already advocated for conservatories. Brick on edge laid in cement or sand can also be used where really hard and vitreous stocks of a nice warm colour can be obtained. Cement floors or wood gratings are apt to get rather mossy and slippery.

Soil beds.

In a large plant house or conservatory, soil beds are often formed in the centre of the paving. These beds should be edged preferably with stone edging like that shown in illustration No. 306 for outside flower beds, but bricks or terra cotta moulded to a simple pattern may be used. Whatever the material adopted the moulding should be simple and unobtrusive and sufficiently high to retain the soil some four or six inches above the floor level, well fixed in position by cement or dowels on a concrete or brick foundation. Where required, the kerb may be of a pattern into which the standards for the staging may be fixed.

Opening gear.

There is one constructional item omitted from the sections for the sake of clearness. This is the opening gear by means of which the whole of a series of ventilating lights are opened at one operation. Generally speaking, the top ventilators, i.e., those in the roof, are opened by revolving gearing operated by a crank fixed to the back wall or the end framing in a convenient position, while the front lights are moved by a simple lever. The latter are often a heavy load to raise all at once if hung from the top edge, but by hanging them on pivot hinges about two-thirds of the way up the framing, so that the top edge of the frame drops inwards as the bottom edge rises, they can be opened and closed with ease.

Pits and frames.

Whether the range of glasshouses is large or small, it is usually necessary to have a few good pits and frames. The difference between these is that, whereas the former have brick sides and are fixtures, the latter are made entirely of wood and are usually portable. They may be so planned and placed as to form an integral portion of the design for the range of glass and may be heated by, say, one three-inch radiating pipe run all round each in order to keep out the frost. The point most often neglected in their construction is the efficient exclusion of rain-water along the ridge where the two removable lights meet. The capping to do this needs a little ingenuity in its arrangement to prevent its coming in the way when the lights are turned back, but there are several good contrivances on the market to effect this.

Design of potting shed.

We have already spoken of the placing of the potting shed. Its interior fittings usually consist of a broad bench with bins below to hold various composts, sand, loam, etc., and a little hob grate with a small oven in which occasional labourers may warm their food. In other cases the shed is comfortably heated by means of a small radiator connected to the heating apparatus. The floor should be of solid concrete as the fumes from the heating chamber below would otherwise make the interior unbearable, and, in building it, pieces of wood four and a half inches broad and three inches thick, should be built into the walls on the inside about five feet six inches from the floor, to fix hooks, drive nails, or screw shelves to.

Heating chamber.

The heating chamber must be of ample size to allow the person stoking the fire to use his long stoking irons, and iron brackets to hold the latter are fixed to the wall. There must also be a recess for fuel conveniently placed for stoking and with a shoot above. Probably the ideal arrangement would be two separate shoots, one for coal and one for coke, but only one is usual.

The doors from the potting shed and heating chamber should open on the space at the back of the wall which supports the lean-to houses, and this is a convenient place for the provision of a piece of open ground for storing composts, turf, leaf mould, flower pots, barrows, tools, etc., and for the latter and lawn mowers, a shed may be built against the high brick walls. Ready access by carts bringing fuel, manure, etc., is of course a *sine qua non*.

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This compost ground is usually an ugly place and the sheds against the back wall of the range of glass are hideous, but there is no reason whatever why this should be so. If they are made with a solid wooden framing treated with Stockholm tar and roofed with pan tiles of a nice colour, the latter may be neat and agreeable to look upon, while the provision of brickwork bins for composts, etc., will keep the rest tidy, and a neatly clipped hedge with a pretty gate may surround the whole.

Compost ground.

A water supply throughout the range is important. In each house there should be a tank of galvanized iron placed under the staging for dipping watering cans into,

Water supply.

FIG. 289.—RANGE OF GLASSHOUSES, AT HOLEHIRD, WINDERMERE.

and kept filled by a ball valve. This is far better than drawing from the tap direct, as the water standing in the tank has the chill taken off it before use. There should, however, also be a stand-pipe in each house to connect the hose to for floor washing, etc. The same supply would also, of course, be laid on to the supply cistern of the heating apparatus, and a tap over a little stoneware sink in the potting shed is also very useful.

In the accompanying illustrations are shown plans and examples of ranges of glass

Examples of ranges of glass.

FIG. 290.

The first (Ill. No. 298) is a complete and self-contained scheme at Wych Cross Place, Sussex, designed and carried out for Douglas W. Freshfield, Esq., as was everything on this estate, in a complete and consummate manner, in conjunction with the gardener's cottage and the bothy. The sense of unity and compactness observed here is not always attainable in remodelling existing grounds, and is often lacking even in new estates, where disconnectedness and diffusion are inexcusable. The noticeable points in this scheme, which gives the principle which should always be kept in view, is the centralized position of the heating chamber, thus obviating waste of heat, and the ease with which the head gardener can supervise everything at any hour of the day or night.

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FIG. 291.—RANGE OF GLASSHOUSES AT HOLEHIRD, WINDERMERE.

FIG. 292.

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The second example (illustrations Nos. 289 and 291) shows additions to some fruit houses at Holehird, Windermere. It may be noted that the old portion consisted of early and late vineries, with a plant house in the centre and a peach house at each end, the remaining houses shown being added from designs by the Author, thus welding old and new into a self-contained range. The centre house was pulled down, and also one of the peach houses; the potting shed and the heating chamber, although considerably enlarged, occupy the same position as before the alterations; the remainder of the work is all new. In planning these new orchid and plant houses, the limits were fixed by the walks shown on the plan, and the position of the retaining wall surrounding them. The proprietor wished to be able to go the round of the entire range without leaving the shelter of the glass, an object which the allotted space somewhat favoured; the only obstacle being that one of the outside vine borders had partially to be cut away. This was, however, in a measure compensated for by the improvement made to the inside borders.

FIG. 293.—RANGE OF GLASSHOUSES AT "THE FLAGSTAFF," COLWYN BAY.

Entering by way of the potting shed built on the North side, an ample gravelled space is provided for carts, etc.; to the left, which is slightly higher ground, is arranged the frame and standing ground, with the gardener's bothy placed against the North wall of the kitchen garden. To the right and left of the potting shed are stores, office, heating chamber, shed for tools, ladders, and compost heaps.

The heating mains are carried through the potting shed, the stores and office, to right and left of the boilers, thus making these rooms comfortable to work in. The heating of all the houses is so adjusted that the temperature of each can be regulated to the niceties required for orchids or other purposes.

In designing the elevations, it was necessary that strict attention should be given to the habits and requirements of the plants to be grown in the different houses, but, by care in grouping and in detailing the cornices, it was found possible to obtain compactness and simplicity without sacrificing appearance.

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The perspective view (Ill. No. 293) shows a range of glass erected at The Flagstaff, Colwyn Bay, North Wales, consisting of potting shed with heating chamber under, a corridor and room in which to pack flowers and fruit, palm house (18 feet by 17 feet), early muscat house (27 feet by 16 feet), late vinery (27 feet by 16 feet), and plant house (24 feet by 16 feet). All these glasshouses face due South. Against the wall connecting the lodge and the potting shed are erected early and late peach houses, and projecting from this are two span-roofed houses used for propagating and melon growing.

The fourth example given (Ill. No. 290) shows a small but useful range of glass, designed in connection with a formal garden for a Lancashire client, consisting of a plant house which can be used as a conservatory for the display of chrysanthemums or other flowers in bloom, a vinery, which is divided into two compartments, one for Black Hamburgs and the other for Black Alicantes and Lady Downe Seedlings, and, at the end of the vinery, a plant house and stove, each 12 feet wide. Like the first range of glass described, the whole of these houses are in direct connection with the potting shed.

The fifth example (Ill. No. 292) represents glass houses on a small scale, erected at Windermere. Here there is a conservatory in the centre, a small stove at one end, and greenhouse at the other. The chimney in this case was not permitted to be near the house; in preference, therefore, to carrying the pipes in trenches, it was considered more economical to place the boiler near its work at the end of the stove, conducting the smoke through an underground flue to a chimney over the potting shed some forty feet distant. The stoke-hole is completely hidden by placing over it a span-roof pit, which, being visible from almost every portion of the grounds, was made rather more ornamental than is usual. Illustration No. 281 shows a very similar range which embodies in its design some of the best features of the pre-Victorian glasshouse.

The last illustration (Ill. No. 294) is of a very simple little greenhouse, calculated to give pleasure to amateurs and ladies interested in gardening. Essentially a "growing house," it is suitable for almost any class of plants; the requisite amount of piping is

FIG. 294.

provided. Where there are no other glass erections, the wisest plan is to use it as a cool house. It is attached to a potting shed and tool house containing a potting bench, the heating chamber being under, with independent boiler and extended hopper feeder, to ensure the fire burning for a long time without attention. This little boiler heats

a 4-inch flow and return pipe passing round the greenhouse, sufficient to keep the temperature at 45 deg. during the Winter months. The staging is 4 feet wide, of fixed lattice on one side, and on the other of slate, which can be removed to allow chrysanthemums being placed on the ground during the period of blooming.

FIG. 295.—ESPALIERS FOR FRUIT AND ROSES IN THE KITCHEN GARDEN, DUNCHURCH LODGE.

FIG. 296.—FRUIT ESPALIERS AT FOOTS CRAY PLACE, KENT.

CHAPTER XV.

“Oh the incredible profit by digging the ground! for though it be confessed that the plough beats the spade out of distance for speed (almost as much as the press beats the pen), yet what the spade wants in the quantity of the ground it manureth, it recompenseth with the plenty of the fruit it yieldeth, that is *set* multiplying a hundredfold more than that which is *sown*.” Fuller.

It will be remembered that, in Chapter III., where we followed the prospective owner through the process of choosing the site and deciding what use to make of its various parts, the first portion of the pleasure grounds to receive attention and to have its locality and size determined was the kitchen garden.

The placing of the kitchen garden.

This may seem to be an inversion of the natural and correct order of things to those people who look upon the kitchen garden and orchard as purely utilitarian departments of the domain, to be kept out of sight and as far from the pleasure grounds as possible; but there are many old examples throughout the country, especially in Scotland, which are in every way the most delightful portions of the grounds, giving sheltered walks at all seasons amidst trees and plants “good for food and pleasant to the eye,” imparting variety and interest perennially.

To the “soul attuned to sympathy” no pleasure exceeds that of being able to wander round a prim walled-in garden, enjoying the fragrance of the blossom in Spring, and watching the setting of the fruit and its various developments through the successive seasons until the in-gathering. To remove it to a distant and inaccessible site where the owners and their guests cannot enjoy this, is to rob them of a source of pleasure and instruction.

But, it will be asked, is it possible to make the kitchen garden a successful part of the pleasure grounds, and give it æsthetic value without impairing its usefulness, and if so, what are the materials which we may use for the purpose—with appropriateness and without affectation? The answer to the second of these questions also supplies that to the first. We have one great asset in the herbaceous borders which that most commendable fashion of keeping the house fresh and gay with large quantities of flowers, renders necessary, the espaliers for fruit trees, from which pleasant vistas may be contrived, fruit walls to aid the æsthetic effect by giving an enclosed appearance, propagating and other glasshouses, which, as we have shown in a previous chapter, may

Æsthetic possibilities of the kitchen garden.

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be made to heighten the effect, dipping wells for watering, tool sheds and fruit rooms which may receive appropriately quaint treatment, walks which may not only aid in forming vistas but may have their surfaces treated in an attractive manner, and, in fact, there seems to be no adjunct to the garden which may not be made pleasant to look upon either from its design or placing, or both.

These considerations, if fully understood and their potentialities grasped, throw an entirely fresh light on the problem of the placing, design and internal arrangement of this feature, and, if made the most of, will result in a very considerable extension of the pleasure grounds, which, as it is formed by the effective arrangement of material that it will be necessary to supply in some form or other, may be considered to be obtained without any added expense.

FIG. 297.—CONNECTION BETWEEN PLEASURE GROUNDS AND KITCHEN GARDEN, "THE FLAGSTAFF," COLWYN BAY.

Having decided that the construction of the kitchen garden as an ornament to the domain is not only desirable but possible, the first question to be settled before commencing its construction is—where shall it be placed? The determining factors in arriving at an answer are of two kinds, practical and æsthetic, and in many cases they will more or less conflict with one another, and thus the result will be a compromise. In those happy instances where the practical requirements are met under the best conditions, there can be no better plan than that adopted at Wych Cross Place in Ashdown Forest (Ill. No. 280), or at the "Flagstaff" Colwyn Bay (Ill. Nos. 14 and 297), and again in the plan of Little Onn Hall (Ill. No. 405), in all of which instances the kitchen garden has been so placed that the principal walk gives added length and more pronounced crosswise perspective to the main terrace walk in front of the house.

Aspect.

Foremost of the practical considerations is that of aspect, and ground which has a gentle slope to the South, South-east, or South-west is best being sunniest. We must also have shelter beyond that which can be given by the fruit walls either by a hill rising on the North or North-east side, or better still, a wood of well-grown trees; and a good soil, which however, if it does not already exist may usually be produced artificially. As to the extent of the kitchen garden, with the improved railway and postal facilities which, in case of emergency, will nowadays bring fruit and vegetables from the nearest town in a few hours, it is no longer necessary to lay out huge vegetable gardens such as are still found in many old country demesnes.

Extent.

For a moderate-sized establishment, an acre and a half of kitchen garden would be sufficient, independent of the space allotted to the frame ground and range of glass-houses, while, for a small establishment, three-quarters of an acre of cropping ground

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will be found to meet all requirements. It should be understood, however, that this area will not allow of late potatoes nor for any space being given up to orchard trees, espaliers or herbaceous borders, which must be allowed for in addition.

After aspect and size comes shape, and it cannot be too strongly insisted upon, that a kitchen garden, in which the primary object is utility, should be planned with a view to obtaining the largest possible cropping area within the least fencing, which means that, so far as possible, the lines of the walls should be straight and at right angles to one another. For the purpose of obtaining ample wall space for fruit trees, a parallelogram is better than a square, in the proportion of, say, one hundred and fifty feet to one hundred in breadth, thus securing additional length of wall with a South aspect.

Shape.

FIG. 298.

Sometimes, however, owing to the lines of existing boundaries or the division of the land by drives or estate roads, a regular shape is impossible, and occasionally a kitchen garden may with advantage be of unusual shape, as when it is modelled to fit a site with curved contour lines or other peculiarities. Such conditions often call for great ingenuity on the part of the landscape architect, who, however, feels doubly rewarded by the satisfactory and even strikingly original results which often follow from the solution of special difficulties.

Care should also be taken to select a position which admits of thorough drainage, especially when the site chosen is in a valley or on low-lying land. A serious mistake is often made in selecting a snug, sheltered position in the bottom of a valley, because, in such positions, Spring frosts are most troublesome: not because there are more degrees of frost there than on higher ground—there may indeed be less—but because

Drainage.

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there is more moisture on which the frost can act. If however there be no alternative it will be necessary to drain more completely ground lying in a hollow.

*Construc-
tion.*

The site having been determined upon and the size and shape pegged out, the first step in the formation will be the treatment, enrichment, draining and levelling of the ground, which should be undertaken before the area is walled in, for there will generally be much carting or wheeling of materials and composts to and from and about the ground, which is better and more conveniently done while it is clear on all sides. Where draining is necessary this should be carried out first, and the pipes laid deep enough not to interfere with subsequent operations, or become choked with roots. The principles on which it should be done are the same as those for lawns as described in Chapter IX., and their application is well illustrated by the plan of a kitchen garden given in illustration No. 298. In this instance the ground has an approximate fall of one foot in twenty-eight towards the house, the soil being deep and fairly retentive. As

FIG. 299.—DOOR IN A FRUIT WALL.

FIG. 300.—DOOR IN A FRUIT WALL.

will be seen, the main drains follow the lines of the paths. They consist of glazed stoneware pipes laid with open joints, and the land drains connected to these are about three feet deep, and in rows eighteen feet apart.

Where the ground is very uneven, it will be necessary to grade it to an even fall, if not over the entire area at least over each section or "quarter" of the garden; economic cropping and upkeep require this. Contractors who undertake to lay out gardens as well as to erect the house, too often bring the subsoil to the top, which, though a commendable way of treating an old worn-out garden, is a mistaken treatment for a new one, where the most fertile soil is near the surface. The best method is to overhand-trench it, i.e., to make two trenches instead of one, throwing the top spit on to the second trench and the subsoil on to the near one. If, to secure a good gradient, it is necessary to excavate at one part and fill at another, the portion removed

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should be the subsoil from the bottom of the trench, and not the fertile top soil, and it should be relaid at the bottom of the trench on the lower portion of the ground which it is intended to raise. In this way, the good soil is always kept to the top.

Much can be done to improve a poor soil by draining when water-logged, by incorporating lime, road scrapings, burned ballast or sand where it is heavy or clayey, by the use of clay where the ground is sandy, and by deep and careful trenching as described above, adding to the soil already on the ground that taken from the site of the house when house and garden are being made together, also that from the new walks, the site of the glasshouses or potting sheds, or anywhere it can be spared. To enrich the subsoil, add liberal supplies of manure, cow manure for light land and horse manure for heavy land, and old lime and screened rubbish from old buildings for heavy clay or peaty land.

Improving the soil.

For convenience in working, the garden should be divided into plots or "quarters" approximately ninety feet long by sixty broad. The length should, if possible, run East and West, so that the cropping may be the short way of the quarters. This reduces labour, and at the same time ensures to the crops the greatest amount of sun.

After the ground formation will come the walls. Brick walls are undoubtedly the best, but where stone is the prevailing building material of the district, the garden walls will look more becoming in the latter material. Brick is, however, the best constructionally for it allows of a cavity wall which will give greater warmth and dryness and so help the ripening of the fruit. It is also more necessary and more expensive to wire a stone than a brick wall as brick facilitates nailing. Both stone and brick walls should be cement pointed, as otherwise they harbour garden pests, and where the foundation rests on clay, either wall will require a damp-proof course, placed some two or three brick courses above the ground level. For training the fruit trees successfully it is desirable that the walls should have a plain, unbroken face on the side facing the kitchen garden, but, on the other side facing the pleasure grounds, the appearance is improved by introducing such features as pilasters, or buttresses, to harmonize with the terrace walls or other adjacent structures, and it is even possible, of course, to build the wall so as to show a brick surface on the inside and stone on the outside, while in a district where large flints abound, the outside might be built in the flint work which looks so quaint in old country churches, with piers of roughly squared stone or brick.

Fruit walls.

The doorways, especially those leading to the pleasure grounds and house, should receive careful treatment. Suitable arrangements will be found in illustrations Nos. 299 and 300, while for certain positions, such a quaint little gate-house as that shown in illustration No. 71 would give an added charm.

The heights suitable for fruit walls vary according to the aspect and the amount of shade they will throw on to the garden, those on the North, East and West being higher than that to the South, the North side of which would face the garden. The North—that is the wall with a Southern aspect—might be twelve or fourteen feet high, the West and East walls, nine to ten feet, and the South wall seven to nine feet high. Many fruit walls are only nine inches thick, but a far better result is obtained by building them fifteen inches thick, and hollow for at least the first two feet of their height, as shown on the accompanying sketch (Ill. No. 301). For copings, a hard flag-stone two and a half to three inches in thickness, projecting two and a half inches on each side of the wall and having a

Doorways.

FRUIT WALL
FIG. 301.

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water-drip groove on the under side of the projection (Ill. No. 302), does just as well and looks much neater than more expensive forms of coping. Where stone is costly, a coping similar to that shown in the accompanying sketch (Ill. No. 303) may be adopted, consisting of bricks jecting courses of tiles or slates, and corbelling out brick headers under dentilled course would add very to build into the wall under the "board irons" on which boards may trees in the Spring, in the manner shown on the same sketches. The irons may be used later on to fix bird netting.

FIG. 302.

accompanying sketch (Ill. No. 303) set at an angle and resting on pro- if additional ornament is required, the tile courses so as to form a little to the cost. It is advisable coping, iron brackets known as be laid as a protection to the fruit

be laid as a protection to the fruit

*Wiring
walls.*

The ordinary and most economical method of wiring a wall is on the principle adopted for the espalier shown in illustration No. 307. The wires should be placed twelve inches apart, commencing eight inches from the ground and one and a half inches from the wall in order to allow the fingers to pass behind the branches when tying in. The necessary eyelets and fasteners for end straining bars should be built in as the work proceeds; it is a great mistake to break into the completed wall in order to insert them.

FIG. 303.

As stated in the previous chapter, when not provided for in a separate department, the vineries, peach houses and other glass houses are generally built against the South side of the North wall, which ensures the greatest amount of light and Sun, but they may also be built with an East or West aspect, and this is often the most economical method of treating fruit houses. The portions of the walls not occupied by glasshouses should be used for choice hardy fruit trees of varieties suitable for the aspect. Thus, on the walls facing South, peaches, apricots, Coe's golden drop plum and the better varieties of pears and apples may be planted, while walls having a Western aspect will grow excellent crops of apples, pears and plums, while the Eastern aspect will grow choice pears and plums. The Northern side of the North or South walls might grow morella cherries and red currants. It would be impossible to give here lists of fruit trees suited to all localities and soils; this subject in itself deserves, and moreover has, volumes devoted to it. Unless the object is to render a public service by experiments, the best of the varieties which are known to flourish locally should be planted. Fan-shaped wall or espalier trees should be planted only as young trees, but cordons or candelabra shapes may safely be obtained in fruiting sizes, especially pears.

*Fruit
borders.*

Fruit borders should be from fifteen to eighteen feet wide and, for the sake of symmetry, the same width from each wall. They require careful making, especially on heavy lands, where the whole of the surface soil should be carefully thrown back and a layer of broken stones, bricks, rubbish or burnt clay spread over the ground to a depth of at least ten inches, the ground having been first thoroughly drained. On the top of this rubbish, a layer of good turf from an old pasture should be spread or, if this is not obtainable, a layer of half-rotted stable manure; the soil may then be thrown back and more added until there is a depth of at least two feet with a rise of nine inches from the front of the border to the back. These borders can be used for the earliest crops of vegetables and salads or for strawberries.

In soils which do not lie on chalk or limestone, old mortar or wood ashes and also a sprinkling of crushed bones, should form a fractional part of the compost of the fruit border, otherwise stone fruits will almost certainly fail.

*Planting
fruit trees.*

The planting of the trees is not generally conducted with the care it demands. Not only is insufficient time allowed for the borders to consolidate before planting but

FIG. 304.—A BRICK-PAVED KITCHEN GARDEN WALK.

FIG. 305.—CENTRAL FEATURE IN THE KITCHEN GARDEN, THORNTON MANOR

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the roots are put in too deep and without proper arrangement. Instead of this they should be carefully spread out at the top of the border and the soil rounded up over them to a depth of four to six inches. No manure should be placed under the roots but added as a top dressing to induce surface rooting. In stiff clay soils, it is advisable to lay slates or tiles under the brick or stone drainage to prevent the penetration of tap roots into the cold subsoil.

Paths.

FIG. 306.

The paths may be made either before or after the formation and planting of the fruit borders, according to the amount of time available before the planting season, for nothing must be allowed to delay the latter work from one season to the next. Only when the garden exceeds four acres in extent will it be found necessary to make a cart road through it, but the walks should vary in width according to their use. The kitchen garden at Dunchurch Lodge (Ill. No. 295) presents a very typical example, and here the main walks were made nine feet wide and the minor paths six feet, widths which have proved ample. For gardens of an acre in extent the principal path might be as little as six feet six inches broad and the minor paths only five feet. In the kitchen garden it is possible to adopt a form of walk which would not be suitable for the flower garden or terraces, but whatever the material used, it is very important that they should be well made and efficiently drained as they are subjected to hard wear, and a poorly constructed path would soon be cut up by the barrows. A very good plan and one which can be made to look very effective is to lay a narrow band of York stone flag or "granolithic" patent stone along the centre of the path on which to run the barrows and to take, also, most of the pedestrian wear. If, on either side, this strip is backed up by cobble paving with a stone edging to the beds, such as that shown in illustration No. 306, the result may be very good, and has the further advantage that, after a shower, when the flat flags are very wet to the feet, the rounded surfaces of the cobbles lift one out of the water, which runs away between the stones. The gardener may object to the latter material on the score that weeding between the cobbles is tiresome work, but if they are laid in cement, no weeds will grow, while, in other cases, an occasional sprinkling of boiling water, especially if a little weed-killer is added, will completely remedy the evil. In a brick district, paving in red bricks, such as that shown in illustration No. 304, may be very charming if intelligently used, as it will give such a pleasant colour contrast with the greenery, an advantage shared with red shale and burnt ballast, which latter materials, however, have a troublesome way of picking up badly after a frost, that is, they stick to the boots in large heavy

FIG. 307.

masses, leaving holes in the path at every step. Even tar paving, which makes a pretty flower garden almost impossible, may often be used in the kitchen garden with success. It should not be used where the area of the paths is exceptionally large, however, or the emanations from the tar may have a deleterious effect of the neighbouring plant life.

Edgings to beds.

All the remarks as to stone, brick or terra-cotta edgings for walks given in Chapter IX. apply equally to the kitchen garden, but whichever of these is adopted, it should be laid in cement so that it may not be disturbed by digging operations. Grass is not suitable for edging ordinary kitchen garden paths unless in those rare instances where it can be laid in very broad strips, but it may be used where herbaceous borders line

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the walk. Occasionally a central grass walk nine to twelve feet in width, flanked by deep herbaceous borders and enclosed by yew hedges, secures a fine connection between the pleasure grounds and the kitchen gardens. Such paths may with advantage be edged

FIG. 308.—ESPALIER OF IRON THROUGHOUT.

with flat stone flags, as in illustration No. 155.

A proper water supply for the garden is important and, where this cannot be obtained in the ordinary way, large cisterns should be supplied for the reception of the

Water supply.

rainwater collected from the roofs of glasshouses or other buildings. However the water be obtained, it is much better if exposed to the sun and air for a few hours before use, and this is best done by the provision of a dipping well, such as has already been described when speaking of fountains. In most gardens, the best way is to make this feature the central object in the design up to which everything leads, and to place it at the intersection of the two paths across the centre of the garden, one running North and South and the other East and West. In many cases, one of these walks will be spanned by a fruit espalier, while the other will pass between the herbaceous borders, which in turn will be backed up by clipped hedges, so that whichever way one looks from the central point, an interesting vista will be provided, especially if each is closed at the opposite end by a pretty gate, fruit room, arbour, or the centre gable of a nicely proportioned range of glass. These considerations open up the opportunity for many delightful arrangements and justify the sacrifice of a little more ground round the dipping well for a circular or octagonal open space than would otherwise be conceded, so as to allow of garden seats facing the well with its fountain jet, and backed up by an arrangement of festoons of rampant roses supported on pillars, which are particularly useful in supplementing the flowers from the herbaceous borders for house decoration, or where more shelter is required, the clipped hedges which form a background to the herbaceous borders may be carried round the gravelled circle surrounding the dipping well, arches being formed in them over the paths where they cross them. Illustration No. 305 shows a typical arrangement of this kind.

Dipping wells.

FIG. 309.

Fruit tree espaliers and bowers are not only interesting structural features in the garden, but are also very economical, as they occupy but little space, and with properly trained, healthy trees, give a large return for the space occupied. These bowers also furnish a tempting opportunity, which the rigid culturalist and stern economist will pardon, to enliven the over-apparent expression of bare necessity in the modern kitchen garden with a wealth of roses, assigning the principal supports to them, with fruit trees in the interspaces. Such a bower walk may even be erected outside the kitchen garden, and lead from it towards the pleasure grounds or the garden entrance of the house.

Espaliers.

Espaliers are formed of iron, iron and wire, wood and wire, or wood and iron, or all three of these materials. Although espaliers constructed entirely of iron standards and strained

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FIG. 310 —THE FRENCH FRUIT GARDEN, FOOTS CRAY PLACE, KENT.

FIG. 311.—THE FRENCH FRUIT GARDEN, FOOTS CRAY PLACE, KENT.

wire are most usual, a freer effect is obtained by the use of wooden posts and top rail with strained wires passing through the posts as shown in illustration No. 307. Wood also allows of a more artistic treatment, and although, perhaps, rather less durable than iron, is better for the plants, as the cold iron checks the tender buds.

FIG. 312.—ESPALIER OF IRON THROUGHOUT.

The most usual iron espalier is that shown in illustration No. 308, and in a more elaborate form in illustration No. 312, the latter being used with effect in the gardens at Trentham, the long bower at this place being over-arched with pear trees.

Another arrangement of a similar kind may be made by placing a low espalier, such as the one shown in illustration No. 309, close to the walk and the taller one behind it, with a border between. The effect of this arrangement is clearly seen in illustration No. 310.

An effective espalier with wooden posts and bays of iron trellis between them is shown in illustration No. 313. As will be seen it is so designed as to meet a very considerable fall in the ground, and the trellis is arranged in a series of bays so as to give shelter to the flowers planted between. Another wood and iron espalier is seen in the accompanying views of the fruit garden at Foots Cray Place, just referred to, where ornament was the prior motive in its arrangement, the fruit branches being

FIG. 313.—WROUGHT IRON FRUIT ESPALIER IN THE KITCHEN GARDEN, WOOD, DEVONSHIRE.

trained to thin wooden laths in the French manner.

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The arrangement and training of fruit trees on espaliers has been brought to great perfection by the French horticulturalist, who by his special methods cleverly secures the greatest fruit-bearing capacity together with a very beautiful arrangement of branches. He aims at getting the greatest amount of fruit-bearing wood on any given area of wall or espalier. The branches, whether in the form of upright cordons, fan shaped, candelabrum or horizontal, are twelve inches apart; there is no waste of wall space yet no tree is allowed to encroach upon its neighbour. Here is a useful lesson which our Continental neighbours may teach us, as the method is in every way adapted to English gardens, and a successful example is given in illustrations Nos. 310 and 311. It is well to remember, however, that just as with us topiary work often degenerates into grotesque vegetable sculpture, the cleverness of the French gardener sometimes leads him to attempt absurd forms, such as tables, balloons, birds and beasts; which are to be avoided.

*Fruit
rooms.*

An important adjunct of the kitchen garden is the fruit room. Every hostess knows the risk and anxiety cherished tray of apples or pears, and spent on elaborate good keeping. A fruit room, such in illustration No. needed if grapes are for apples, much may be adopted. freshness of the earth, particularly served, and flowers a dug-out room (Ill. cluding the light and of air in order to evaporation. Above-built of match ally insulated with thatched on both (Ill. No. 317) are somewhat expensive. an entirely under- as that shown in

FIG. 314.—A FRUIT ROOM.

which could be covered over with a sufficient depth of earth to ensure an equable temperature. Compact planning would direct that this room be sunk under one of the garden offices or under the cold storage, or as an independent underground room with a roof of arched concrete, but in any case it will need a regulated ventilating shaft at each end, double doors at one end, and a small window opening on to an area at the other. A damp earth floor is essential to fruit preservation.

To explain and enforce the above remarks relating to kitchen gardens, illustrations are given of several designed by the Author.

Examples.

The first (Ill. No. 318) is the plan of a kitchen garden of nearly two acres, designed for a client in the United States, and illustrates a case where, on account of the peculiarities of the site, the garden cannot be square in shape. The site of this garden was previously cut up into a number of small plots containing frame cottages, which have now been removed to a more secluded position, and there erected according to an ordered plan. The garden required comparatively little grading, excepting at the North

and South ends. At the North it was found necessary to erect a retaining wall, and at the South or narrow end, to fill up some five feet. As is usual in America, hedges were planted in preference to expensive walls.

In illustration No. 319 is shown the kitchen garden at the Manor, Thornton Hough, Cheshire, the seat of Sir William Lever, Bart., and is a good instance of adaptation of the plan to the special conditions of the site, the garden of about an acre and a half being set angle-wise to the house but parallel to a boundary wall and bridle path. Here the primary object was to provide sheltered walks convenient to the residence and connecting directly with the principal terrace walks. The plan of this garden should be compared

FIG. 315.

with the photograph of its central portion given in illustration No. 305, which gives a good idea of the treatment of details. The effect, when the fruit trees are in blossom, is very fine indeed. This scheme is, of course, part of a connected formal garden, but the same principles might be adapted to many places where the

FIG. 316.

details would, for reasons of cost, be of the simplest description.

An effective kitchen garden placed close to the North side of a house adjoining the carriage court and generally embodying the principles and requirements already advocated is given in illustration No. 279. This garden is entered by a wrought-iron gate from the carriage court and a view is obtained from it down the central path of the garden, which is constructed on the principles already explained, terminating in a conservatory placed against the North wall of the garden, with plant and fruit houses arranged to right and left. Near the centre of the garden is a circular dipping well with a simple upright fountain jet, and on each side of the walk is a border six feet wide for hardy perennials, flanked by fruit espaliers. At regular intervals flower-grown arches span the walk, giving, as viewed from the Carriage Court, the appearance of a continuous bower, where along the level sheltered paths, surrounded by fragrant flowers, most garden lovers would delight to stroll. The evergreen shrubs flanking the conservatory would supply the necessary touches of green in Winter, and might be supplemented by bay trees in tubs at sheltered places, which would be by no means out of place in the kitchen garden, as in many establishments the leaves are indispensable for flavouring purposes.

FIG. 317.

There are three adjuncts of the domain so intimately connected with the kitchen garden both in planning and purpose as almost to form parts of it. These are the frame ground, the reserve garden and the orchard. The first of these, with its various erections such as potting sheds, tool houses, fruit rooms, places for ladders, wheelbarrows, garden rollers and lawn mowers, bins for composts and manures, and standing ground for chrysanthemums and other plants which require plunging, has already been mentioned in dealing with glasshouses, and it is only necessary to add that it is a wisely directed forethought which studies the comfort and convenience of the garden staff, especially where several young men are employed. In the critical season of a severe

Frame grounds.

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Winter, men living at a distance are liable to neglect the fires and the protection of their frames. If we are to maintain our national reputation in gardening, there must be a thorough system of oversight by the head gardener often extending beyond ordinary work hours. This necessitates the gardener's cottage and a bothy being placed at or near the gardens, as in illustration No. 298, and in direct connection with the frame ground. As it will be necessary for the whole staff to work under shelter on wet days, the sheds in the frame ground should also be ample.

In the illustration just referred to is given a drawing of the frame ground at Wych Cross, Ashdown Forest. This is part of an extensive garden laid out about eight years ago for Douglas W. Freshfield, Esq., and is supplemented by a stick and manure yard some one hundred yards distant but in convenient relation to it. It gives the accommodation which would be necessary in the frame ground for a moderate-sized country house. It is a part of the garden which does not to-day receive the care and

FIG. 318.

attention formerly devoted to it, though it would seem to be more necessary than ever, for it is here that so much of the best work is done, and upon its plan and arrangement depends, in a large measure, the tidiness of other parts of the garden. It is, in short, the gardener's workshop and warehouse for raw materials.

Reserve garden.

In most gardens, except those of very moderate extent, a reserve garden should be arranged for, or a grassy or garden orchard formed, a place where relief may be found from the effort and ambition of producing the largest fruit of the most striking varieties. The reserve garden has shorn grass paths with espaliers, damson, crab and cherry, and quaint fruit trees on the French system, with a wealth of herbaceous borders and overarching wreaths of roses, but is not so prolific as the garden orchard.

Orchards.

More romances of fiction and song have been laid in an orchard than anywhere else, for, if rightly considered, it is the one part of the domain above all others which speaks of seclusion, peace, quiet and rest, a close commune with nature and rural pleasures. It is the garden of romance and song, of birds and bees and flowers, of tender memories

KITCHEN GARDENS AND ORCHARDS.

and peaceful sights and sounds, where "Nature painteth all things gay," where the profuse Siberian and John Downie crabs vie with the apple and cherry blossom, and the free rambler roses, allowed here to clamber up the apple tree stocks, or in free and wild profusion, to form an embowering thicket, with the snug recess where are the bee hives amidst marsh mallows completing the picture. Here the grass may be allowed to grow up and exhibit its luxuriance and variety until its freshness begins to wane, variegated here and there, in the seasons of blossom or fruit, with drifts of daffodils or meadow flowers.

The sense of quiet remoteness and peaceful seclusion which is the chief charm of most old orchards is best attained by so designing them that they are approached through one of the flower-bordered or fruit-embowered paths of the kitchen garden, which is in itself an enclosed garden. Very often one main path through them leading to a quaint but simple gate communicating with the home park or a pleasant field path,

FIG. 319.

may be gravelled, but other ways about the orchard itself are better laid down with broad paths of closely shorn grass, and where they are enough used to make it difficult to keep the turf in good condition, a strip of the green Westmorland flag may be laid along the centre. This material may be obtained of a shade exactly suited to the purpose, and which so harmonizes with the colour of the grass to be quite in keeping. The boundary may be formed of a thick hedge of cluster roses, or better still, of the fruitful cut-leaved blackberry, festooning a rough wattle fence and allowed to grow high enough and thick enough to assist the air of seclusion.

While dwarf bushes will soonest yield an abundant crop of fruit, the orchard designed to form a part of the grounds of the domain will be more appropriately furnished with the older fashioned standard fruit trees. All the remarks regarding the planting of wall trees in the kitchen garden also apply to these, except, of course, that the young trees would be fastened to strong stakes let well into the ground, and that it is necessary

KITCHEN GARDENS AND ORCHARDS.

that the grass should not be allowed to grow within two or three feet of the stems until they are well established. When the fruit trees are well grown, the neighbouring kitchen garden will benefit by their presence, for they will form an efficient wind screen, and their free and unrestrained limbs appearing above or overhanging the fruit walls will give a pleasant note of contrast, especially when they are laden with blossom or fruit.

The chief charm of the typical English orchard is, as we have already said, its air of old-world peaceful seclusion, and in laying out a new one we should make the attainment of the same atmosphere, as far as is consistent with its surroundings and purpose, our chief aim. This can only be done by a very careful consideration of all the details and furnishings, which must be simple and unostentatious in their design and solid in their construction. Of course only a few accessories are possible, but we may have a simple circular seat round the base of an apple tree or a straight one with a tiled canopy or pent roof over it at the end of the principal walk.

We may even have an enclosed aviary with its details carried out in carefully proportioned trellis work after the manner of that which so often accompanies the verandahs and balconies of Georgian mansions, and of course there are gates, doors, fences, steps and other utilitaria on the design of which we may exercise artistic ability and taste. What could be more charming for instance than profuse masses of bloom overtopping a little lych-gate or seen in inviting glimpses through the open panels of a door in an arched doorway, or a fence constructed of materials which strike a local note, and swathed in masses of rampant roses, presenting not only colour and sweetness within, but providing a thorny reception to intruders and fruit stealers from without.

By this and similar means, the orchard may be made one of the most attractive portions of the domain, from early Spring to late Autumn. First will come the snow-drops nestling round the stems of the trees, to be followed by carpets of brilliant single daffodils accompanied by clusters of primroses on banks and under the fences, which in turn will give place to scented violets, but not before the whole orchard has put on its gorgeous panoply of white and delicately pink blossom. From the time this has disappeared until the fruit begins to ripen, the orchard will be gay with roses trained over the fences, and, after the main fruit harvest is over, the Virginia-creeper, trained over the arbour or lych-gate, may prolong its Autumn glory a little longer; and even in the depth of Winter, one or two old apple trees may be given over to the cultivation of mistletoe, so that throughout the whole year this delightful feature, with its stores of old associations, may provide variety and be attractive for its own sake.

FIG. 320.—THE GARDENS, LEVENS HALL.

CHAPTER XVI.

Of avenue carriage drives we have already spoken in another chapter, and those with which we now propose to deal belong to a different category, being purely a part of the ornamental portions of the domain and considered solely as a feature in themselves and not merely as an effective addition to a necessary roadway.

*Green
avenues.*

The opportunity rarely occurs for the formation of an avenue on the grand scale adopted by the gardeners of the Renaissance, such as the triple avenue at Badminton, two and a half miles long, as described by Kip, the centre space two hundred feet wide and the side aisles each eighty feet. They might however, be planted oftener than they are, but with due caution, let it be noted, because, being essentially an expression of stateliness, they should therefore lead up to some building of a scale and size sufficient to give them an adequate object on which to focus their pronounced lengthwise perspective and to close the vista.

A form, of which many fine examples are still in existence, is the radiating avenue, which generally consisted of a number of avenues starting from one point and intersected by others arranged in a similar manner. The accompanying illustration (Ill. No. 321) from "Loudon's Suburban Gardener" conveys a good idea of such an arrangement. While, however, the large square bosk and the two principal radiating aisles would certainly be impressive, such a multitude of avenues as is here shown would cover a large area of ground and would be pleasant only for use in the Summer months. Where there is an unlimited extent of fairly level parklands, and where the distant views are unimportant, radiating avenues, if designed so as to be strictly in scale with the central mansion, may however be very effective.

Both these classes of avenue are the accompaniment of architecture on a very large scale, and form a part of an extensive domain and thus lead to the question—"Are avenues to be the accompaniment of palatial architecture only?" I can only reply that I have never proposed one, excepting when it led up to an important building, considering an avenue of fully grown forest trees to be entirely out of scale with a small house; but there are many examples of moderate sized residences designed in the Georgian or Italian renaissance styles where short avenues, framing fine landscape views, are entirely in keeping. Such avenues are by far the most effective when placed on the East and West sides of the house, and, running East and West, they provide green wings to the mansion as viewed from the South front. In Continental countries these wings of foliage are used as a definite factor in the architectural composition and are pleached to a formal line. Usually avenues arranged on the North, East or West sides of a house are excellent as they give a fine spreading framework of trees as a background to the mansion, but they should not be allowed to monopolize the entire landscape, or, by approaching too near to the house, to shut out all views from the windows or keep it always in shadow, especially on the South side.

The best avenue is that formed of two straight rows of trees, or, if over five hundred

THE FORMAL ARRANGEMENT OF TREES.

yards in length, two rows of trees at either side. The length of the avenue and the scale and style of the architecture which it graces will decide the variety of tree to be planted, and regulate the width and distance apart. For an ordinary avenue of about a hundred yards in length, fern-leaved beech, ilex or other trees of moderate size would be most suitable, the distance between the lines of trees being not less than twelve paces, and the trees in the rows eight paces apart. For an avenue of five hundred yards, the trees might be of stronger growth, such as elm, lime, sycamore or chestnut, placed ten paces apart in the rows, the latter being from fifteen to twenty paces apart. To obtain an early effect, double the number of trees may be used and planted half the distance apart in the rows, alternate trees being removed as soon as they begin to touch each other.

A local note may often be struck by forming an avenue of some tree which is specially characteristic of the district, especially when the tree adopted is one not usually chosen for this purpose, but is known to thrive particularly well in the locality. Exceptional trees may also be used with great effect in exceptional circumstances such as the avenue of *Cedrus Deodara*, at Linton Park, Maidstone.

FIG. 321.

Where the ground on which the avenue is to be formed is at a much lower level than the floor of the house, spreading low-growing fern-leaved beech would, after twenty years' growth, have a pleasing effect when viewed from above.

*Woodland
glades.*

In forming a new domain in wooded country, the effect of a series of grass avenues may often be obtained by careful and discriminate clearances such as those shown in illustrations Nos. 155 and 156. The rough ground is carefully made up and either turfed or sown down and hedges provided on either side, young trees being planted, so that very soon, new and old together form a pleasing vista.

*Pleached
walks.*

Besides the avenues of full-grown forest trees, suitable only for use with imposing architecture, there are many other arrangements of greenery which partake of the same nature but which are useful where a large avenue would be out of place. The first of these is the pleached lime walk, of which examples may be found in many old gardens and which has always been a favourite device of the artist gardener both in this country and on the Continent. It forms a useful and beautiful feature in the garden and may be said to bear the same relative scale to it that the avenue bears to the park. While the latter, however, is a symmetrical arrangement of trees which individually are allowed to grow naturally, the former is not only planted in a formal manner but is afterwards trained and trimmed to a symmetrical design and kept strictly in scale with its surround-

THE FORMAL ARRANGEMENT OF TREES.

ings, as shown in the accompanying illustrations (Ill. Nos. 325 and 326). Owing to the possibility of keeping the pleached trees clipped to a definite size, the alley may be adapted to almost any position or shape, and, indeed, may be used in almost any case where a pergola would be suitable but where its expense is considered prohibitive.

Another avenue-like arrangement which may be usefully employed in almost every garden is the grove of small trees. A very usual form, and one which has a very prim appearance suited to use in the formal garden, is that provided by a double row of mop-headed acacia, which are perfectly hardy in a great many parts of England, but which seldom thrive in the northern counties of Scotland. Many other trees may, of course, be used, and some of our most attractive flowering species are eminently suitable, such as the mountain ash or rowan, snowy Mespilus, thorns, the Siberian and John Downie crabs, almond, the double-flowering and common cherry and *Prunus Pissardi*. Some foliage trees, too, are very useful, such as fern-leaved beech, cut-leaved alder and several of the maples, the two last, and also the lime and Turkey oak, being capable of being trimmed to any size. For groves or alleys which are to be used in the Winter, tall pyramidal-headed Portugal laurels, especially the small-leaved variety, sweet bays, bay-leaved and golden queen hollies on long clean stems are suitable, and should be arranged to run outwards from the South front of the house, i.e., running North and South so as to be sunny and sheltered from East winds. Such groves were often planted in old gardens and might be added to scores of existing ones.

Groves of small trees.

FIG. 322.

FIG. 323.

walk is to continue beyond the end of the colonnade, by an arrangement of seats under an arbour covered with climbers, as shown in illustration No. 322. It is, however, much better if a summer-house can be arranged to close the vista, and the connecting walks be made to join at right angles, as in illustration No. 323. The space between the rows of trees may be arranged as a grass walk or as a gravelled path with grass on either side (Ill. No. 324); the former being the more artistic while the latter is more serviceable and easier to keep in order. A better but more expensive method is to have a paved walk, with the same arrangement of trees. In spacing out the trees, grass, hedges and walks, due regard should be paid to the character of the trees to be planted. Thus if thorn or crab are to be used, the distance between the hedges should not be less than twenty-five feet, the width of the walk being not less than six feet. Grass looks extremely well at the sides if properly trimmed, but it should be kept clear of each hedge by at least nine inches, and a small circular soil bed should be formed round each tree. If, as the trees grow larger and produce more shade and drip, the grass becomes thin and impoverished, a kerb may be put at each side of the walk and the space previously occupied by grass be planted with *St. John's Wort*, *Rhus racemosa*, *Gaultheria Shallon*, *G. procumbens*, *Vinca*, or common Irish ivy. *St. John's Wort* and the various *Vincæ* of which the common periwinkle is one, are the most effective of these shade-loving plants for the purpose.

FIG. 324.

THE FORMAL ARRANGEMENT OF TREES.

FIG. 325.—THE LIME WALK, TRINITY COLLEGE, OXFORD (WINTER).

FIG. 326.—THE LIME WALK, TRINITY COLLEGE, OXFORD (SUMMER).

THE FORMAL ARRANGEMENT OF TREES.

Yet another formal arrangement very similar to the last is the yew alley or bower walk which should be found in every garden of moderate dimensions, whether formally or informally planned. Probably the best known of the old examples is the "Dark Arbour" at Melbourne Hall, Derbyshire, and such scale and perfect arching must always be the result of many years of careful clipping and training, but nevertheless a good effect can be obtained in reasonable time if a start is made with large plants under favourable conditions. These walks can often be arranged where a grove or ordinary pleached alley would not be successful. They give sufficient seclusion from without and yet keep open the garden vistas within, affording shade from burning sun or sufficient protection to give an impression of shelter when winds are boisterous.

Bower walks.

FIG. 327.

Those who have studied the architectural drawings exhibited at the Royal Academy during recent years must have been struck with the number of designs in which trimmed hedges form part of the scheme, some of them being largely dependent on the hedges for their interest. Their definite lines and the accompanying walks assist the architectural groupings and furnish an extended base to the main building; they

Formal hedges.

impart an idea of shelter in most weathers and suggest screen for half-hardy flowers. They do more than this however, for they emphasize the varying colour and form values of haphazard picturesque groupings of foliage and give the necessary contrast, binding the whole together by the strong sweeping line which they present.

In the modern garden, however, hedges are seldom recognized as possessing any artistic qualities. Occasionally, a trim, compact hedge may be met with, dividing the kitchen garden from the pleasure grounds, or as a screen to back premises, but both its planning and treatment, or rather lack of distinctive treatment, make it obvious that it is merely considered as the lesser of two evils—a brick wall or a hedge—and that the owner, being unable to bear either the idea or the cost of the former, has adopted the latter. No attitude could be more disastrous to good garden design, and with the wealth of old examples which escaped the general destruction which befell the beautiful old formal gardens in the early-Victorian era, there can be

FIG. 328.

no excuse for the purely utilitarian treatment of these æsthetic factors. The wonderful hedges at Holm Lacy show what can be accomplished by the use of green fences, while the well-known green arches at Broom Hall, Norfolk, suggest many arrangements which may be used where an ordinary hedge would give too shut in an appearance.

As a rule, the simpler forms of clipped hedge are most satisfactory, because they express their purpose without pretence and are much more likely to be kept in shape than those requiring great skill in clipping, but as simplicity may be expressed in many ways, there is no reason why there should be any lack of variety. Even a hedge bounded entirely by straight lines may be diversified in many ways, by the ordinary square crenellations or by pilaster projections arranged at intervals of about twenty feet, or to mark the sides of an opening made to admit a pathway. There is also the usual form of straight "jump" or alteration in height made to meet the fall of the ground or

Design of yew hedges.

THE FORMAL ARRANGEMENT OF TREES.

allow of a few feet of higher hedge against a building (Ill. No. 327). To these modes of treatment may be added several which are not quite so simple, such as the raised semicircular "rounds," as shown in illustration No. 328, while the reverse of this treatment, or a series of sweeping hollows cut out of the level top of the hedge, with short level portions left between every hollow and the next, though difficult to trim correctly, is most effective where a beautiful expanse of distant hill and valley is framed in the semicircular openings. Either of these useful shapes may be further elaborated,

FIG. 329.

FIG. 330.

should the surroundings call for it, by the addition of pilasters between each two rounds; or these again may be surmounted by heads clipped to a ball shape or half ball, with or without whorls below, or to the shape of sugar-loaf finials.

FIG. 331.

FIG. 332.

Most of these arrangements demand that the hedge shall be trimmed perfectly square in section, i.e., with vertical sides and a flat top; but this is not always the best section for ensuring a strong hardy growth. The nurseryman and forester, on the one hand, and the architect on the other have completely different views on this matter. Both the former would keep the hedges wide at the bottom and narrow at the top, as shown in section in illustration No. 329, because hedges so trimmed make strong lower branches, and a dense, close bottom is obtained. Architects however, from artistic motives, generally prefer hedges trimmed square on the top (Ill. No. 330), and the gardener usually enlarges upon this by allowing the top to over-hang, as in illustration No. 331, with the result that the hedge gets poor and open at the bottom. The pointed section preferred by foresters (Ill. No. 332) does not look so prim as the square shape, but for practical reasons is undoubtedly the best. By a little care, however, the advantages of the one shape may be combined with the primness of the other, by keeping the hedge pointed while young, and when a good strong bottom has matured, by gradually allowing the top to grow outwards until it can be trimmed square.

*Objections
to hedges
considered.*

FIG. 333.

Many gardeners who, in most things connected with their craft, are excellent men, have an unwarrantable dislike to hedges, which they allege rob the soil of nutriment and harbour every known garden pest, making successful flower growing impossible, or at the best, disappointing. While it is true that trees and shrubs harbour pests, the idea that they make

FIG. 334.

flower gardening impossible or even difficult is altogether erroneous. A bed of lettuces in the middle of a fifty-acre field, half a mile removed from hedges, would receive greater attention from these pests than a whole flower garden with hedges and box edging covering half the ground. Granted, however, that there is some truth in the gardeners' contention, and add to it the further objection that the roots of the hedges absorb the nutriment from the soil, the shelter which they give to the plants is an excellent compensation for these drawbacks. When the necessary outlay can be afforded, the impoverishment of the borders may be completely prevented by building a wall some three feet deep into the ground between the hedge and the border, its top being level with the ground, as shown in the first sketch (Ill. No. 333). Where this plan is too costly, it is

THE FORMAL ARRANGEMENT OF TREES.

advisable to have a grass walk, as broad as possible, between the hedge and border, as shown in the second sketch (Ill. No. 334).

The number of different trees or shrubs which may be used for forming clipped hedges is very large. There is no doubt, however, of the pre-eminence of yew for this purpose, wherever the conditions are at all normal. Not only has it the advantage of possessing the sentiment which must inevitably cling round the material from which the trim hedges of the old-fashioned English garden were formed, but there is something in its habit which gives it a quiet homelike appearance which is unattainable in other materials, and which is so obvious in the accompanying photographs of the gardens at Levens Hall (Ill. Nos. 336 and 337), while its colour is an ideal shade against which to display the brilliant hues and bold foliage of the old-fashioned hardy perennials. Where yew is not used, the best and most permanent evergreen hedges are formed by holly, tree box, *Cotoneaster macrophylla*, *C. Simonsii*, *C. buxæfolia*, *Ligustrum ovalifolium*, (oval-leaved privet) or sweet briar. Privet is practically evergreen and, in fact, entirely so in mild winters when the old leaves remain until the new ones push forth. Sweet briar is really deciduous but, as the stems are of a bright green colour, it may almost be considered as an evergreen. There are also numerous varieties of *Arborvitæ*, *Cupressi*, *Retinosporæ* and *Juniperi*, nearly all of which stand trimming while the several varieties of *Laurus*, *Cerasus laurocerasus*, and *C. rotundifolia* are useful. Even Scotch and spruce fir, when grown under favourable conditions, form most excellent hedges. In some parts of Scotland, particularly in Aberdeenshire, the former tree is largely used for hedges of fields lying in exposed positions, and that they will stand trimming is shown in the forests along the Dee-side, where thousands of them may be seen which have been trimmed into dwarf symmetrical bushes by the deer.

The best materials for deciduous hedges are undoubtedly beech, hornbeam, thorn and myrobellia plum. Of these the most suitable are beech and hornbeam, and the latter is probably the best of all deciduous hedging plants for use in the garden.

A very economical and effective fence between small gardens and the highway may be made by planting a prim hedge, say of privet, behind plain railings, and trimming the former a few inches above the top of the latter. In this way effective use may even be made of that otherwise unæsthetic material known as unclimbable iron fencing, as shown in the sketch (Ill. No. 335).

Most of the hedging plants named above may be obtained from good nurseries in almost any size and in some cases a nurseryman will sell the half-matured hedges dividing his nursery quarters. When an already well-grown hedge is to be transplanted, it should be prepared for lifting at least six months before it is required. The best plan is to purchase in the early Spring and prepare the plants by close root pruning and then remove in the Autumn. Where there is no hurry, however, it is better to start with small plants, as they make more perfect hedges than larger transplantations, which are liable to lose their lower branches.

For formal pleasaunces or the more decoratively treated portions of the gardens, there are very few positions where a hedge composed of more than one variety of tree could be successful, unless a privet hedge is planted between the garden and home park, when thorn may be inserted to keep back cattle, but, in the home park or even in the wild garden, delightful effects may be obtained by mixing two different species. Thus,

*Materials
available
for hedges.*

FIG. 335.

THE FORMAL ARRANGEMENT OF TREES.

FIG. 336.—THE LADIES' GARDEN, LEVENS HALL.

FIG. 337.—HERBACEOUS BORDER IN THE LADIES' GARDEN, LEVENS HALL.

THE FORMAL ARRANGEMENT OF TREES.

privet and thorn, privet and hornbeam, holly and hornbeam, hornbeam and thorn are all suitable, while beech and holly together make one of the most delightful combinations possible in the Winter months, for the beech, when clipped, retains bright russet-coloured leaves until the Spring, and the combination of these with the dark rich green of the holly, backed up possibly by a blue misty distance or a carpet of snow with its delicate half-tints, provides a feast of colour at a time when Nature is generally rather drab, which appeals vividly to the trained colour sense of the landscape painter.

Hedges of more than one species of tree.

To form the ordinary white thorn or quick hedges, the plants should be bought when a foot or fifteen inches high, and placed in double rows about five inches apart any time from November to March. The following April they should be cut down to three inches above the ground, and afterwards, as the growth permits, trimmed to the desired shape, after which they should be kept annually trimmed. It cannot be too strenuously insisted upon that the ground must be trenched and cleaned before planting, and nettles, noxious weeds and long grass must be systematically kept under as they shut out light and air from the stems, and harbour pests.

Planting thorn hedges.

FIG. 338.

The accompanying sketch (Ill. No. 338), shows such a hedge on a cop of earth with the usual ditch at one side. Whether a raised cop is possible or not, some sort of a temporary fence should be provided to prevent the young hedge from being damaged by cattle, and in very exposed positions wattle hurdles will be best, as they will provide shelter from keen winds for the young and tender plants.

Openings through clipped hedges may, by a little contrivance, be made very effective, as, when several arches cross a walk one behind the other, as at Alton Towers, Staffordshire, or where a single or double continuous arcade of clipped arches runs alongside or on either side of a walk, making a many arched bridge of greenery such as that at Broom Hall already referred to, or, more beautiful still, because more quaint, the similar arrangement at Cleeve Prior. The shadow effects thrown on the surrounding ground are very fine, but the shelter, which is the chief use of a hedge, is partially destroyed, while, unless further provision is made to prevent them, draughts sweep under these arches and make it difficult to grow flowers successfully in their immediate vicinity. To attain any measure of success in growing and trimming compact arches means time and care, and probably the aid of a wood or iron framework will be necessary to train the wayward branches.

Treatment of openings in hedges.

Topiary, which is such a typical feature of the old English garden, suffers nowadays, from the absurd uses to which it is put, thus bringing the whole art into ridicule. Instead of an orderly arrangement of trees clipped to designs which bear some relation to their arrangement and surroundings, we have a heterogeneous collection of wild beasts, ships, peacocks, balloons and, worse still, arm chairs which cannot be sat upon and which are all the more disappointing if placed where a real seat would be welcome.

Topiary.

As a typical example of the right application of topiary we may instance the very usual use of a yew arch over a little white painted gate opening on to a cottage garden, the whole surmounted by a pair of doves, emblematic of domestic felicity, or the perpetual reminder shown in illustration No. 340, which the writer came across in another cottage garden.

Simple forms are always best, the raised ridges shown in illustration No. 339 would

THE FORMAL ARRANGEMENT OF TREES.

prove much more effective than the elaborate cones, obelisks, columns, spheres, spirals, domes, bottles and corkscrews, canisters, and so forth, of which we have too great a profusion. The shapes adopted should be complementary to the existing lines. Where, as at Blickling, there is an abundance of erect-growing conifers, and upright lines predominate, perfectly flat-topped beds of yew are in keeping, but where, on the contrary, there are a number of horizontal lines and flat surfaces, as at Montacute, the

long lines of obelisk-shaped yews are equally effective. The requirements of every garden cannot, of course, be so easily gauged or dogmatically determined as in these cases, nor is this desirable, as monotony would be sure to result. There is ample scope for the exercise of ingenuity in this direction which leaves no excuse for the wearisome repetition of old shapes. If the surroundings fail to suggest some new and simple form, incentives may be gleaned from old cottage gardens, unless shrubs which have naturally a decidedly formal shape will fulfil all requirements.

While there are many trees which will stand clipping to artificial shapes, box and yew stand unequalled for the purpose, and nearly all the clipped shrubs in this country are either in one or the other of these materials or in holly. Box is best where dwarf clipped shrubs are required, while taller pyramids and cones are better in

yew or holly. The numerous small leaves and branches so compactly placed allow of its being trimmed to almost any shape, which it will retain long after clipping, and it has also the advantages of being one of the longest lived shrubs we possess, and of thriving in most soils and atmospheres. In addition to the common kind, there is the Handsworth box, an effective variety with a beautiful blue-green sheen, and also the golden box, which looks pretty when trained to a dwarf cone.

The best variety of yew is undoubtedly the common one, *Taxus baccata*, but there are others almost equally serviceable for clipping. *Taxus elegantissima aurea* can be obtained trimmed into many shapes, such as obelisks, mole hills, cubes and pyramids. Standards may also be obtained consisting of mushroom-shaped heads of this tree grafted on to Irish yew, the heads, with their bright golden colour, contrasting admirably with the dark green of the Irish yew below (Ill. No. 341). Another variety deserving of more attention than is usually bestowed upon it is the *Taxus adpressa stricta*, which is somewhat darker than the common variety and more compact in habit. It makes a beautiful pyramid and requires little attention.

Of hollies, the common variety is the best, and for trimming to some shapes is the only one possible. The golden queen, *Ilex Aquifolium albo-marginatum*, *I. minorca* and several others make capital pyramids, while Waterer's golden holly, is a slow-growing and compact, but most useful variety.

*Trees for
clipping.*

FIG. 339.

FIG. 340.

THE FORMAL ARRANGEMENT OF TREES.

Those who have seen the terrace gardens at Trentham, will remember the effective standard Portugal laurels in tubs arranged at regular intervals along the main walks; in such a form this hardy shrub always appears to advantage, while the small-leaved variety, *Cerasus lusitanica myrtifolia* is excellent for clipping either as a standard or in hedges. Few people realize how fine *Cerasus Laurocerasus rotundifolia* does not last more than ten or twelve tangle of small sticks under close and inexpensive, and which can be

For clipping, no deciduous tree fern-leaved beech, which stands severe green of the foliage in Spring is it has assumed more sober hues, beautiful narrow serrated leaves and pink thorns, which will also, of course, stand clipping, are inferior in effect to the fern-leaved beech, but are often useful.

FIG. 341.

a pyramid can be made out of the when skilfully pruned. Although it years, as it becomes bare and a trimming, a shrub so accommodating so easily replaced, is often useful. is so effective as the little known cutting and trimming. The light pea delightful, and in the Summer, when there is much to admire in the its peculiarly neat habit. White or

Clipped trees are not, however, invariably essential to a formal scheme, for there are conifers and shrubs which have naturally a decidedly symmetrical outline. The best is unquestionably the Irish yew, which together with the golden variety, *Taxus hibernica aurea* will suit most positions and requirements. They form excellent supports to steps, or to flank the doorway to a porch or garden house, and are also useful when planted at intervals in front of a long bare wall, to break up its surface, and flourish in most soils, positions and atmosphere. Another elegant conical-shaped conifer, *Cupressus Frazeri*, distinguished by its neat habit and beautiful glaucous foliage, may, in districts favourable to conifers, or on light sandy soils, be even more effective than the Irish yew. *C. erecta viridis* is very good when in a young state but usually needs renewal every five or six years, as it gets very bare in its lower branches. *Juniperus hibernica* and *J. chinensis* are also both very effective conifers of upright growth and good colour. With a little knifing, the following may also be kept in good shape, viz:—*Cupressus Lawsoniana*, *C. lutea* and *C. argentea*, *Retinospora squarrosa*, *R. plumosa* and *R. plumosa aurea*, which are all more or less upright in growth. Among the dwarf varieties may be mentioned *Cupressus Lawsoniana nana*, *Chamæcyparis ericoides*, *C. lutea nana*, *C. leptoclada*, *C. filicoides* and *C. Lycopoides*. *Biota elegans* is a charming dwarf-growing conifer with a pleasing bronze shade of colour. *Cupressus macrocarpa* and its golden variety are two of the best conifers for the formal garden and are especially useful near the seaside. They are of rapid growth, and although not neat in habit when allowed to grow naturally, may be trimmed to a pyramidal form of either round or square sections, and specimens ten or twelve feet in height may be grown in four years. Sweet bays, which may be obtained either as pyramids or mop-headed, also harmonize well with a formal treatment, as do mop-headed *Acacias*.

Few deciduous shrubs having variegated foliage equal *Cornus elegantissima* in colour. It is much superior in both habit and hardiness to the *Acer japonica variegata*, and, whether used as a bush among conifers, as a standard at intervals along the sides of a walk, or as a pyramid in the formal garden, is to be commended. Certain Japanese *Acers* make charming standards, but unfortunately succeed only in very mild and sheltered localities. Where, however, gardens are favourably situated, and the soil is light and sandy, nothing could be more charming; they resent clipping, but may be kept shapely by simply trimming straggling branches. Brooms are among the hardiest varieties of flowering shrubs sufficiently neat in habit to warrant their inclusion in the formal garden, and some of them, when grafted on the common laburnum, make excellent standards. The best varieties are *Genista pallida*, *G. p. præcox*, and *G. alba*. The golden or

Trees of naturally formal habit.

THE FORMAL ARRANGEMENT OF TREES.

white balls of colour which these plants produce in Spring, and the fragrance of their blossoms are sufficient in themselves to make any garden attractive for the time being.

*Dwarf
topiary.*

Dwarf topiary work stands in a class by itself and is quite distinct from the ordinary topiary, though it often accompanies it. It consists of patterns, generally repeating scrolls, worked out in lines of dwarf box, trimmed very close and on a background of gravel. While there are examples which show that this class of gardening is capable of great development, its usual application is the formation of a garden in a position which is too cold, damp and over-shadowed for successful flower growing, and which the owner was at a loss what to do with. Under such circumstances it is not surprising that the vision called up to the mind by the dwarf topiary garden is a somewhat depressing place, shut in on all sides, and where even the hardy dwarf box shows evident traces of a hard struggle for existence. If, on the other hand, dwarf topiary work is used for decoration of the most formal terrace of all, between the architecture and the first flower garden, it may be most effective, but even here it must be carried out on a somewhat large scale or it is apt to look a little out of place. It is essentially a feature suited to large gardens.

*Filbert
walks.*

Before closing the subject of formal trees, the old-fashioned filbert walks must be mentioned. Not only are these very pleasing features with their fresh green foliage and cool shade, but are productive also and are content with the sustenance to be derived from mere garden rubbish, or almost any stony barren soil. They were welcome inclusions in the old gardens and were usually planted on the outer fringe of the more formal portion, where they helped artistically to merge the trim garden into the landscape beyond. Of late years, filberts have been neglected, but results such as those read of in old gardening books may of course, still be secured. Growers of cob and filbert nuts are agreed that much better results can be obtained by trimming or pruning the branches than by shearing or pleaching, while the effect is equally good, if care be exercised in the knifing. By knifing is meant the trimming of branches separately by secateurs or garden knife as opposed to shearing or clipping. Cob and filbert nuts look most effective when planted one foot six inches to two feet apart in the rows, but the heaviest crops are secured by planting not less than four feet six inches to five feet apart.

FIG. 342.—PLANTING AT LEWISTON MANOR, DORCHESTER.

FIG. 343.—PLANTING BY THE LAKE, "WOOD," DEVONSHIRE.

CHAPTER XVII.

As time goes on and the appreciation of the garden grows greater and more widespread, especially for the quaintness and studied charm of the old English formal parterre, it is more and more evident that the revival of interest in the one direction has been attained at the expense of others, for, while the garden makers of a hundred years ago could see no beauty in any form of gardening which was not a direct attempt at imitation of Nature, they planted all those magnificent plantations and groves of trees which we are enjoying to-day, and which, unless a sudden change of policy takes place throughout the country, of which there are at present no signs whatever, posterity will be entirely bereft.

Neglect of picturesque planting.

It is not so much that we are not planting, as that we are not giving that care and thought to the creation of the picturesque which animated the planters of past generations. This is, in a measure, accounted for by the swing of the pendulum from the extremes which a too zealous and indiscriminating desire to reproduce the beauties and immensities of Nature in half an acre of ground led the old gardeners into. Their eccentricities in other directions have discredited their only great and really successful work, and now it would seem that we are about to run to the other extreme and admire only that which is formal, and the immediate accompaniment of architecture.

Another cause of this state of things would seem to be a lack of that educated imagination which will allow us to see, in the mind's eye, the ultimate effect of a newly formed plantation. It is quite easy to predict the result when an avenue of young horse chestnuts shall have reached maturity, and so we plant in straight lines, but to grasp the meaning of a new mass of planting is a totally different matter, and involves a careful estimation of probabilities. In the young and newly planted group of trees, the eye is first attracted by the nursers and undergrowths which are already bushy in habit and have a substantial appearance. The very weedy and unattractive-looking saplings which will some day give the whole its effect are not by any means things of beauty, and the Writer has even been asked by disgusted clients why such "toothpicks" and "gaspipes" were included, when the small hollies, mahonia, privets and so on gave so much greater immediate result. It would seem as though many people had no power of seeing anything beyond the *status quo*, and thus we get a great deal of unintelligent criticism of the planting of modern gardens, "like a tea garden with a lot of little shrubs."

Lack of imagination in modern planting.

With the planter of a hundred years ago this was not the case. He was content that his work should be judged, very largely, by posterity, consequently his designs were so framed that they would develop as the trees he planted so lavishly reached maturity. He had been to Nature and studied her methods, had noted how in mass as a part of the landscape, and in detail as one examined each portion, her work in the woodland was

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unsurpassable, and that in his own craft, if it was to be successful, he must be content, like Nature, to work for many years, with sustained and unflagging effort, taking her for his guide at every point and studying her excellences.

It would be impossible, within the compass of one short chapter, to trace to their sources all the pleasures to be derived from woodland and forest. It is even impossible to examine in detail Nature's methods in their production, and we can only point the way to these ends, leaving the reader to apply the broad principles indicated.

*Choice of
material for
planting.*

The first practical question the planter must face is—Of what materials shall the plantations for a given site be composed? This will need fresh consideration in every case, for what will thrive in one instance will not in another; and, again, much will depend on the scale of the planting. With regard to the first of these considerations, the planter cannot do better than rely on his observation of what trees are found to succeed well in the immediate neighbourhood, coupled with the information he can gain by a visit to the local nurseries, and by talking to the nurseryman. Due allowance will,

FIG. 344.—POPLARS IN THEIR NATIVE ENVIRONMENT.

however, have to be made for the tendency of the professional arboriculturalist to disparage that which is common, and to admire only that which is rare and difficult to obtain. That a thing is common, other things being equal, should predispose us to plant it, for it is sure to succeed, and a commoner variety of tree growing luxuriantly must always give infinitely greater pleasure than a rarer one desperately struggling for existence against adverse conditions. Too many gardens are spoiled by this defect.

This local information is most important, for, if we are tempted to generalize or work by rule, we may be sadly undeceived later on. Thus, in the English Lake District, where, to quote a local saying, "if you thrust in your walking stick it will sprout," we might be tempted to imagine that there would be no danger in planting such a common and hardy-looking subject as *Euonymus japonica*, which, however, we should find would not do at all well. On the other hand, we shall discover, growing up the wall of the Scotch crofter's cottage, a delicate-looking and beautiful climber, the *Tropæolum speciosum*, or flame flower, which is exactly the kind of thing which we should expect to benefit by shelter and careful cultivation, and yet large sums of money have been spent in the vain endeavour to make it grow in some positions in the South of England.

This careful study of local conditions has another aspect, for by this means we shall preserve the individuality of the locality. Thus, Groombridge, in Kent is noted for its holm oaks (*Quercus Ilex*), and North Hertfordshire for the box trees, which sometimes reach a height of twenty feet, and the most should be made of such local factors.

PLANTING FOR LANDSCAPE EFFECT.

There are, however, several broad generalizations which may be applied carefully to all cases. Thus it is obvious that very bizarre-looking things, such as the monkey-puzzle tree (*Araucaria imbricata*), will clash with all their surroundings, and should never be employed except in collections of arboricultural curiosities. Again, geological conditions will have their determining influence, for there are many things that will thrive on sandstone which will die on lime or chalk, such as rhododendrons and American shrubs, while other things, such as holm oaks, prefer it. Then, at the seaside, we shall become aware that our choice is very limited, and we shall probably plant mountain ash, beech, oak and holly extensively, for lack of other large trees that will thrive. A smoky neighbourhood will again limit our material very much, and we shall have to rely for many of our effects on two or three kinds, such as the London plane and the various poplars, with dogwoods, elders and rhododendrons for undergrowths. Such a neighbourhood would be fatal to many other trees, such as Scotch firs, which one often finds planted where they cannot possibly succeed, under the impression, no doubt, that, as they are hardy enough to brave a Northern winter on an exposed site, they will succeed anywhere. The portion of the British Isles in which our planting is to be done will also enable the experienced planter to eliminate unsuitable subjects from his list of possible useful varieties, for there are many trees which, while they will luxuriate in a sheltered position in the Thames valley, would die at once in the Northern Counties.

The amount and depth of soil available is also important. Thus ash and sycamore require a good soil, while pines, oak

and beech are less exacting. Birch will grow with very little soil indeed and, in English mountain scenery, may often be seen gracing the face of a barren precipice, where it grows out of a cleft in the rock only big enough to take the stem.

This brings us to another point arising directly out of these considerations, and this is that, by planting those species which are indigenous, we shall obtain effects which harmonize well with the local scenery. Those trees that possess a habit helpful in the composition of a scene will invariably be found to accompany it. The instance just quoted of the silver birch adorning the rugged precipice with its graceful feathery foliage is a case in point, and there are many others, such as the Scotch fir standing boldly out against the sky, its dark rich foliage and red trunk harmonizing or contrasting pleasingly with the purple heather and bright orange soil of broken banks, as we see it in perfection in Surrey, the rich evergreen of the holm oak and yews against white chalk cliffs, the graceful willow hanging over and reflected in pools of still water, and the tall Lombardy poplar, with its strongly marked vertical habit, contrasting with the prevailing horizontal lines in sky and landscape so characteristic of flat marshy districts,

*Aids to
choice of
material.*

FIG. 345.—POPLARS IN UNCONGENIAL SURROUNDINGS.

*Obtaining
harmonious
effects.*

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which are their natural home. The result of disregarding these considerations is well shown in illustration No. 345, which gives a view of a row of poplars divorced from the plain to which they belong, and placed among hills. The straight lines clash horribly with all the undulations and variations of the scene, whereas we have only to remember the works of contemporary French artists who have painted the pastoral scenery of the great French plain, to be reminded how effective such a row may be in its proper place, giving a much-needed line receding from the eye, whereas all the others on an open level plain run directly across the line of sight. The effect in the illustration just referred to would be still worse if it were not for the horizontal lines which water always provides. Contrast this with the other photograph given on the same page, in which there are no hills to compete with the vertical lines of the poplars, but, instead, still water emphasizing them. Nothing could be more delightful, and a careful comparison of the two may teach us much.

Scale and mass in planting.

Having thus demonstrated how suitability to environment will influence our planting, there still remains the question of *scale*, which will also help to determine what we shall plant. This question may be considered in two ways, first as to the size of individual trees when fully grown, and secondly as to the extent of each plantation. Both aspects will, of course, bear a direct relation to the size of the domain which is to be planted, for, in one place, the slope of a hillside may be clothed with timber for half a mile or more in one mass, while in another there may be no opportunity for anything beyond a plantation, say, fifty yards across. Apart from this, however, the proximity of architectural features will have a controlling influence, for it is obvious that planting on a formal balustraded terrace would have to be completely subordinated to the general architectural scheme.

In the majority of cases, but by no means in all, architecture is much helped by a background or flanking masses of foliage, and even where the building is small, such foliage masses can hardly be on too large a scale, for there is no sense of lack of proportion felt on beholding even the tiniest cottage backed up, or even almost overhung by towering elms or pines. Instead, the greater the contrast, the more we are impressed with a sense of protection afforded from Winter storms and Summer heat.

In the case of a classically detailed mansion this does not apply to the same extent. Here there will have to be a definite relationship between the scale of the main façade and the foliage back-ground, while in some instances, as in the case of Lees Court, Faversham (Ill. No. 128), the severely symmetrical arrangement would not allow of competing foliage.

Apart, however, from their use as a background for architecture, we shall find it the rule that the larger trees and more extensive plantations shall be kept at a considerable distance from the main building, and that, the nearer we approach to it, the smaller the scale of plant employed should be. Even a broad grass avenue of forest trees, leading the eye away from the house to the distant boundary, should have its commencement at a sufficient distance from the mansion, as explained in the chapter dealing with this subject.

Wrong views of scale.

In the days of Capability Brown, the reverse was often done in order to create a false sense of perspective. The idea was that, by planting larger trees at the near end of a vista and smaller ones at the other, an appearance of greater distance would be obtained, especially if, as in many cases, a summer-house or other erection to a reduced scale were placed at the far end of the view. The result may have impressed the spectator with its ingenuity on first beholding it, but the deception would become wearisome on repetition, and would also completely spoil the view of the house from the other end of the vista.

Repton, in determining the scale of his plantations, adopted a saner course. His plan was to provide a number of poles, say ten feet high, which were then held up

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vertically by workmen in various positions where planting was proposed, while he walked about and examined them from every point of view. By imagining a tree or group of trees the height of the poles, or one, two, three or four times their height, he was enabled to judge the ultimate effect of planting species which would attain to ten, twenty, thirty, or forty feet high, and so ensure that nothing would be out of scale from any

Repton's methods of judging scale.

point. It is hardly necessary to point out that, unless some such method is employed, trees may be in scale from one point of view which will appear quite out of proportion from another.

Suitability and scale having very largely determined what we shall plant, it now remains to consider the disposition of the plantations, their size and outline, and the arrangement of the various trees and undergrowths in each.

As we approach the individual task we shall almost invariably find that there are three primary considerations which will help to determine the answers to all these

Disposition of plantations.

questions. These are, the need for shelter for the residence and flower gardens, the disposition of existing trees which must be incorporated with the new work, and the need for screening unsightly objects or giving privacy where the grounds are overlooked from public places. If we add to these three primary considerations the rule for planting which Repton so well enunciated when he said that, to make a garden successful, one should "plant the hills and flood the hollows," we shall probably find that the question of the disposition of the plantations is very largely solved, and their extent also within very narrow limits. That to plant the higher ground and leave the lower as open glades, with or without water, is the right thing to do is obvious for by so doing we increase the apparent differences of level and give our trees added height. The value of a vista down an open valley between wooded banks is too well appreciated and too often enforced by the works of landscape painters to need more than mention, again showing that this is right. The same course will determine the outline of the plantation, for, where the hillside throws out a spur, the trees should come forward and emphasize it, and where there is a bay of lower ground between two spurs, the trees should recede, thus giving an easy flowing line to the plantation which cannot fail to be pleasing.

FIG. 346.—GROUP OF OAKS.

FIG. 347.—GROUP OF YOUNG OAKS.

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*Outlying
groups
round large
plantations.*

Such a plantation of forest trees may often be greatly helped by planting, at suitable points, outlying masses of thorns or other native trees of lesser growth, but this work should be done with extreme care to ensure that such groups have a proper relation to the main mass and are not obtrusive, nor of sufficient size to compete with it. The greatest care will have to be taken too that they do not obstruct the sweeping lines of a vista or break the continuity of the greensward. Planting more often fails æsthetically from this cause than from any other, trees being dotted about on open lawns and grass glades in an irritating and meaningless manner.

Such outlying groups are particularly useful where the plantations, though probably originally planted for artistic effect, have been enclosed within a thorn or beech hedge in order to make better cover for game. Such a hedge cannot but look hard and incisive, and masses of thorn, gorse or broom planted outside it to break its line and conceal it at those points where it tends to be most intrusive, are invaluable. Along the Dee-

FIG. 348.—GROUP OF LONDON PLANE IN HYDE PARK.

side in Aberdeenshire Nature has effected this arrangement unaided, colonies of self-sown silver birch flanking the Scotch fir plantations on the hillsides.

*Small
groups of
forest trees.*

Besides the large plantation and its outlying spurs, we may have the small group of timber trees. That these have a distinct charm of their own will be at once seen by reference to the several photographs of such arrangements which are given (Ill. Nos. 346 to 349). Even where such groups are planted in a symmetrical manner, Nature achieves a large measure of success in giving them a pleasing outline, as may be seen from illustration No. 349, but, of course, if they are originally planted more as they would grow if self sown, a better and more natural effect must result. Repton recommended making a wide hole and planting half-a-dozen trees of one species in it, one foot apart, and leaving them to fight it out for themselves as to which should take the lead, and, although to do this in every case would look rather obvious when repeated indefinitely, still they may be planted near enough together to form one homogeneous mass of foliage, and preferably in odd or indivisible numbers to each group, so

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that we may have that greatest of all the charms of natural foliage, balance without symmetry.

The plan of a portion of the home park at Little Onn Hall, Staffordshire (Ill. No. 350), demonstrates how the principles discussed may be applied to an individual instance. The radiating lines show the angle included in various views which it is the object of the plantations to frame and emphasize. In this case, as the site is very flat, there was an opportunity for constructing fine avenues, but for several reasons, the chief of which was a desire to take advantage of some planting done a few years ago, the method shown was adopted.

These plantations have all curved outlines, and this is the most usual form, but it is not by any means necessary that this should always be so. While the round "clump" and the straight thin "belt," which were the stock forms of plantation a hundred years ago, are alike hideous, instances will arise both in the garden and park where any but a straight edge to a plantation would be artificial and affected. In such a case any stiffness can easily be prevented by the arrangement of the trees, here receding from the edge and there, with their branches sweeping out over the grass or roadway which borders it.

Having determined the outlines of the various plantations and the general silhouette of the foliage which it is desired to obtain in each instance, we have now to approach the arrangement of the

trees and shrubs. Individual species are dealt with in the next chapter, and here we must confine ourselves to matters of general application, which will help the planter to decide for himself which of them are suitable in any given case.

There can be no doubt that he who has learnt the one elementary rule that trees should be planted in masses of one species and not a large number of different kinds, has, to a large extent, mastered the theory of planting. In this country it will generally

Outline.

FIG. 349.—GROUP OF NINE ELMS. NATURE'S TRIUMPH OVER A STIFF ARRANGEMENT.

Planting in masses of one sort.

PLANTING FOR LANDSCAPE EFFECT.

FIG. 350.

PLANTING FOR LANDSCAPE EFFECT.

be found that those plantations which have been made solely with a view to timber-growing and for utilitarian purposes, seldom fail to satisfy the æsthetic sense, while those which are made specially as ornaments are not often completely satisfactory. This remarkable result is solely the outcome of the fact that the former plantations are made up of one or at the most two kinds of trees, whereas the latter are an unrestful jumble of all sorts, mostly too exotic and unusual to harmonize with their surroundings. The rule laid down is one therefore, which cannot be too strongly insisted upon.

As in architecture and, in fact, in every art, striking effects should be used but sparingly, and only at the chief points of interest, the great mass being restrained in its treatment, thus giving added value to them. It is for this reason that, whether in the garden or park, such subjects as hybrid rhododendrons should not be mixed with other Spring-flowering shrubs, as they are so striking when in bloom that they will not brook competition. A long drift of one sort, such as Cunningham's White or the vivid Frederick Waterer or Cynthia, may be introduced against a background of sober foliage, or of plants which do not flower till later, but undoubtedly the best way is to treat them as in a class by themselves and give them a glade remote from the other portions of the grounds, where they can be visited when in bloom, and where the monotonous mass of almost black leaves which they will present for ten months in the year will not be obtrusive. These and other dark shiny and pulpy-leaved exotics should be used very sparingly except in the most formally planted borders of the garden.

The general lines to be followed in arranging a border in the more ornamental portions of the grounds, where more of variety is in keeping than would generally be the case, is shown in illustration No. 351, which is a reproduction of part of a planting plan prepared by the Author some years ago for a garden in North Wales. Illustration No. 352 gives a portion of it to a larger scale, and on this are marked all the varieties to be planted. The undergrowths and nurseries are indicated by numbers, and the larger permanent trees by arbitrary signs; and this method I have found to be a good one, as it helps to ensure that every part of the bed receives its proper proportion of both. Of course in this case, where the plantation is close to the residence and skirts the carriage drive, large forest trees are not required, but the general principles of the arrangement would be the same, and would be similarly indicated, whatever the scale of the planting.

Arrangement is largely a question of careful observation and experience, coupled with an artistic appreciation of the effect to be sought, and that imagination which will accompany it and enable the planter to see the final result in his mind's eye from the outset. Do not let the thought that you are planting for posterity deter you from making the most of the opportunity in this direction; at the least you have the pleasures of anticipation, and, even though you may not live to see the oak sapling a gnarled and weather-beaten monarch of the forest, it is wonderful what can be produced in a very short time if large and healthy nursery stock be used to commence with. Of course it is possible to move trees of any size—in fact, yews mentioned in the Domesday Book have been successfully transplanted under the Author's direction, but it is too expensive and tedious a process to be done on a large scale.

The best advice that can be given to the tyro is to study all those groupings and arrangements which appeal to his æsthetic sense, and to make copious notes and sketches

Restraint.

FIG. 351.

Example of ornamental border.

Rapidly attained effect.

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Study of
existing
examples.

for future use. He will begin by noting how beautiful the white stem of a silver birch looks against a background of Scotch fir, and how the russet leaves of beech scrub and the dark green of holly give a pleasing contrast in the Winter months, especially when snow is on the ground, and he will go forward from these most obvious and striking lessons to note hundreds of factors which will provide useful material for his special work.

American University students, who take the course in landscape design, are taught to make records of the elementals of convincing schemes, roughly drawn to scale by means of a rapid military surveying instrument known as the plane table, which is so light and handy as to be capable of being carried anywhere. The distances are carefully stepped out which will give them with sufficient approximation for the purpose.

Winter
effects.

This systematic study of existing examples must be carried out at all seasons to be of any value, for, of course, it is necessary to provide for the Winter as well as for the Summer effect. This means that we must make a judicious use of conifers and evergreens, always remembering, that while the larger plantations in the home park or middle distance rely for their chief effects almost entirely on form and outline and their relation

FIG. 352.

to the general composition of the view, those close to the house will be more dependent on colour and detail. Their Winter effects will therefore need special attention, and a careful and discriminating use must be made of those evergreens and conifers with brightly-coloured or glaucous foliage, and hardy Winter-flowering varieties. Those bearing brightly-coloured berries will also be useful, such as *Pernettya mucronata*, *Cotoneaster horizontalis*, *C. macrophylla*, *C. Simmonsi*, *Berberis stenophylla*, *B. Darwini*, *Symphoricarpus racemosus*, *Cratægus Lelandi* and *Skimmia japonica*, while, if there is ample space, mountain ash, tree thorns, the red and yellow berried hollies, the fire thorn and the cockspur thorn may also be used.

Park
plantations.

In the park and landscape plantations, those trees which have ever been the joy and pride of lovers of English landscape should predominate. The oak, elm, ash, beech, sycamore and birch are still the trees to choose from for the greater effects, with the tall Lombardy poplar to break the sky-line at well-selected points, either as a single specimen rising from behind the other trees or in groups of three. For attendants, and especially for the margins of the plantations and to skirt woodland paths, we have the

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thorn, crab, wild cherry, willow and spindle tree. For Winter effects we should plant those evergreens which age picturesquely, such as Scotch fir, cedar of Lebanon, yew and holly in preference to the youthfully showy spruce firs, Austrian pines, Indian cedars and Lawson's cypress, which belong to the garden proper, and not the parklands.

In the latter position it is even more necessary than elsewhere to plant in masses of one sort. Beeches by themselves form a splendid group, as do oak, elm, sycamore, horse chestnut, Norway maple, cherry, thorn, etc., while the effect of a few Scotch firs standing on a bluff rocky spur, in both Winter and Summer, is well shown by the two photographs of Brathay Craggs on the shore of Windermere given in illustrations Nos. 4 and 5.

When plantations are first formed, it is best to plant quick-growing trees and undergrowths somewhat thickly amongst the permanent trees, to act as nursers, and give the former shelter until they are well established. The latter will, of course, be cut out by degrees, as the permanent subjects need more room for growth and expansion.

If the park is to be grazed by cattle it will be necessary to fence the plantations, special care being taken that they cannot reach and feed on yews, as these are a deadly poison, though greedily eaten by all forms of farm stock. The best fence is that which is least conspicuous without being flimsy, and, for most positions, I have seen nothing better than strong iron hurdles. These may be rendered still more inconspicuous by planting outside them hollies and other things which the cattle will not touch, as described in speaking of the form the plantation should take. Within the fence, the trees should not be planted in any regular pattern, and covert plants, such as yew, holly, dogwood, privet and mahonia, may be scattered at irregular intervals towards the margin, and, at times, recede far into the plantation.

The best way to obtain the effect of wild primeval woodland and avoid all suggestion of artificiality is to prepare the ground and sow liberally those native trees which can be raised from seed, replenishing the sowings every fourth year to atone for the depredations of birds and vermin. This is of course a very lengthy process, and often the subsequent thinning, if unskilfully done, will leave a stiffer effect than if the ground had been planted in the usual way.

Wherever new plantations are to be formed, whether in the garden, park or moorland, the ground should be properly trenched and prepared.* This may at first sight seem needless expense, but practical experience of planting both with and without trenching abundantly proves that the extra cost is far more than compensated for by the greater rapidity with which the trees and shrubs take root and grow, and the permanent effect of their appearance which results. Greater care will, of course, be necessary in preparing beds for choice shrubs in the garden than in the case of those for plantations in the park, both as regards depth of soil and the amount of peat and manure added; but both should be thoroughly trenched. How the surface of the bed should be shaped is clearly shown by comparing the plan and sections of a small plantation given in illustration No. 353.

When planting single specimen trees, either in the park or on the lawn, the mistake is often made of forcing the roots into a hole which is far too deep and narrow. Instead of this a broad hole should be made and a layer of top-spit from a pasture mixed with

* For a description of trenching, see Chapter XV.

FIG. 353.

*Fencing
park
plantations.*

*Wild
natural
effects.*

*Prepara-
tion of
ground for
plantations.*

PLANTING FOR LANDSCAPE EFFECT.

Planting specimen trees.

a little well-rotted manure (never raw manure) or leaf mould placed in the bottom. On this the roots of the tree should be spread out in a natural manner, and the stake to which the tree is to be tied well driven in, while there is no danger of driving it into the roots as there would be if it is put in as an after-thought. The hole may then be filled up with the same mixture of turf, mould and manure, and well trodden down, and, if at all dry, watered freely. The turf may be relaid over the whole of the roots except for a distance of eighteen inches round the stem, which should be kept clear of grass until the tree has become thoroughly established.

It is better that the crown of the roots should stand up above the surface a little than that the stem should be buried. If only a few inches are covered, the tree will suffer seriously, while, if buried deeply, it will almost certainly die within a few years. Some trees, such as poplars and willows, form fresh roots if not too deeply buried, but the majority of other kinds eventually succumb to fungoid attacks between the surface of the ground and the roots.

Tree guards.

In the home park, specimen trees will have to be guarded, and this is best done by three or four stout posts driven into the ground and connected by rails at a sufficient distance from the stem to keep cattle from browsing on the smaller twigs. Trees with pendulous branches sweeping the ground are not, for this reason, suited to park planting. Instead, those with strong clean stems from eight to ten feet high, with the branches rising above this height, are to be preferred.

Arrangements of the units in a plantation.

It is impossible to lay down even approximate rules for general application as to the distances apart at which trees should be planted. While, on the one hand, in the open country, half-a-dozen beech may monopolize half-an-acre of land, in a smoky district, a large number of such things as will grow would be necessary to furnish the same area. Circumstances will differ in every case, and it can only be repeated that any formality or spottiness in the arrangement should be studiously avoided. It is related of Robert Marnock that he once horrified an up-to-date forester by taking a bundle of Scotch firs and throwing them with all his strength broadcast, requesting him to plant each on the exact spot where it happened to fall. Downing, too, in his book on landscape gardening says, "A friend of ours at Northampton, who is a most zealous planter, related to us a diverting expedient to which he was obliged to resort, in order to ensure *irregular groups*. Busily engaged in arranging plantations of young trees on his lawn, he was hastily obliged to leave home, and intrust the planting of the groups to some common garden labourers, whose ideas he could not raise to a point sufficiently high to appreciate any beauty in plantations, unless made in regular forms and straight lines. 'Being well aware,' says our friend, 'that if left to themselves I should find all my trees, on my return, in hollow squares or circular clumps, I hastily *threw up a peck of potatoes* into the air, one by one, and directed my workmen to plant a tree where every potato fell! Thus, if I did not attain the maximum of beauty in grouping, I at least had something not so offensive as geometrical figures.'"

This was written when popular taste was suffering the inevitable reaction from Capability Brown's clumps and belts, and it is impossible to take it literally, but it points the way to the method on which naturally arranged plantations should be constructed.

FIG. 354.—AZALIAS AT VILLA CARLOTTA-ON LAKE COMO.

CHAPTER XVIII

The arrangement of plantations, groups and single trees having been dealt with, and the power they exercise in imparting character to the garden and landscape discussed, it is now purposed to give a list of the most useful kinds of trees for the various plantations, with a few descriptive notes, and some indication of the conditions under which they luxuriate. Before proceeding to the actual lists, there are, however, a few important considerations, already referred to, which may with advantage be emphasized, because upon their observance depends, to a large extent, the pleasure derivable from foliage and woodland scenery.

The following lists do not pretend to any degree of completeness, nor do they include all trees worthy of a position in the garden or park; much less it is suggested that each garden should be planted with the same varieties of trees and shrubs, for the result would be to reduce their decoration to such a degree of sameness as to create monotony. Each garden should have individual treatment bestowed upon it, and in no department is this so necessary as in the choice and arrangement of trees and shrubs. The lists are, therefore, merely first aids to those about to plant or lay out gardens.

To make the selection of trees and shrubs for various situations more simple, they are classified so far as possible under several headings, as deciduous trees, hardy conifers, &c., and the following abbreviations are affixed to those which, in addition to their general use, are suitable for growing under special conditions, as :—S, trees and shrubs for seaside planting; T, for town and suburban gardens; P, those which thrive best on peat, or on soil where lime is absent; U, varieties suitable for under-growths and planting in shady places. All, of course, succeed in the more favoured districts.

To ensure correct nomenclature, I have followed as far as possible the authority of the "Kew Hand Lists." I have also given in many cases the common names by which they are familiarly known, as well as synonyms. This I feel will assist a purchaser when selecting plants from the nurseries.

It will also be seen that, in some cases, such as in *Acer* and *Prunus*, that rather lengthy notes are made. My reason for this is to try to induce intending planters to use more of these beautiful trees than has been the case in the past.

*General
Principles.*

The conditions under which they are to be used may be summarised as follows :—

1. That trees and shrubs which are indigenous, or those which have been introduced into this country, and are allied to and succeed as well as native varieties, should be preferred to those which only remind us of foreign countries or are simply freaks of Nature.

2. That the proportion of deciduous trees and flowering plants should, in most cases, exceed that of evergreen shrubs and trees. This is, however, to a certain

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General Principles.

extent, a question of locality. A seaside garden, for instance, requires a larger proportion of evergreens than an inland garden. The same rule applies to gardens situated in districts where white chalk or limestone gives tone and character to the district.

3. That whilst conifers may, under certain conditions, be fitting objects for the garden, especially when used as formal trees on the terrace, they are seldom satisfactory when mixed with native trees in the park or home-landscape; an exception to this rule may be made in favour of *Pinus sylvestris*, the "Scotch pine," which is effective when planted in masses or in conjunction with *Betula alba*, the common or silver birch.

4. That collections of trees, shrubs, or conifers might be arranged in such a way as to display the intention to possess a choice variety of one particular class of plants.

FIG. 355.—VILLA GARDEN AT WHITEHILL, BERKHAMSTED.

5. That certain trees are to be avoided as inimical to the effect which plantations or groups of shrubs should give. Thus the free use of *Cupressus Lawsoniana* and *Araucaria imbricata*, or monkey-puzzle, is usually undesirable. Again, when a garden is favourably situated in a district where most subjects thrive, avoid planting shrubs such as *Aucuba japonica* and golden elders, which are reminiscent of a smoky atmosphere.

6. That flowering trees and shrubs deserve to be much more largely planted than they are at present; this rule refers more particularly to those old-fashioned varieties that are sometimes spoken of as being common. Amongst these may be mentioned *Laburnum*, *Syringa*, *Philadelphus*, *Ribes*, *Deutzia*, *Viburnum*, *Diervilla*, and shrubby *Spiræa*, most of which bear not only beautiful but also fragrant flowers.

7. That dotting a lawn all over with specimen trees is a doubtful expedient,

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and one which more often detracts from, than adds to, the effect of the garden, since breadth of effect is generally destroyed when trees are planted in this way. Allied to this is the doubtful practice of planting "commemoration trees" by celebrities, or to commemorate some family event. Planted often in an unsuitable situation and in warm weather, and having been coddled and fed for the occasion, in a few years they dwindle to wretched disfiguring skeletons. If such trees are planted, select an oak, or, if an evergreen is desired, a Holm oak. *General Principles.*

8. That indiscriminate mixing of shrubs is to be avoided and that character and scale of foliage should be observed. Thus Rhododendrons look best when grouped in very large masses, but Azaleas may successfully be planted in smaller beds with Kalmias, Daboeciae and Alpine Rhododendrons.

9. That it is possible to over-plant a garden, and so destroy its breadth of aspect. Illustration No. 355 shows how little planting is required in many gardens.

10. That it is well to remember, when purchasing trees and shrubs, that those which appear to be the most thriving and healthy in the nurseries are probably those which have stood the longest time un-transplanted, and that recently transplanted shrubs do not appear nearly so robust and vigorous, but are much safer to move.

ACER.—A. PSEUDO-PLATANUS, the "Sycamore," is one of the hardiest as well as the most handsome of British trees; it is valuable for planting as wind screens in exposed situations, for forming large masses of foliage, or for avenues. It grows quickly, and fairly large trees are procurable from most nurseries. There are numerous varieties worthy of a place in parks and gardens. A. p.-p. flavo-marginatum, known as the "Corstorphine Plane," with variegated foliage; A. palmatum atropurpureum, a purple form; A. p. Prinz Handjery, and A. p. Nizeti are among the best. T.S. *Deciduous trees.*

A. PLATANOIDES, the "Norway Maple," with its delicate green tints in the Spring, turning yellow in Autumn, is particularly effective. The varieties Reitenbachii, purpureum, palmatum, and Schwedlerii are distinctly characteristic.

A. CAMPESTRE, the common "European Maple," has five-lobed leaves, and when planted with A. c. variegatum a good contrast is obtained. There is also a golden form, sold under various names.

A. DASYCARPUM, the "Silver Maple," is most valuable, forming as it does a specimen tree of a more or less pendulous habit.

A. NEGUNDO, the "Box Elder," with the varieties californicum aureum and variegatum, is decorative, and only suitable for gardens.

A. PICTUM is a distinct form, and in the variety A. p. rubrum (syn. A. colchicum rubrum) the young stems and leaves are a bright crimson colour. Another fine variety is A. p. aureum. A. macrophyllum, the "Californian Maple"; monspessulanum, the "Montpelier Maple;" and saccharinum, the "Sugar Maple," are good species; while the beautiful Japanese Maples, A. japonicum and A. palmatum, with their fine cut-leaved varieties, are useful as low-growing forms of this genus, suitable for sheltered parts of the garden but not for the park.

ÆSCULUS.—Æ. HIPPOCASTANUM, the "Horse Chestnut," may be seen on every estate. It is suitable for use in large avenues or for clumps in the park, or singly, as in illustration No. 357 with the characteristic play of light on the foliage. Both in Spring when in flower, and in Autumn when the foliage has assumed its resplendent glowing tint, it forms a prominent feature in the landscape. There are several other forms which commend themselves both for lawn or landscape; they are Æ. carnea, the "Red Horse Chestnut;" Æ. californica; Æ. indica, the "Indian Horse Chestnut;" Æ. flava, the "Sweet Buckeye;" Æ. Pavia (syn. Pavia rubra), the "Red Buckeye;" Æ. turbinata, and Æ. parviflora (syn. Pavia macrostachya). T.

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*Deciduous
trees.*

AILANTHUS.—*A. GLANDULOSA* ("Tree of Heaven") makes a well-furnished specimen tree when planted as a bush. It is equally serviceable as a standard on long, clean stems six to eight feet high, pruned to form a good head; the flowers are inconspicuous, but the fruits are bright-coloured and effective.

ALNUS.—*ALNUS GLUTINOSA*, the "Common Alder," has few equals for planting near the seaside or on waterlogged land. A fine group of *Alnus*, profuse in catkins, overhanging the margin of river or lake, is superb. *A. g. aurea* (golden), *A. g. imperialis*, and *A. g. laciniata*, cut-leaved forms, are effective. *A. incana*, the "Speckled Alder;" *A. maritima*, the "Seaside Alder;" *A. rhombifolia*, the "White Alder," and *A. serrulata*, the "Smooth Alder," form very useful subjects. T.S.

AMYGDALUS. See *Prunus*.

BEECH. See *Fagus*.

BETULA (Birch). *BETULA ALBA*, the common Birch, is one of the few trees which

FIG. 356.—A SPANISH CHESTNUT.

never seem inappropriate. Its silvery appearance and graceful pendulous habit adapt it to any position. The following are forms worthy of mention: *B. a. pendula* Youngii, "Young's Weeping Birch;" *B. a. purpurea* and *B. a. dalecarica*; *B. lenta*, the "Cherry Birch;" *B. lutea*, the "Yellow Birch;" *B. nigra* (syn. *B. rubra*) "Red Birch;" and the beautiful white-stemmed *B. papyracea*, the "Canoe or Paper Birch." The pendulous forms can be effectively placed near a stream or by the margin of a lake, while groups of any of the species on a hillside, especially when in conjunction with *Pinus sylvestris*, are charming. T.

CARPINUS. *C. BETULUS*, the "Hornbeam," is the type of a useful ornamental genus. The most notable forms are *C. b. aspenifolia*, *C. b. columnaris*, *C. b. pendula* and *C. b. pyramidalis*, while *C. caroliniana*, the "American Hornbeam," *C. laxiflora* and *C. cordata*, from Japan, are good species.

CARYA. A genus of ornamental trees related to the Walnuts, with bold foliage which turns a fine yellow colour in the autumn. *C. alba* the "Shell-bark Hickory;"

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C. sulcata, the "Big Shell-bark;" *C. amara*, the "Bitter-Nut;" *C. porcina*, the "Pig-Nut," make a good show in the park when planted in groups of three or five. *Deciduous trees.*

CASTANEA. *C. vulgaris*, the "Sweet or Spanish Chestnut," makes a huge tree suitable for the park (Ill. No. 356). There are numerous varieties of the type.

CATALPA. The most common species met with is *C. bignonioides*, the "Indian Bean" (syn. *C. syringæfolia*), which bears large panicles of white flowers tinged with violet, spotted with purple and yellow. It is an excellent specimen tree for a lawn, also as a standard on the sheltered side of a walk, and grows to a height of more than thirty feet. The species *C. Bungei*, *C. cordifolia* and *C. Kämpferi* are useful and interesting.

CHERRY. See *Prunus*.

CHESTNUT. See *Æsculus* and *Castanea*.

CRATÆGUS. One of the finest of the ornamental genera, comprising trees ranging from twenty to thirty feet in height, while other forms have a more shrubby habit.

CRATÆGUS OXYACANTHA, the "Hawthorn," is the type, and recommends itself. There is a division into two sub-species, *C. monogyna* and *C. oxyacanthoides*. Under the former, *C. monogyna-præcox*, the "Glastonbury Thorn," is a conspicuous form, beginning to flower in November and forward into March; *C. m. pendula*, *C. m. aurea*, and *C. m. laciniata* are distinct varieties; while sub-species *C. oxyacanthoides* is represented by *C. o. fructu luteo*, with yellow fruit; *C. o. fl. pl. coccineo*; *C. o. fl. pl. albo*, and *C. o. fl. pl. piniceo*. *C. crus-galli*, the "Cockspur or Newcastle Thorn," and its varieties, are the pride of the landscape in the Autumn. *C. crus-galli prunifolia* and *splendens C. o.* surpass all other in richness of colour.

Amongst the distinct species are *C. mollis*; *C. cordata*, the "Washington Thorn;" *C. coccinea*, the "Scarlet Haw;" and *C. flava*, the "Yellow Haw." *C. Pyracantha* and *C. P. Lelandi*, are used largely for covering walls, also to make a border gay in Winter. This genus is suitable for any situation, and most of the species and varieties are worthy of places in the park or on the outskirts of the lawn.

FAGUS (Beech). *FAGUS SYLVATICA*, the common Beech, has very few equals for an avenue. Unfortunately it does not grow quite so rapidly at first as many trees, and it is often difficult to obtain large plants from the nurseries. It succeeds best on land with a gravel or chalk subsoil. The following are some of the best varieties: *F. s. atropurpurea*, the "Purple Beech;" *F. s. cuprea*, the "Copper Beech;" *F. s. purpurea pendula*, the "Weeping Purple Beech;" *F. s. Zlatia*, the "Golden Beech;" and *F. s. heterophylla*, or fern-leaved Beech.

FRAXINUS (Ash). *F. EXCELSIOR*, the "Common Ash," is the type. The pendulous forms can seldom be used with advantage, unless a green bower is required, when they are excellent. *F. e. pendula*, the "Weeping Ash," is the pendulous variety most often met with; *F. Ornus*, the "Manna Ash;" *F. americana*, the "White Ash;" and *F. nigra*, the "Black Ash," are some of the other more distinct species. T.S.

GLEDITSCHIA. *G. TRIACANTHOS*, the "Honey Locust," is a leguminous tree with large prickly spines introduced from North America; the leaves are pinnate and deciduous. *G. monosperma*, the "Water Locust," is another specimen from the United States, while China and Japan furnish several very distinct forms with fine foliage.

JUGLANS. *J. REGIA*, the "Common Walnut," is the type. It is an excellent tree for large parks.

LABURNUM. *L. VULGARE*, the "Common Laburnum," is one of the most useful of flowering trees. Laburnums are usually grown as standards, with a clean stem for about five to six feet from the ground, or they may be often used in positions where a low screen of trees is required. They are useful for growing amongst other trees and shrubs, and stand shade, and flourish by the sea or in a smoky

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*Deciduous
trees.*

town. Other good varieties are *L. alpinum*, "Scotch Laburnum;" *L. Parksii*, and *L. Watereri*. T.S.

LIQUIDAMBAR, a tree with good form, and valuable for its colour in early Autumn; it exhales a very refreshing fragrance, and a fine effect is obtained when it is planted in groups. Two species are worth growing, *L. styraciflua*, the "Sweet Gum," and *L. orientalis* (syn. *L. imberbe*).

LIRIODENDRON TULIPIFERA, the "Tulip Tree," makes an interesting specimen for the park. It forms a large trunk, and its habit generally is pleasing. The tulip-like flowers of a green colour, with an orange and yellow fusion, are borne freely in the latter part of July. Two prominent varieties are *L. chinensis* and *L. fastigiata*.

MAPLE. See *Acer*.

MESPILUS. See **AMELANCHIER** in the list of Flowering Shrubs.

OAK. See *Quercus*.

PLATANUS. This genus provides some of the most useful of ornamental trees for use in the streets of towns. It can also be planted in groups or for forming avenues. *P. acerifolia*, the "London Plane," is the best known; *P. orientalis* is a very fine species from the Orient; and *P. occidentalis*, the "Button Wood," is a native North of America. The first named grows to a huge size if planted in the open park. T.

POPULUS (Poplar). Trees of this genus are excellent for towns, while some species are useful for breaking the sky line in masses of foliage, or for plantations in flat districts. *Populus nigra pyramidalis*, known as the "Lombardy Poplar," is excellent for this purpose. This genus has quite a number of worthy species and varieties. The following

are the most distinct:—*P. alba*, the "White Poplar;" *P. balsamifera*, the "Balsam Poplar;" *P. deltoidea*, the "Cottonwood;" *P. d. aurea*; *P. tremula*, the "Aspen;" and *P. tremuloides*, the "American Aspen." T.

PRUNUS. This genus is a very ornamental as well as useful one; it includes the Plum, Cherry, Almond and Peach. Dealing with it from the ornamental standpoint, we give a list of the most prominent species and varieties, which may be used with the greatest advantage in nearly any position. T.

P. ACIDA, with its varieties, are useful to plant in the woodland. *P. a. semperflorens* is the "All Saints' Cherry." *P. Avium*, the "Gean or Mazzard," and *P. a. flore pleno* make handsome trees, bearing pure white flowers.

P. AMYGDALUS, the "Common Almond" (syn. *Amygdalus communis*). A

FIG. 357.—A HORSE CHESTNUT.

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well-known tree, but not grown nearly so much as it might be. Blooming in early Spring, when other deciduous trees and shrubs are dull and bare, it makes a very desirable plant. There are many varieties, of which *P. a. amara*, the "Bitter Almond;" *P. a. dulcis*, the "Sweet Almond;" and *P. a. persicoides* are worth planting, but none of these varieties succeed well in the six Northern counties. *Deciduous trees.*

P. CERASIFERA, the "Myrobalan or Cherry Plum," is a small tree bearing white flowers. The variety with fine purple foliage, *P. cerasifera atropurpurea* (syn. *P. Pissardi*), is one of the finest trees for colour contrast.

P. CERASUS, the "Wild or Dwarf Cherry," with a double form, *P. C. Rhexi flore-pleno*, are charming when planted in groups in the park or near the edge of a wood.

P. DAVIDIANA is a species which makes a very fine tree; the flowers are rose-coloured, and a most pleasing effect is obtained when planted with the white variety amongst shrubs with dark green foliage.

P. JAPONICA, although not a tree form, is useful for making a low-growing clump. Two double varieties are *P. j. flore-albo-pleno* and *P. j. flore-roseo-pleno*.

P. LAUROCERASUS, the "Common Laurel or Cherry Laurel," and *P. lusitanica*, the "Portugal Laurel," are dealt with under Evergreen Shrubs. Syn. *Cerasus Laurocerasus*.

P. MAHALEB (Syn. *Cerasus Mahaleb*), the "St. Lucie Cherry," and its variety, *P. m. pendula*, are excellent for specimen trees, especially the latter, which has a graceful pendulous habit.

P. MARITIMA, the "Beach Plum," as the name denotes, is an excellent subject for the seaside.

P. MUME, the "Japanese Apricot," with its varieties, some with double flowers and rich colours, add to the charm which the genus "*Prunus*" provides in the early part of the year.

P. PADUS (Syn. *Cerasus Padus*), the "Bird Cherry," with its host of varieties, is seen to advantage when planted with other trees in a more or less wild state; the flowers are white in colour, and are borne on racemes which vary in length.

P. PERSICA, the "Peach," is well known for its beautiful Spring blossoms. The varieties *P. p. magnifica*, *P. p. flore-albo-pleno*, *P. p. flore-roseo-pleno*, are very beautiful.

P. PSEUDO-CERASUS is a very showy tree from China and Japan with pink flowers. The two most distinct varieties are *P. p.-c. flore-luteo-pleno*, with light yellow flowers, and *P. p.-c. James H. Veitch*, a large-flowered form of intense pink colour (Syn. *Cerasus pseudo-cerasus*). There are many new varieties of excellent colour and form.

P. SERRULATA has a peculiar habit of throwing out long horizontal branches. The flowers are borne in profusion on short spurs. Syn. *Cerasus serrulata*.

P. SPINOSA, the "Sloe or Blackthorn," is, of course, found wild throughout the country. There is also a double form, *P. s. flore-pleno*.

P. SUBHIRTELLA is a Japanese species which forms a very elegant tree about ten feet high.

PYRUS. There are numerous groups in this genus, which include the Pear, Apple, Medlar, Mountain Ash, Service Tree, and others. The trees generally attain a medium size, although some are shrubby. When in flower or bearing fruit, all are very ornamental. T.S.

P. AMERICANA is the American "Mountain Ash." It grows upwards of twenty feet high and bears scarlet fruits.

P. ARBUTIFOLIA, the "Choke-Berry," is a shrubby tree growing to about ten feet high. The foliage turns a high colour in Autumn. It is therefore a most useful form for shrubberies.

P. ARIA, the "White Beam Tree," is the type of a very ornamental section

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*Deciduous
trees.*

of the genus. The underside of the leaves has usually a silvery appearance. There are many varieties, all of which are useful for planting in the park; they grow about twenty feet high.

P. AUCUPARĀ, the "Mountain Ash or Rowan-tree," is most valuable, growing some twenty to thirty feet in height. It makes a good show in the home park or woodland, both when in flower and when bearing its bright scarlet fruits. The varieties, of which there are a considerable number, are all good.

P. BACCATA, the "Siberian Crab," during the month of May is a mass of beautiful blossom, followed by a crop of reddish fruits. It makes a perfect specimen for a lawn or park.

P. CORONARIA, the American "Crab Apple," and the variety *P. c. flore-pleno* are distinct.

P. FLORIBUNDA, a very free-flowering small tree, or sometimes broad shrub is an excellent subject for grouping, with its variety *P. f. atrosanguinea*, on a mound, or for planting as a single specimen; it stands out conspicuously from most of

FIG. 358.—WINTER EFFECT OF SCOTCH FIR AND SILVER BIRCH.

the others owing to its showy colour.

P. GERMANICA (syn. *Mespilus germanica*) is the "Medlar," which should be given a place in every formal garden.

P. MALUS, the "Crab Apple," of which there is an endless number of varieties, is an excellent flowering tree, particularly the variety "John Downie."

P. PRUNIFOLIA and its varieties are useful.

P. SCHEIDECKERI, a very distinct hybrid between *P. prunifolia* and *P. floribunda*.

P. SORBUS, the "Service Tree" (Syn. *Sorbus domestica*), grows to a height of over forty feet, and makes an excellent tree to plant amongst other masses of foliage in the woodland. When bursting into leaf, and also when in flower, it is a striking feature in the woodland.

P. SPECTABILIS, introduced from China and Japan, has larger flowers than most species. The varieties *P. s. Kaido*, *P. s. flore-pleno* and *P. s. flore-albo* are all good.

P. TORMINALIS, the "Wild Service Tree," grows to a height of forty to fifty feet.
QUERCUS. *Q. CERRIS*, the "Turkey Oak," with its varieties, cannot be overlooked.

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Q. COCCINEA, the "Scarlet Oak" of North America, has brilliant scarlet leaves in the Autumn, but, owing to its enormous leafage, is somewhat difficult to group with native trees. *Deciduous trees.*

Q. ILEX, the "Holm Oak," is a splendid evergreen, and most suitable for planting near the seaside. It grows some thirty to forty feet high, and makes a fine mass. There are also a number of varieties of this species, which include *Q. I. Fordi*, *Q. I. latifolia*, *Q. I. longifolia* and *Q. I. rotundifolia*. S.

Q. LUCOMBEANA, the "Lucombe Oak," is a variety which carries its leaves well into the Spring, at which time they are shed. This form is a hybrid, *Q. Cerris* x *Q. Suber*. T.S.

Q. ROBUR, the "Common Oak." Under this name are included *Q. pedunculata* and *Q. sessiliflora*, the British representatives of the genus. Apart from the forester's idea of the oak, there are good reasons for planting some of the most distinct species about the parks and woods for enhancing the beauty of the landscape. T.S.

The following list is worthy of note :—

Q. conferta ; *Q. coccifera*, the "Kermes Oak ;" *Q. heterophylla* ; *Q. rubra*, the "Red Oak ;" *Q. palustris*, the "Pin Oak ;" *Q. Mirbecki* ; *Q. sessiliflora*, with its varieties ; *Q. Suber*, the "Cork Oak ;" and *Q. velutina*, the "Yellow Bark Oak," are all distinct species which would give relief to the landscape if, when a choice is being made, some of them are introduced.

ROBINIA. A leguminous genus of very handsome trees, being light and airy.

R. PSEUDACACIA, the "Locust or Acacia," is a form with white flowers. Some other varieties, of which are *R. P. Decaisneana flore rubro*, *R. P. angustifolia* and *R. P. semperflorens*, afford a good display. In suburban gardens, *R. Pseudacacia* is pruned to a rounded head and grown in mop-shaped fashion.

Other good species are *R. neo-mexicana* ; *R. viscosa*, the "Clammy Locust ;" *R. hispida*, the "Rose acacia ;" and the variety *R. inermis*. T.

SALIX (Willow). For the seaside or for land which cannot be properly drained, Willows are invaluable. They are very beautiful, and afford a good effect near a lake or stream. *S. alba cœrulea*, the true cricket-bat variety, is one of the most profitable trees grown.

The most useful species are *S. alba*, the "White Willow," and *S. babylonica*, the "Weeping Willow." The golden-stemmed variety, *S. ramulis aureis*, is very pretty in its Winter state. Other species are *S. caprea*, the "Common Sallow or Goat Willow ;" *S. daphnoides*, the "Violet Willow ;" *S. fragilis*, the "Crack Willow ;" and *S. nigra*, the "Black Willow." T.S.

SOPHORA. A genus of the Order Leguminosæ. *Sophora japonica* grows upwards of forty feet high, and has fine dark green pinnate leaves, with cream-coloured flowers.

S. Korolkowi, *S. tetraptera*, *S. macrocarpa*, *S. pachycarpa* and *S. violacea* are distinct species.

S. viciifolia is a most promising species from China, with white and violet flowers. It forms a very beautiful shrub, and can also be used with good effect planted against a wall.

TILIA (Lime). A useful tree, and one which grows rapidly in most places. It can be trained to form an ornamental screen, as often seen in Holland, or may be pruned for a mop-headed colonnade ; it is also one of the finest trees for avenues or park clumps. The flowers are very fragrant.

The most distinct species are as follows :—*T. vulgaris*, the "Common Lime ;" *T. americana*, the "Basswood ;" *T. argentea*, "White Lime ;" and *T. platyphyllos*. T.

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*Deciduous
trees.*

ULMUS (Elm). One of the most characteristic of English trees. Elms are indifferent alike to soil and situation, and make magnificent avenues, park clumps, or single specimens.

ULMUS CAMPESTRIS, the "Common Elm," and *U. montana*, the "Scotch or Wych Elm," are two species which form huge trees for the park. Other species and varieties are *U. glabra* and *U. cornubiensis*, the "Cornish Elm." *U. pumila* carries its foliage into November, and is an excellent tree. In addition to the above-mentioned species and varieties, this genus provides others equally important for inclusion in an arboretum. *U. c. Wheatleyi* is excellent as a fastigate tree, and especially useful in those flat districts where the Lombardy poplar does not succeed. T.S.

HARDY CONIFERS FOR THE FORMAL GARDEN, PINETUM AND LAWN.

*Hardy
Conifers.*

FIG. 359.—SNOWY MESPILUS AGAINST A BACKGROUND OF HOLLIES.

No class of trees or shrubs requires more care in selection and arrangement than do conifers, so much so that it is safe to state that more places are spoiled than improved by their presence; and yet there are many varieties which are of the greatest use to the garden designer. The fault generally lies with the planter, who perhaps does not recognise the effect of scale in garden design, and who, in the absence of this knowledge, relies upon the perfectly well-meaning advice of his nurseryman. The list here given is one relating to the Order Coniferae, as classed in the "Kew Hand-List of Coniferae," and it must be borne in mind that quite a number of these subjects are named by different nurserymen without regard to authority of any description. The "Hand-List," reveals the existence of a large number of synonyms. While endeavouring to give a wide scope for the planting of conifers by making the list fairly extensive, it must be understood that exceptional precautions should be

taken in their general arrangement and grouping, especially in forming gardens of a limited area. The adoption of dwarf forms for easing off the bend of a walk, or for planting on rockwork, is but one of many points to be noted in the use of conifers.

Judging from observation it may be said that nowhere do conifers look so much at home as in mountainous districts, especially when the houses are built of cold grey stone, or where there is a large extent of water, either in the form of a river, loch or lake. The explanation is probably that in such districts conifers attain a large size

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and most characteristic colouring, that they supply just the requisite amount of warmth of tone to the district in the Winter season, and that they are generally seen against a background of hills. *Conifers.*

ABIES (Silver Fir). A fine ornamental genus, which mostly produces large trees, with erect cones. The following are the most interesting:—*A. brachyphylla*; *A. bracteata*, the “Santa Lucia Fir;” *A. cephalonica*, *A. cilicia*, *A. concolor*, *A. firma*, *A. lasiocarpa*, *A. nobilis*, and *A. n. glauca*, *A. Nordmanniana*, *A. numidica*, *A. pectinata*, the “Silver Fir;” *A. Pinsapo*, *A. Webbiana*, and *A. Webbiana* var. *Pindrow*.

ARAUCARIA IMBRICATA, the “Monkey Puzzle,” should never be planted except in collections, as a curious tree.

CEDRUS (Cedar). *C. Libani*, the “Cedar of Lebanon,” has always been in great repute with garden makers and improvers, and very properly so, as it is one of the most stately trees both in form and colour, especially when seen in conjunction with classic architecture. A single specimen at maturity is a noble tree, whilst an avenue formed of cedars is one of the most beautiful it is possible to rear. Other species and varieties are *C. atlantica*, and *C. a. glauca*; the latter with its glaucous foliage, is very fine. *C. Deodara*, “The Deodar,” or “Indian Cedar,” forms a very interesting specimen when in good health, but is not so beautiful as *C. atlantica*.

CEPHALOTAXUS is a very ornamental genus for inclusion in a collection. *C. drupacea*, *C. Fortunei* and *C. pedunculata* are the most distinct forms.

CRYPTOMERIA JAPONICA, the “Japanese Cedar,” which in Lakeland grows to an enormous size, is a useful and beautiful specimen for the pinetum.

CUPRESSUS. This genus includes many very handsome hardy evergreen trees, some of which can be strongly recommended for planting on terraces, for hedges, as specimens on lawns, and for boundary plantations in the gardens. *C. Lawsoniana* (syn. *Chamaecyparis Lawsoniana*), the “Lawson Cypress,” may occasionally be used as a hedge plant, but it is too funereal in appearance for other purposes. The following varieties are very pretty: *C. L. aurea*, *C. Allumi*, *C. erecta viridis*, *C. pendula*. *C. nootkæensis* (syn. *Thuiopsis borealis*) should be planted instead of *C. Lawsoniana*. *C. obtusa* (syn. *Retinospora obtusa*), with the large number of useful varieties, provide beautiful forms for a mixed collection. *C. pisifera*, with the varieties of *C. p. plumosa* and *C. p. filifera*, cannot be passed over, being very graceful subjects. *C. thuyoides*, the “White Cedar,” (syn. *Retinospora ericoides*) has quite a number of varieties which furnish medium-sized specimens. *C. macrocarpa*, the “Monterey Cypress,” is tender in some localities, but when established is very handsome. For a seaside garden, *C. macrocarpa* is one of the most useful conifers known to the writer; it grows very rapidly, can be planted as a hedge and closely clipped, or it may be treated as a close-trimmed formal tree.

GINGKO BILOBA, the “Maidenhair Tree,” is a deciduous conifer which thrives well in towns.

JUNIPERUS (Juniper). A genus of useful trees and dwarf shrubs, the principal species and varieties being as follows:—*J. communis*, the “Common Juniper,” with its varieties, provide good subjects for natural masses; while *J. c. hibernica*, the “Irish Juniper,” is a useful shrub for planting on terraces. Other species are *J. littoralis*, *J. drupacea*, the “Syrian Juniper,” and *J. sabina*, the “Savin.” An interesting variety is *J. s. tamariscifolia*, the “Carpet Juniper;” while *J. chinensis* and varieties, *J. excelsa* the “Greek Juniper;” *J. recurva*, *J. thurifera*, the Spanish or “Incense Juniper;” *J. virginiana*, the “Red Cedar,” with a host of varieties, make up a pleasing effect for every kind of situation, but preferably where the lawns are expanding into the wild garden or woodland.

LARIX EUROPÆA (Larch) is one of the best trees for plantations in hilly country, being hardy, quick growing and valuable for timber.

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Conifers.

LIBOCEDRUS DECURRENS, the "Incense Cedar," is a stately columnar tree which shows to advantage if planted in a group. There are several varieties of this type.

PICEA (Spruce Fir). This is a genus of lofty trees which are very ornamental in the park or woodland, but should not be planted on low ground in combination with other trees. The type is *P. excelsa*, the "Common Spruce," which has a large number of different varieties. Other interesting species are *P. alba*, the "White Spruce;" *P. Alcockiana*, *P. Engelmanni*, *P. Maximowiczii*, *P. Morinda*, *P. nigra* the "Black Spruce," *P. Omorika*, the "Servian Spruce;" *P. orientalis*, *P. polita* and *P. pungens*; also the variety *P. p. glauca*, the "Blue Spruce."

PINUS, of which the varieties are legion, includes some of the best known conifers, but the genus also contains a large number of species which are only interesting to lovers of the curious. The commonest and probably the most useful is *P. sylvestris*, the Scotch fir which is one of the few pines which associate well with English landscape scenery. The following are distinct:—*P. Bungeana*, the "Lace Bark Pine;" *P. inops*, the "Scrub Pine;" *P. Laricio*, the "Corsican Pine;" *P. montana*; *P. Pinaster*, the "Cluster Pine;" *P. Pinea*, the "Stone Pine;" *P. excelsa*, the "Bhotan Pine," and *P. Strobus*, the "Weymouth Pine." Pines invariably look best when planted together in considerable numbers.

PSEUDOLARIX KÆMPFERI, the "Golden Larch," is a beautiful tree, and should be more largely planted for effect, wherever there is a background of large trees or hills.

PSEUDOTSUGA DOUGLASII, the "Douglas Fir," is a handsome tree of very rapid growth, and valuable as timber. It will not however stand strong winds.

RETINOSPORA. See *Cupressus*.

SCIADOPITYS VERTICILLATA, the "Umbrella Pine," is a somewhat rare and unique evergreen tree of slow growth, quite distinct from any other Pine, and one which should be included in every collection.

SEQUOIA GIGANTEA, "Wellingtonia," Mammoth Tree, and *S. sempervirens*, the "Redwood,"

grow to very large trees, but the positions they are to occupy ought to be chosen with great discretion, as they need plenty of space to grow in.

TAXODIUM DISTICHUM, the "Deciduous Cypress," grows well in swamps or near the margin of a stream or lake. It is a very interesting tree.

TAXUS (Yew). *T. baccata*, the "Common Yew," is of all evergreens at once the most English and the most beautiful in character; serviceable alike for almost every purpose for which trees are required—when planted as an avenue, as a single tree on a lawn. It may be seen at hundreds of places; as a screen tree, as a clipped tree in the formal garden, or as a hedge, for which purpose it is better than any other plant. Other useful varieties are *T. b. adpressa*, *T. b. adpressa aurea*, one of the most effective forms which is often grafted on *T. b. fastigiata*, the "Irish Yew" the result being a mushroom or pyramidal head, as shown in illustration No. 341. Although often decried by writers on gardens, there is no tree of natural shape which is so useful to the garden designer as the Irish Yew and its golden variety, *T. b. fastigiata aurea*. As a line of Yews, or for marking

FIG. 360.—*CYTISUS ALBA*.

the steps of a doorway, they are invaluable. Yews require to be placed with great discretion, as they sometimes, when improperly used, give a funereal appearance to a garden. Very effective specimens, grown in many shapes, can be obtained. They are, of course, expensive, but they give an immediate effect. There is an endless number of varieties of the type. *Conifers.*

THUYA. *T. occidentalis*, the "American Arborvitæ," and its varieties are useful as formal trees or for hedges. *T. Standishi*, *T. plicata*, the "Red" or "Canoe Cedar," and *T. Lobbi* (syn. *T. gigantea*) and varieties are useful trees for planting as a screen or shelter. It is a conifer much thought of by foresters and gardeners, but one which the writer has never been able to employ with good results. From a landscape gardener's point of view it would look best when standing out of a bed of low-growing shrubs. Other forms are *T. dolabrata* (syn. *Thuyopsis dolabrata*) *T. orientalis*, the "Chinese Arborvitæ." There are endless varieties of this form, all good in their various habits. The latter form is sometimes named *Biota orientalis*.

TSUGA. A genus of ornamental character, the type being *T. canadensis*, the "Hemlock Spruce." Distinct species are *T. Albertiana*, *T. Brunoniana*, the "Indian Hemlock Fir;" *T. Pattoniana*, *T. Sieboldi*, the "Japanese Hemlock Spruce," and *T. Hookeriana*.

FLOWERING SHRUBS, DECIDUOUS AND EVERGREEN.

AMELANCHIER. A genus of small trees, and shrubs, bearing in Spring dainty white flowers, which will thrive in any moderately rich soil. *A. canadensis*, the "June or Serviceberry," is the showiest. *A. c. oblongifolia*, the "Swamp Sugar Pear," a variety of the above, is also fine, whilst the following species grace a collection:—*A. alnifolia*, *A. asiatica*; *A. oligocarpa*; *A. utahensis* and *A. vulgaris*, the "Snowy Mespilus," with cream-coloured flowers, grow from 10 to 15 ft. high. T.S. *Flowering shrubs.*

ANDROMEDA. The most recent arrangement of genera in the Order Ericaceæ only records one species, viz. *A. polifolia*, a dwarf shrub with pink flowers. There are two distinct varieties from the type, *A. p. angustifolia* and *A. p. major*. Growth is greatly encouraged if peat and leaves are worked into the soil before planting. P.

ARBUTUS. An Ericaceous evergreen with bell-shaped flowers, its fruit resembles a strawberry, and ripens about a year after flowering. It thrives well in a sandy or peaty compost with plenty of moisture, and near the sea. The type, *A. Unedo*, the "Strawberry Tree," grows wild in the south of Ireland, while the varieties *A. U. compacta*, *A. U. integerrima*, *A. U. microphylla*, *A. U. quercifolia* and *A. U. rubra*, give quite a varied number of forms of the type. Other distinct varieties are *A. Andrachne*, *A. hybrida*, and *A. Menziesii*. S.P.

ARCTOSTAPHYLOS. This also belongs to the Order Ericaceæ. *A. Uva-ursi*, the "Bearberry," is a little trailing form, as also is the variety *A. californica*. *A. pungens* and *A. tomentosa* "Manzanita" are interesting forms quite resembling the *Arbutus*, and are excellent for shady positions. P.

AZALEA. See *Rhododendrons*.

BERBERIS. This is a genus of hardy and indispensable flowering shrubs; some species are of upright growth, others are of trailing habit, while others again have gracefully arched branches bearing racemes of yellow or orange-coloured flowers in the greatest profusion. Some varieties are evergreen and some deciduous and all will thrive well in any ordinary soil, and may be grown by those possessing little knowledge of gardening. The following are the most useful; *B. aquifolium* (syn. *Mahonia aquifolium*) and its varieties are evergreen; *B. Darwinii*, another evergreen, one of the best, bears orange-coloured flowers excellent for massing; *B. stenophylla*

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*Flowering
shrubs.*

is a hybrid, *B. empetrifolia* *B. Darwinii*, its long, gracefully arched branches bearing a profusion of small yellow flowers. *B. Thunbergii* is a choice Japanese species, the foliage of which turns a bright crimson in the Autumn; *B. vulgaris* is the well-known Berberry; *B. v. atropurpurea* is a purple-leaved variety; *B. Wallichiana*, an evergreen about 3 ft. high. T.S.

BUCKTHORN, SEA (URTICACEÆ). See Hippophae.

BROUSSONETIA PAPYRIFERA, the "Paper Mulberry," belongs to the same Order as the Elm and may be planted in large shrubberies.

BRYANTHUS. A genus resembling the Heaths. They may be planted with advantage in a rockery or in rough ground where they will not be disturbed; they grow well in peat. The best known species is *B. empetriformis*, while *B. Breweri*, *B. erecta* and *B. taxifolia* are all interesting. P.

BUDDLEIA. An interesting and useful genus belonging to the Order Loganiaceae. They succeed nearly everywhere and are good seaside plants; when planted inland, a position sheltered from the North and East winds is preferred. *B. globosa* is the form which has round orange flower-heads, and makes a bush 12 ft. high; *B. variabilis*, from China, has racemes of lilac-coloured flowers. *B. v. Veitchiana* is a great improvement, having very long racemes, sometimes over 2 ft. in length; the colour of which is much deeper than the type. S.

CALLUNA VULGARIS, the "Ling" See ERICA.

CALYCANTHUS. A genus of handsome, hardy, deciduous and sweet-scented shrubs. *C. floridus*, the "Carolina Allspice," is a lovely sweet-scented form; *C. glaucus* has glaucous-coloured leaves; *C. occidentalis*, a Californian species, grows larger than the others, often attaining a height of 10 ft. P.

CARAGANA. A useful Leguminous genus with yellow flowers. *C. arborescens* is a large shrub often over 15 ft. high. The forms *C. pendula* and *C. Redowski* are useful. *C. aurantiaca* makes a close-formed specimen, and *C. frutescens*, with its numerous varieties, are fit subjects for large shrubberies.

CASSANDRA CALYCVLATA, the "Leather-leaf" (syn. *Andromeda calyculata*), is a pretty shrub about 2 ft. high, useful for breaking up the flat portions of a rockery, as well as for forming a mass in front of other groups. Where possible, peat and leaf-mould should be used when planting. There are two varieties, *C. latifolia* and *C. nana*. P.

CEANOTHUS. See List of Climbers and Wall Plants.

CERCIS, comprises a genus of Leguminous shrubs and small trees. The clusters of reddish-purple flowers it bears make a very pleasing effect about the end of May. *C. canadensis*, the "Redbud," grows upwards of 15 ft. high and forms a large bush. *C. siliquastrum*, the "Judas Tree," grows over 20 ft. high, forming a small tree; there are two varieties, *C. s. alba* and *C. s. carnea* bearing respectively white and flesh-coloured flowers.

CHIMONANTHUS FRAGRANS (syn. *Calycanthus præcox*), from China and Japan, is suitable for a wall or sheltered position facing South, the flowers are very fragrant, pale yellow in colour, and open in January. *C. f. grandiflorus* has larger and deeper-coloured flowers.

CHIMONANTHUS VIRGINICA, the "Fringe Tree," makes a pretty show of drooping white flowers with fringed petals and attains a height of 10 to 30 ft. *C. retusa*, a handsome species with white flowers and very fragrant, is from China and Japan.

CHOISYA TERNATA, a beautiful evergreen shrub, bearing white sweet-scented flowers. It is very effective as a shrubby climber or when planted in peat or loamy soil in a sheltered position. Order Rutaceæ.

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- CISTUS.** A genus which is suitable for situations where the soil is dry and poor. The position should face South if possible, as its growths ripen better when exposed to the sun. The different species of this genus vary in height. A list of the most interesting is as follows: *C. corbariensis*, with white flowers, 2 ft. high; *C. crispus*, purple flowers, 2 ft. high; *C. cyprius*, petals white with a dark spot at base, height 4 ft.; *C. laurifolius*, a most useful form, 4 to 6 ft. high, with white flowers; *C. purpureus*, 2 ft. high; *C. ladaniferus* is a handsome form, but as it is somewhat tender it does not thrive in all parts of the country. *C. recognitus*, 2 ft. high, makes a grand show, as also does *C. monspeliensis* and its variety *C. florentinus*, a most effective low-growing shrub producing sheets of white flowers. The plants should be grown in pots up to the time of planting out, as they do not take well to transplanting from open ground. The best effect is obtained when they are planted in masses. *Flowering shrubs.*
- CLERODENDRON.** Belongs to the Order Verbenaceæ, and should be more largely planted than it has been, as in August and September, when the flowers appear, there is really a scarcity of bloom amongst the hardy shrubs. *C. fœtidum* (syn. *C. Bungei*), grows about 5 ft. high with quite a number of shoots, which bear terminal corymbs of lilac-rose flowers. *C. trichotomum* "Kusagi," from China and Japan, is the best hardy form, it grows to a height of 10 to 12 ft.; the flower-heads in terminal cymes of very fragrant blooms, with red calyx and white corolla, are really a fine sight: this species should be planted in groups.
- CLETHRA.** A genus of deciduous shrubs which bear racemes of white flowers; they belong to the Order Ericaceæ, and naturally need a peaty soil and the same treatment as most Ericaceous plants. *C. acuminata* grows over 10 ft. high; *alnifolia*, the "Sweet Pepper-bush," with its varieties, about 4 ft. high. P.
- COLUTEA.** An interesting genus of Leguminosæ, which flowers very freely and ripens fruits of a bladder-like shape. *C. arborescens*, the "Bladder Senna," grows to 10 ft. high. Other species are *C. cruenta* and *C. longialata*.
- CORNUS.** Ornamental shrubs and small trees, useful both when in and out of leaf, as the Winter state of some forms is very striking. A few of the best species and varieties are as follows:—*C. alba* grows 5 to 10 ft. high, with white flowers and white fruits, and in the Winter has deep red-coloured bark. Two good varieties are *C. a. sibirica variegata* and *C. a. Spathii*. *C. Baileyi* has red stems; *C. brachypoda* and its variety *C. b. variegata* are distinct and handsome; *C. florida*, the "Flowering Dogwood," grows over 20 ft. high; *C. mas*, "the Cornelian Cherry," "Cornel," is a species which makes a splendid show of yellow flowers early in the year when the tree is leafless; it is a native of Europe, and is useful for a large shrubbery. *C. sanguinea*, the "Common Dogwood," and *C. stolonifera* (syn. *C. alba*), the "Red Osier Dogwood," are useful for massing in the woods or by streams or ornamental lakes. T.
- CORONILLA.** *C. emerus*, the Scorpion Senna, is a pretty shrub with yellow flowers, growing 3 to 4 ft. high.
- CORYLUS.** *C. Avellana*, the "Common Hazel," is a type of this genus of Cupuliferæ. The two varieties, *C. aurea*, with golden foliage, and *C. heterophylla*, are useful shrubbery plants, as also are *C. maxima* and the variety *C. m. atropurpurea*.
- COTONEASTER.** Hardy shrubs requiring little or no care after planting, excellent for the shrubbery, or for training against walls. The following are the best; *C. angustifolia*, an orange-berried form of recent introduction; *C. bacillaris*, a deciduous shrub with dark purple fruits, over 15 ft. high; *C. buxifolia*, an evergreen, 6 ft. high; *C. Franchettii*, a Yunnan species. *C. frigida*, with deciduous leaves and bearing red fruits, makes a very fine effect, growing about 15 ft. high, and is most useful for forming a mass in a large shrubbery or the home park. *C. horizontalis*

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Flowering shrubs.

makes a spreading bush about 3 ft. high ; *C. macrophylla* is an evergreen species with red fruits, suitable for rockery or bank, or for covering low walls ; *C. multiflora* is a very pretty form, being more or less pendulous, very free flowering, and 4 to 6 ft. high ; *C. rotundifolia* grows about 4 ft. high, bears red fruits, and is a very useful species. *C. Simonsii*, a sub-evergreen, has orange-coloured fruits. The above named are the best of this genus. T.S.

FIG. 361.—QUALITIES OF FOLIAGE (VERTICAL LINE).

polished, or formal. The following is a list of the best forms of *Cytisus* : *C. albus*, the "White Spanish broom;" (Ill. No. 360). *C. a. incarnatus* is a variety tinged with red; *C. nigricans* grows 3 ft. high ; *C. præcox* grows 6 to 8 ft., the flowers being pale yellow ; *C. purpureus*, a low form, 1 to 2 ft. high. *C. scoparius*, the "Common Broom," speaks for itself, while the variety *C. s. andreanus*, with the reddish-bronze petals, makes, when planted in masses, a fine effect. T.S.

DABÆCIA POLIFOLIA, the "St. Dabœc's Heath," and often called *Menziesia*, grows 1 to 2 ft. high, belongs to

CYDONIA. *C. vulgaris*, the "Quince," is the type, while *C. japonica*, the "Japanese Quince," with red flowers, is a favourite for training against a wall ; they are also excellent for covering large mounds or banks. *C. Maulei* is a bushy species with red flowers, and *C. sinensis* is the "Chinese Quince." T.S.

CYRILLA. A lovely little shrub distinct in form, with racemes of white flowers, borne in a whorl round the stem. Peat should be worked into the soil when planting. *C. racemiflora*, the "Leatherwood," is a useful species. P.

CYTISUS. In the creation of garden effects there are few shrubs so useful as the "Common Broom," which seems to harmonize with any style, rough,

FIG. 362.—QUALITIES OF FOLIAGE (SILHOUETTE).

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the Order Ericaceæ, and is excellent for masses in a rockery or rough ground. The varieties, *D. alba* and *D. bicolor* are useful. *Flowering shrubs.*

DAPHNE. *D. Mezereum*, the "Mezereon," with red flowers, and the varieties *D. M. grandiflorum* and *D. M. album*, flower early in Spring, and are very fragrant. The following species are also very interesting: *D. Blagayana*, with white flowers. *D. Cneorum*, the "Garland Flower," and the variety *D. C. major*, grows about 1 ft. high. *D. laureola*, the "Spurge Laurel," grows about 3 ft. high, and has evergreen leaves. This makes a capital undergrowth. P.

DEUTZIA. Very beautiful deciduous flowering shrubs. The following is a list of the best. *D. corymbosa*, with white flowers, grows about 4 ft. high; *D. crenata* grows 8 ft. high; *D. gracilis* and its varieties are very good; *D. Lemoinei* is a hybrid between *D. gracilis* and *D. parviflora*. All the species flower during May and June. T.

DIERVILLA (syn. *Weigela*). Handsome flowering shrubs well deserving more extended cultivation. They thrive in any ordinary garden soil, are very profuse bloomers and have a graceful spreading habit; with their long racemes of bell-shaped flowers in Spring and gorgeous foliage in Autumn, they are

FIG. 363.—QUALITIES OF FOLIAGE (MASS).

FIG. 364.—QUALITIES OF FOLIAGE (LIGHT AND SHADE).

always pleasing. *D. floribunda* and *D. grandiflora* have given us *D. hybrida*, which comprises quite a number of excellent forms of which the following are most beautiful: Abel Carrière, Eva Rathke, *D. rosea*, *D. candida*, and *D. amabilis*. T.S.

ELÆAGNUS. This is a most useful genus, as it comprises both deciduous and evergreen

shrubs. The most useful forms are *E. argentea*, the "Silver Berry," which grows

TREES AND SHRUBS FOR GARDEN AND PARK.

Flowering shrubs.

over 8 ft. high ; *E. glabra* and *E. g. variegata* ; *E. macrophylla*, the "Fon Gumi ;" *E. multiflora*, and *E. pungens*, "Natsu Gumi," which has provided quite a number of very fine coloured varieties. *E. p. aurea*, *E. p. aureo-picta*, *E. p. Simonsii*, *E. p. S. aureo-variegata*, *E. p. tricolor*, and *E. p. variegata* are all worthy of places in large shrubberies. T.

ERICA (syn. Heath). A genus of pretty shrubby plants, very effective when grown in masses on the rockery or as edgings to shrubberies. On the outskirts of pleasure grounds there are often odd corners and scraps of ground where the soil is too poor for most shrubs and in such positions, heaths are most valuable. Another interesting feature is that the species and varieties now in cultivation provide a continual Ericaceous display of bloom throughout the year. *E. arborea* has white flowers ; *E. australis*, with purple-red flowers, borne in March and April, grows from 4 to 6 ft. high ; *E. carnea* and *E. c. alba* flower from February to April, and grow six inches high ; *E. ciliaris* and the variety *E. c. Maweanæ* flower about August. *E. cinerea*, with its numerous varieties, blooms throughout the Summer : the colours are very fine in these forms. *E. mediterranea* flowers from March to May, and grows about 4 ft. high ; but the best variety is *E. m. hybrida*, which flowers from December to the end of April, and grows 1 foot high ; while *E. multiflora*, *E. stricta*, *E. tetralix*, the "Cross-leaved Heath," and *E. vagans*, the "Cornish Heath," make a good display. All the forms of *Calluna* are worth planting on high or rough ground.

ESCALLONIA. See CLIMBERS.

EUCRYPHIA PINNATIFOLIA, a native of Chili, is one of the finest shrubs grown, but requires a sheltered position ; height 10 to 15 feet.

EUONYMUS. A genus containing both evergreen and deciduous shrubs and small trees. The following list is worth growing : *E. europæus*, the "Spindle Tree," is valuable for its display of red and yellow fruits ; *E. americanus* is the "Strawberry Bush ;" *E. japonicus*, with its numerous evergreen, variegated and golden forms, proves useful for shrubberies. T.

EXOCHORDA. A very beautiful shrub of compact growth, bearing white flowers in May ; it grows about 6 ft. high. *E. Alberti* and *E. grandiflora* are the two types. T.

FORSYTHIA. Ornamental shrubs which bear showy yellow flowers in February and March. *F. suspensa* thrives well as a climber or grown as a bush. When the flowering season is over, if the growths are cut back a fresh lot of shoots will spring up, to be covered the following year with masses of flowers. *F. viridissima* and *F. intermedia* are both good forms. T.S.

GAULTHERIA PROCUMBENS, the "Creeping Winter-green," is a pretty creeping shrub with white wax-like flowers and red berries, *G. Shallon* thrives well in the shade of trees. Both species may be used on the rockery. U.P.

GENISTA. This genus is closely allied to *Cytisus*, and belongs to Order Leguminosæ. The following species are the best : *G. ætensis*, grows over 15 ft. high, with pendulous habit, and bears yellow flowers ; *G. cinerea*, 8 to 10 ft. high, blooms in June, and is a very fine plant ; *G. hispanica*, the "Spanish Gorse," flowers in June, and grows 2 ft. high ; *G. pilosa*, 2 ft. high ; *G. tinctoria*, "Dyer's Greenweed," and its double form, growing about 18 inches high, are two especially pretty plants ; *G. virgata* grows upwards of 15 ft. high, and is excellent for planting in the park in the shade of other trees. T.

HALESIA TETRAPTERA, the "Snowdrop or Silver-bell Tree," has racemes of white flowers. Other species are *H. corymbosa* ; *H. diptera* ; *H. hispida*, "Asagara ;" and *H. parviflora* ; all very interesting shrubs. T.

HAMAMELIS. This genus is one of the prettiest and most useful of shrubs. Though it has been neglected by planters up to the present, it is hoped that those who are

TREES AND SHRUBS FOR GARDEN AND PARK.

practically acquainted with its value, at a season of the year when few or no flowers are in evidence, will do their best to introduce it in quantity. The following are all worthy of a place; *H. arborea*, the "Mansak," (from Japan, flowers in January); *H. japonica*, *H. j. Zuccariniana*, *H. mollis*, and *H. virginica*, the "Witch Hazel." T.

*Flowering
shrubs*

HEATH. See *ERICA*.

HEDYSARUM MULTIJUGUM, with purple flowers, is a dwarf shrub belonging to the Order Leguminosæ.

HIBISCUS SYRIACUS, forms a desirable class of deciduous flowering shrubs with malva-like flowers. Although perfectly hardy in the Midland, Southern and Western counties, and in gardens situated near the coast, they are not always reliable in Scotland or the North of England.

HIPPOPHAE RHAMNOIDES, the "Sea Buckthorn," is a hardy deciduous shrub or small tree; when trained as the latter, and when covered with fine bright, orange-coloured fruits, it is a very fine sight. It is most useful for the seaside, as it forms a good wind screen for protecting other plants. It should be noted that both male and female plants must be planted. S.

HYDRANGEA PANICULATA, is a very useful subject for a mass; *H. p. grandiflora* is a larger-flowered form than the type. T.

HYPERICUM. Very serviceable shrubs of varied types; some forms grow 5 ft. high, while others attain only 1 foot. The best forms are *H. Androsæmum*, "Tutsan," which grows 2 to 3 ft. high. The species *H. calycinum* (the Rose of Sharon), *H. Moserianum*, *H. Hookerianum*, and *H. patulum* are the most useful. T.

KALMIA. A genus of Ericaceæ commendable for their very beautiful flowers, combined with evergreen foliage. *K. angustifolia*, the "Sheep Laurel;" *K. glauca*; and *K. latifolia*, the "Calico-Bush," are noteworthy species. Peat should be added when planting. P.

KERRIA JAPONICA, a pretty cottage shrub with slender branches, bearing yellow flowers in great profusion. It is useful for nearly any situation; the varieties are also good.

LAURUSTINUS. See *Viburnum*.

LEDUM LATIFOLIUM belongs to the Order Ericaceæ, and requires similar treatment to others of the same Order. *L. palustre* and *L. p. dilatatum* are both worth growing. *L. palustre* is an excellent bog plant.

LEYCESTERIA FORMOSA is a handsome shrub of distinct appearance; it has white flowers with purple bracts, and will grow well in nearly all soils.

LILAC. See *SYRINGA*.

MAGNOLIA is one of the most ornamental and attractive flowering trees or shrubs known, but is not quite hardy as a bush in the North. *M. conspicua*, (syn. *M. Yulan*), is a handsome deciduous species of erect growth, its numerous large white flowers being very conspicuous and delightfully fragrant. *M. Soulangeana* is perhaps better than its parents (*M. conspicua* x *M. obovata*); it is of similar habit, but the flowers are shaded purple. The striking effect of the flowers, relieved against the bare deciduous branches and the wall of a house can only be judged by those who have seen them. The following are good and interesting species: *M. acuminata*, the "Cucumber Tree;" *M. grandiflora*, *M. Lennei*, *M. macrophylla*, *M. parviflora*, *M. stellata*, and *M. Watsoni*.

OLEARIA HAASTII is a most useful evergreen flowering shrub, excellent for the seaside. *O. macrodonta* is a good town shrub. T.S.

OSMANTHUS. An evergreen shrub effective in the border, and somewhat resembling a holly; it has prickly foliage and bears small fragrant white flowers. The most distinct varieties of *O. aquifolius* are *O. a. ilicifolius*, *O. a. latifolius*, *O. a. purpureus*, *O. a. variegatus*, and *O. a. rotundifolius*, but *O. Aquifolius* is the most satisfactory. T.S.

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Flowering shrubs.

PERNETTYA MUCRONATA grows 2 to 3 ft. high, and when planted in groups soon makes a dense mass of growth. The fruits are very showy ; there are red, white and pink forms. They are superb for Winter effect, and are easily grown in almost any soil or situation.

PHILADELPHUS. These ornamental and deciduous shrubs are welcomed by lovers of old-fashioned flowers, and are not only hardy, but succeed in any kind of soil or atmosphere. The best form is *P. coronarius*, the "Mock Orange," commonly known as "*Syringa*," and grows about 9 ft. high. There are other varieties of the type. *P. grandiflorus*, with the varieties *P. g. floribundus* and *laxus*, are good sorts which grow about 15 ft. high. *P. Lemoinei*, a hybrid (*P. microphyllus* x *P. coronarius*), is a very good type about 3 ft. high ; the variety *P. erectus* is also an improvement. T.S.

PIERIS, a genus of the Order Ericaceæ allied to *Andromeda*, which needs similar positions and treatment. The species are *P. floribunda*, *P. japonica*, *P. mariana*, "Stagger Bush," and *P. nitida*. P.

POTENTILLA FRUTICOSA is a pretty shrub 2 to 4 ft. high and bears numerous small yellow flowers.

PTELEA TRIFOLIATA, the "Hop Tree," is an interesting tree or large shrub ; it bears fruits which resemble hops, and are very conspicuous ; there are several varieties of the type.

RHODODENDRONS. The hybrids of some of the hardy species are generally admitted to be the showiest of hardy shrubs, being exceedingly striking when planted in groups and masses in the woodlands bounding the gardens, embracing as they do every shade of colour from the purest white to the richest crimson and purple, the colours of some varieties being simply gorgeous. The effectiveness of masses of *Rhododendrons* is often lost by the indiscriminate mixing of varieties ; much better results can be obtained by planting groups of six or eight together, and confining the mass to, say, as many varieties, carefully arranging the colours. Although peat-loving plants, they succeed admirably on any good loam, provided that it does not rest on limestone or chalk. The hybrid varieties are numberless, and it is a difficult matter to select a few of the best without feeling that there are many other good forms which ought to be included. The following will be found excellent :—

<i>RHODODENDRON ALARM</i> , centre white deeply tinged with scarlet.	<i>RHODODENDRON FASTUOSUM FL. PL.</i> , double lilac.
„ <i>ALBUM GRANDIFLORUM</i> , blush.	„ <i>FREDERICK WATERER</i> , fiery crimson, very fine.
„ <i>ASCOT BRILLIANT</i> , splendid red.	„ <i>HELEN WATERER</i> , pure white with crimson margin.
„ <i>ATROSANGUINEUM</i> , blood red.	„ <i>IAGO</i> , rosy carmine, early.
„ <i>BLANDIANUM</i> , rosy crimson.	„ <i>JACKSONI</i> , red, early.
„ <i>BOULE DE NEIGE</i> , an early white variety.	„ <i>JOHN WATERER</i> , dark crimson.
„ <i>CARACTACUS</i> , rich purple crimson, good truss.	„ <i>JOHN WALTER</i> , dark crimson.
„ <i>CAUCASICUM ALBUM</i> , white, fine foliage, early.	„ <i>LADY ELINOR CATHCART</i> , light rose with chocolate spots.
„ <i>CHEVALIER FELIX DE SAUVAGE</i> , deep rose pink with dark blotches.	„ <i>LORD ROBERTS</i> .
„ <i>CHRISTMAS CHEER</i> , deep pink, early.	„ <i>LUDWIG LEOPOLD LIEBIG</i> , bright cherry red.
„ <i>CUNNINGHAM'S WHITE</i> , most useful for general planting, early.	„ <i>MICHAEL WATERER</i> , crimson spotted.
„ <i>CYNTHIA</i> , large truss, pink.	„ <i>MADAME CARVALHO</i> , pure white, fine truss.
„ <i>DONCASTER</i> , red.	„ <i>MRS. JOHN CLUTTON</i> , the best hardy white.
„ <i>EVERESTIANUM</i> , rosy lilac, spotted and fringed, an excellent bloomer, fine foliage.	„ <i>MRS. JOHN WATERER</i> , rosy crimson.
	„ <i>MRS. HOLFORD</i> , rich salmon, large truss.
	„ <i>NERO</i> , dark rosy purple, finely spotted.

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<p>RHODODENDRON PINK PEARL, the finest of all the later introductions; it bears very freely, immense heads of beautiful pink wax-like flowers, should be in every collection.</p> <p>„ PURITY, white with yellow eye.</p> <p>„ SIR HENRY HAVELOCK, red.</p> <p>„ SIR ISAAC NEWTON, plum colour.</p>	<p>RHODODENDRON STELLA, pale rose with chocolate blotch.</p> <p>„ THE QUEEN, blush changing to white.</p> <p>„ THE WARRIOR, rosy scarlet.</p> <p>„ VAUBAN, mauve with yellow blotch</p> <p>„ WHITE PEARL, excellent white.</p> <p>„ WILLIAM DOWNING, dark puce-coloured.</p> <p>„ WILLIAM AUSTIN, deep red.</p>	<p><i>Flowering shrubs.</i></p>
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There is a host of useful dwarf evergreen species which make a most handsome display when in flower; some may be used to advantage on the rockery or for massing in the shrubbery border. It will be sufficient to mention the most important. *R. racemosum* is a Chinese dwarf Rhododendron, growing about 2 ft. high, with a mass of shoots springing from the base which bear beautiful pink flowers; it is a plant deserving extended cultivation. *R. rubiginosum*, from Yunnan, grows 2 to 3 ft. high. *R. yunnanense*; *R. lepidotum*, from the Alpine Himalaya, and *R. ferrugineum*, from the Alps of Europe, with its varieties, are very useful for the rockery. *R. Wilsoni* and *R. arbutifolium* are of garden origin. The few mentioned by no means exhaust the species which are valuable for planting, as there is quite a large collection of species alone. There is, besides the evergreen, the deciduous section of Rhododendrons, which is familiarly known as the Azalea, and which gives one of the finest displays of the season. It will be sufficient to give the species alone, for it is well known that it is from these so many of the fine hybrids have been produced:—*R. calendulaceum*, *R. flavum*, *R. nudiflorum*, *R. hodora*, *R. rhombicum*, *R. sinense* (syn. *Azalea mollis*), *R. Vaseyi*, and *R. viscosum*, the “Swamp Honeysuckle.” In all nurseries of repute a large quantity of good hybrids are offered under names adopted by the trade. T.P.

RHUS. This genus is comprised of small deciduous trees and shrubs. It is a very useful subject for rough shrubberies. The most prominent forms are *R. cotinoides*, the “Chittam Wood;” *R. Cotinus*, the “Venetian Sumach;” *R. glabra*, the “Smooth Sumach;” and *R. Osbeckii*. T.

RIBES (Flowering Currants). These old-fashioned garden shrubs are general favourites, with their profusion of bright flowers so welcome in the early Spring. They grow readily in most soils. *R. aureum*, the “Buffalo or Missouri Currant” (with yellow flowers), *R. cerum* (white flowers), *Gordonianum* (a hybrid, *sanguineum* × *aureum*); *R. sanguineum*, the “Flowering Currant,” and its varieties are all handsome. *R. speciosum* (syn. *R. fuchsoides*), with red flowers resembling a fuchsia, is a very pretty form. T.S.

SAMBUCUS (Elder). Suitable shrubs for large masses of foliage in shrubberies. The best species and varieties are *S. canadensis*; *S. nigra*, the “Common Elder,” with its varieties, *S. racemosa*, the “Red-berried Elder;” while *S. r. laciniata*, a cut-leaved form, and *S. r. plumosa aurea*, a splendid golden variety, are the most serviceable.

SKIMMIA. Dwarf evergreen shrubs having thick, fleshy foliage, and bearing heads of white flowers in the Spring and red berries in the Autumn. The chief species are *S. Fortunei*, *S. japonica*, and *S. laureola*. T.S.

SNOWBERRY. See SYMPHORICARPUS.

SPARTIUM JUNCEUM, the “Yellow Spanish Broom,” belongs to the Order Leguminosæ. It should be more largely planted than at present, as it gives a fine display of yellow flowers. T.

SPIRÆA. A large genus comprising many shrubby species. The most useful are *S. Aitchisoni*, *S. arguta*, *S. bracteata*, *S. bullata*, *S. discolor*, *S. Douglasii*, *S. japonica* and its varieties, especially *S. j.* “Anthony Waterer.” Other forms are *S. prunifolia*, *S. Lindleyana* and *S. Thunbergi*. T.S.

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STAPHYLEA. A small genus with deciduous shrubs bearing white flowers. The most interesting are: *S. colchica*; *S. pinnata*, the "Bladder-nut;" *S. Coulombieri*, and *S. trifolia*, the "American Bladder-nut." U.

SYMPHORICARPUS. A genus distinct owing to the fine display of white berries in the Autumn. *S. racemosus*, the "Snowberry," is the type; *S. vulgaris* is the "Indian Currant," or "Coral-berry." U.T.S.

SYRINGA (Lilac). Shrubs of this genus deserve a place in every garden, not, as is usual, merely for the sake of variety, but arranged in masses in borders devoted entirely to them; they are useful planted as a screen, either in the shape of a thick hedge or border. It will be interesting to note some of the species and hybrids. *S. Chinensis*, the "Rouen Lilac," *S. Emodi* and its varieties, *S. japonica*, *S. persica*, the "Persian Lilac," with its varieties *S. p. alba* and *S. p. laciniata*; while *S. vulgaris*, the "Common Lilac," recommends itself. A list of hybrid forms are as selected: *S. alba*, *a. grandiflora*, Charles X., La Ville de Troyes, Marie Legraye, President Grevy, Souvenir de L. Spath, Lemoinei, Leon Simon and Michael Buchner. T.S.U.

TAMARIX. An excellent seaside shrub. *T. anglica*, the "Tamarisk," with pink flowers, *T. chinensis*, *T. gallica*, *T. hispida*, *T. Pallasii* and its lovely variety *T. P. rosea*, are the best forms. T.S.

ULEX EUROPEUS, the common "Furze, Gorse or Whin," as it is variously styled in different districts. The variety *U. e. flore-pleno* is of double form. *U. nanus* and *U. Gallii* are interesting; the latter has masses of flowers late in the season. T.S.

VERONICA. This genus has many useful shrubs, especially for seaside gardens. The best forms both for beauty of flower and foliage, are *V. Andersonii*, *V. anomala*, *V. angustifolia*, *V. buxifolia* and *V. Traversii*. S.

VIBURNUM. Most interesting and useful shrubs, very effective for the shrubbery. *V. Opulus*, the "Guelder Rose," with *V. O. sterile*, the "Snowball Tree;" are the best known; while *V. acerifolium*, "Dockmackie;" *V. Lantana*, the "Wayfaring Tree;" *V. lentago*, the "Sheep-berry;" *V. Tinus*, the "Laurustinus;" *V. plicatum* and *V. tomentosum*, with its varieties, are very interesting. A very promising species named *V. Carlesii*, which is very sweet-scented, deserves to have a sheltered position. T.S.

WEIGELA. See **DIERVILLA**.

XANTHOCERAS SORBIFOLIA. A large deciduous shrub, bearing racemes of white flowers with a blotch at the base of the petal. It is worth growing as it is a very handsome shrub.

ZENOBIA. An Ericaceous shrub growing some 2½ ft. high. It is very pretty when planted in a mass; it bears white flowers in June. The varieties *Z. pulverulenta* and *Z. quercifolia* are good forms.

EVERGREEN SHRUBS.

Evergreen shrubs.

In addition to the foregoing there are certain evergreen shrubs, grown entirely for their foliage. There is not a great number of forms, but as a class they are amongst the most valuable material which the garden maker has at his disposal. For the most part they are extremely hardy and suitable both for town and seaside gardens.

AUCUBA. An evergreen largely used in town gardens, but often planted to the exclusion of choice shrubs. There are two species, *A. japonica*, with a host of varieties, and *A. himalaica* from the Eastern Himalaya.

BUXUS SEMPERVIRENS, the common Box, is valuable as a town plant, as undergrowth or for shady borders; also for the formation of hedges or as single specimens for clipping or otherwise. The best varieties are the Handsworth box, a bright shiny greyish-green variety, which has somewhat larger leaves than the ordinary one, and

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a new broad-leaved variety, called *B. s. latifolia nova*, which is darker in colour than the preceding. Another very useful variety is *B. s. myrtifolia*, while quite a large number of varieties of *B. sempervirens* are offered by nurserymen. The "Edging Box," is *B. s. suffruticosa*. T.S.

Evergreen shrubs.

EUONYMUS, a class of shrubs which is indispensable for planting in seaside or town gardens. In London, there are few if any shrubs which succeed so well, whilst the number of diverse varieties almost makes it possible to make an effective plantation by their use alone. *E. japonicus* is the evergreen type. It is not necessary to name any of the varieties, as they are all good and effective. *E. radicans* and its varieties should be used for low carpet shrubberies or as a border. S.T.

ILEX (Holly). Hollies are of all evergreen shrubs the most reliable. Their extreme hardiness in all sorts of positions, their power to withstand smoke and chemicals, and the fact that, whilst preferring a moderately heavy loam, they succeed on almost any soil, growing in shade or sun, coupled with their power to withstand strong draughts and biting winds, gives them a unique position among evergreen shrubs. Moreover, hollies are interesting from the fact that they are truly British, most of the varieties having sprung from the common *Ilex Aquifolium*. From the numerous varieties now grown only a few are selected, but this list will be found quite long enough for practical purposes. Taking the green varieties first, the following are all good. S.T.U.

ILEX AQUIFOLIUM, The "Common Holly," invaluable for hedges.

- „ *A. BALEARICA*.
- „ *A. CONTORTA* (Corkscrew Holly). This variety is of moderate growth and compact.
- „ *A. DONNINGTONENSIS*. An excellent variety for withstanding the smoke of towns.
- „ *DAHOON* OR *I. A. SCOTICA*. A very hardy smooth-leaved variety.
- „ *A. FEROX* (Hedgehog Holly), a dwarf variety with very prickly leaves. The plant is of very compact habit, more inclined to make a spreading than an upright bush.
- „ *A. HODGKINSII*. Probably the best of the broad-leaved varieties, and one which is a great favourite with all town gardeners. It is a sturdy grower and makes a very handsome shrub.

ILEX A. FRUCTO-LUTEO, yellow berried. This variety has the attraction of bearing its beautiful yellow berries on very young plants, but apart from this it is an excellent green holly.

- „ *A. LAURIFOLIA*. Of all the green hollies this is the handsomest, its fine dark glossy leaves giving it a massiveness which renders it a very desirable subject for the back of the shrubbery borders.
- „ *MADERIENSE*. Bears handsome red berries on young plants.
- „ *MINORCA*, syn. *balearica*. A small-leaved variety, excellent for borders.
- „ *MYRTIFOLIA*, Myrtle-leaved. Also a small-leaved variety: the stems of this holly add much to its effectiveness.
- „ *PLATYPHYLLA*. A variety introduced from the Canary Islands.

The following are gold and silver variegated varieties:—

ILEX AQUIFOLIUM ARGENTEA MEDIO-PICTA, "Silver Milkmaid," a great favourite.

- „ *A. ARGENTEA REGINA* "Silver Queen," the best of the silver Hollies.
- „ *A. ARGENTEA MARGINATA*.
- „ *A. AUREA REGINA*, "Golden Queen." This may be regarded as the finest of all the variegated Hollies, and makes a splendid tree, as the leaves are large and of a beautiful golden colour.

ILEX A. AUREA PENDULA, "Waterer's Gold Weeping."

- „ *A. FLAVESCENS*, "Moonlight."
- „ *A. FEROX ARGENTEA*, "Silver Hedgehog Holly"
- „ *A. HANDSWORTHIENSIS*, "Handsworth New Silver."
- „ *A. LATIFOLIA AUREO-MARGINATA*.
- „ *A. WATERIANA*.

LAURUSTINUS. See *Viburnum tinus* under flowering shrubs.

LAVANDULA (or Lavender). No garden which seeks the beauty of homeliness can dispense with the beautiful gray-leaved bushes of Lavender and its becoming associate Rosemary, which give out their sweet odours when rubbed, and have the added charm of their blue-gray flowers. They are quite acquisitions for hot, sandy soils and are

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*Evergreen
shrubs.*

proof against prolonged droughts. Lavender looks best in long hedges or masses, and is best propagated by early Summer cuttings. After the third or fourth year of growth the bushes deteriorate and need replanting.

PRUNUS LAUROCERASUS. (syn. *Cerasus Laurocerasus*), the "Laurel," is so well known as to require little notice here. So many gardens seem to be planted entirely with them that a word of caution is necessary for, owing to their vigorous growth, they will oust the more beautiful but slower-growing shrubs unless kept steadily within bounds. Laurels should generally be considered as nursers, planted to furnish the beds and give protection to other shrubs until they are sufficiently established to take care of themselves, when they may be lifted and used elsewhere as undergrowths, for which purpose they are invaluable. They may also be planted permanently in places where a quick-growing screen is required, or for furnishing a steep bank with foliage instead of grass. Laurel hedges are not, as a rule, a great success, as in a few years they become ragged and woody at the bottom. The best form for this purpose is *P. L. caucasica*, which, if kept low and trimmed with a knife instead of with shears, makes a fairly good fence. As an undergrowth *P. L. rotundifolia* is probably the best variety. *P. L. latifolia* makes a fine shrub if kept carefully pruned. Other varieties are only interesting as botanical specimens. T.S.

PRUNUS LUSITANICA (syn. *Cerasus lusitanica*), the "Portugal Laurel," is in every way a most valuable shrub, and is adapted to any position, whether windy or exposed, and will do well in most town gardens. For hedging it is superior to the common Laurel, the smaller dark leaves giving a neater appearance. The small-leaved varieties are very good. T.S.

PHILLYREA. These comparatively little known shrubs are very similar in appearance and growth to small-leaved evergreen Oaks. They make fine bushes, growing up to 8 or 10 feet in height; they succeed in most soils, and are valuable for town or suburban gardens, or for cold, windy situations. The best species and varieties are *P. angustifolia*, *P. latifolia* with its varieties, *P. ilicifolia* and *P. rotundifolia*; *P. media*, with *P. m. buxifolia*, *P. oleæfolia* and *P. Vilmoriniana*. T.S.

QUERCUS. This genus includes many very useful evergreen trees, which in some localities are invaluable. This is especially so near the coast or in suburban gardens which are near smoky towns. Along the South and West coasts of England they grow and succeed quite close to the sea, but in many places along the East coast, especially if in exposed situations, they are not so successful. The effect of a short avenue of Evergreen Oaks, more particularly when the branches meet over the path, is very fine indeed, while for a wind screen they are excellent, the density of their foliage forming a veritable wall of greenery. Evergreen Oaks are very difficult to establish unless they are purchased in pots, in which way many nurserymen grow them. The best forms are *Q. Ilex*, the "Holm Oak," and its varieties; *Q. acuta* *Q. coccifera*, the "Kermes Oak;" *Q. glauca* and *Q. phillyreoides*. T.S.

ROSEMARY. *Rosemarinus officinalis*. This hardy evergreen shrub should be found, together with Lavender, in every garden. It is effective all the year round, and especially in Winter. Rosemary is best propagated by early Summer cuttings; it prefers the base of a low wall, but it does not resent hot, sandy soils and full exposure to the sun.

FIG. 365.—CLIMBERS AT WOOD, DEVONSHIRE, LOOKING TOWARDS THE HOUSE.

FIG. 366.—CLIMBERS AT WOOD, DEVONSHIRE, LOOKING AWAY FROM THE HOUSE.

CHAPTER XIX.

Climbers, the jaunty prodigals of the garden, led by the irrepressible ivy green or the all-enveloping Virginian-creeper, so resplendent in Autumn, are invaluable in almost every situation. From the tangled forest brake where added vegetation is superfluous, to the dingy slum where every green leaf is welcome, they intrude unabashed, mounting up by their clinging tendrils and flinging out their prehensory masses and sprays. In addition to their beauty of foliage and blossom, they possess, in the honeysuckle and its kindred, auxiliaries which win us by their odours rare and sweet, which secure them the desired recognition. Everywhere they gain a place from economic reasons; the profuse display which they make for so little ground space afforded, gives them a decided popularity beyond that of self-supporting plants. In the garden they are beautiful trained over verandahs, forming sheets of pleasing foliage, delighting the eye with their brilliantly coloured flowers on backgrounds of cool greenery, making shaded walks and long protected bowers, where we can enjoy at sultry noon the coolness of declining day. Wherever there are terrace walls fronted with flower beds, the general effect is assisted considerably if the wall is clothed with the foliage of choice Ivies, Ceanothus, or Cratægus, which make a much more effective background for flowers than brick or stone.

There are limitations and bounds within which climbers should be restrained. Sometimes the grosser common ivy, which can subsist on the mortar in walls even when severed from the root, and the Virginian-creeper are allowed to overstep these, as when they are allowed to make costly and dangerous inroads into the walls and roofs of habitations, or hide beautifully dressed stonework and even fine carving. With thoughtless people this brings discredit on the whole family of the garden designer's reinforcements, whereas, if but a few moments' reflection were given to the proper selection of climbers, trouble would not follow. Similar remonstrances might be expressed when, in those parts of the grounds where it is desirable to have a clean-cut appearance of columnar tree trunks and shorn grass, ivy and honeysuckle are allowed to grow over both young and old trees indiscriminately, and envelope all in an atmosphere of unrestraint.

On the other hand, much needless expense is often lavished upon the adornment and detail of supplementary buildings such as entrances, gate piers and even outbuildings, where, if a little foresight had been exercised and the climbers taken into account when planning, any rough foundation of broken stone or brick combined with cement roughcast would have answered the purpose, though in illustration No. 367 the eye demands the clear-cut lines of the noble gate piers to form a complement to the fine wrought iron, there being sufficient vegetation in the Scots firs and the climber-clad walls.

*Too
prodigal
climbers.*

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

Climbers.

In the following list of climbers are included a number of plants, such as *Garrya elliptica* and *Berberis Darwinii*, which are of a shrubby growth. These are intended for covering low walls, or for planting in positions against the house or other buildings of no great height: they are most effective, for instance, placed under a bay or oriel window. They should be trained as half climbers and half bush, the principal branches being secured to the walls, but the lateral shoots allowed to grow outwards.

ABELIA. A pretty genus of small shrubs, which are fitting subjects for covering walls. *A. chinensis*, with pinkish flowers; *A. floribunda*, flowers rosy purple in colour; and *A. triflora*, blooms very sweet scented, deserve places on a sheltered wall.

AMPELOPSIS VEITCHII. See **VITIS**.

ARISTOLOCHIA SIPHO, the large-leaved climber which is growing over Professor Ruskin's house at Brantwood. It is a deciduous species, but the shoots are green in Winter. This plant flourishes in almost any aspect.

AZARA MICROPHYLLA, a small-leaved and very showy hardy evergreen shrub or climber, with numerous small green flowers which are very fragrant.

BUDDLEIA, as described in the list of shrubs, is an excellent shrubby climber for covering walls, and one which does well by the sea. The best forms are *B. variabilis*, *B. v. Veitchiana*, and *B. globosa*.

CALYSTEGIA, the "Bear-bind," belonging to the Order *Convolvulaceæ*, makes a splendid climber, and covers quickly. The following are distinct forms: *C. hederacea*, *C. sepium*, the "Common Bear-bind;" *C. Soldanella*, and *C. macrostegia*.

CARPENTERIA CALIFORNICA, an ornamental tall-growing shrub, thriving in any good soil, but requiring the protection of a South wall. It has long lanceolate leaves, white on the underside, and white flowers.

CEANOTHUS. In warm sheltered positions, or near the coast, few climbers surpass the *Ceanothus*. The habit of the plant, which is half shrubby and evergreen, commends it for many positions where it is difficult to find a suitable climber, as for instance round a verandah pillar, clothing a piece of blank wall, or high terrace wall. It is not perfectly hardy in Scotland or the North of England, and resents a cold clay soil. The best forms are *C. americanus*, the "New Jersey Tea," with white flowers; *C. azureus* (blue), *C. divaricatus* (pale blue), *C. papillosus*, with narrow leaves and blue flowers; *C. rigidus*, flowers a splendid rich blue colour; *C. thyrsiflorus*, the "California Lilac," and *C. Veitchianus*. A large number of garden hybrids are offered by nurserymen, the best being *Gloire de Versailles* (blue), *Indigo*

FIG. 367.—NOBLE ARCHITECTURE OBSCURED BY TOO RAMPANT CLIMBERS.

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

(the finest of all the hybrids), George Simon (rose), Albert Pettet (rose), Gloire de Plantières (blue), and Perle Rose.

CHIMONANTHUS FRAGRANS, with C. F. GRANDIFLORUS, makes a splendid fragrant wall plant suitable for a sheltered position.

CONVOLVULUS, the "Bindweed," is a very common climber, but nevertheless pretty. There is quite a large number of forms, all of which are useful.

COTONEASTER. Many of the species in this genus have rather a flat form of growth, and adapt themselves readily for covering walls. C. microphylla, C. angustifolia, C. Simonsii, and C. rotundifolia are suitable for covering low walls or for training up the jambs and mullions of a window.

CRATÆGUS PYRACANTHA, with its clusters of red berries in the Autumn and Winter, is useful for covering a wall; the flowers are similar to most other thorns. C. P. Lelandii is an improved variety of the type.

CLEMATIS. Although decidedly popular, these climbers are not employed as extensively as they deserve to be. The ease with which they can be reared ought in itself to be sufficient inducement to extended cultivation. For giving a picturesque character to a cottage in the least possible time C. montana is difficult to surpass; for the porch C. Jackmanii, with its beautiful purple flowers will, within a very short time, make a show; for a pergola, C. flammula, C. montana, or C. vitalba are excellent. The choicer varieties, such as C. Beauty of Worcester, C. Anderson Henryi, etc., make a grand show when grown laterally over wooden pillars; in fact, there are few positions in which Clematis of some sort may not be planted.

FIG. 368.

No fear of monotony from lack of varieties obtainable are quite sufficient security against this. The following are all good:--

	Time of Flowering.		Time of Flowering.
ALBA MAGNA, white flowers with purple brown anthers	July to Oct.	FAIRY QUEEN, pale flesh-pink bar ...	July to Oct.
ANDERSON HENRYI, one of the best; creamy white large flowers; effective if trained over trellis	July to Oct.	FLAMMULA, sweet-scented, white, recommended for pergolas	June to July.
BEAUTY OF WORCESTER produces single and double flowers on same plant; bluish violet, with white stamens. A vigorous grower and a remarkably free and continuous bloomer, flowering at almost every joint	June to Oct.	JACKMANII, intense violet-purple ...	July to Oct.
BLUE GEM, pale cerulean blue, fading to satin mauve	July to Oct.	„ ALBA, fine white	July to Oct.
COUNTESS OF LOVELACE, bluish violet, double	June to July.	„ RUBRA, fine red	July to Oct.
DUCHESS OF EDINBURGH, an excellent and sweet-scented variety with double white flowers	June to July.	LADY CAROLINA NEVILLE, French white with mauve bars	July to Oct.
		LADY NORTHCLIFFE, blue	July to Oct.
		LORD NEVILLE, dark plum colour; the stamens are much lighter, but the anthers are dark; the flowers are crinkled, which, added to the colour, makes the plant distinctive	July to Oct.
		LOUIS VAN HOUTTE, violet purple, a free grower and hardy	June to Oct.

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

Climbers.

	Time of Flowering.		Time of Flowering.
MADAME EDOUARD ANDRÉ, is of the Jackmanii type, but eclipses it in colour which is brilliant crimson, a colour hitherto unknown amongst Clematis. Very hardy, and a rapid grower	July to Oct.	NELLY MOSER, pink	July to Oct
MARCEL MOSER, beautiful mauve violet, with red bar	July to Oct.	PURPUREA ELEGANS, deep violet purple, one of the best of its class ; very effective planted in conjunction with C. Anderson Henryi	July to Oct.
MONTANA. Although a small-flowered variety, this is one of the most useful of climbers, growing almost anywhere. It is inclined to get ragged in appearance if not trained or pruned ...	May to June.	PRINCESS BEATRICE. A variety of merit. The flowers, 6 to 8 inches across, are of great substance, the petals being broad and overlapping each other. The colour of the flower is silvery lilac	July to Oct.
M. RUBENS, a red form of the above		SIR GARNET WOLSELEY, slaty-blue ...	May to June.
MRS. GEORGE JACKMAN, satin white, very beautiful	June to Oct.	VENUS VICTRIX, a fine double-flowered variety, lavender-blue, and very beautiful	July to Oct.
MISS BATEMAN, white, red anthers ...	May to July.	WILLIAM KENNETT, deep lavender ...	June to Oct.

Other good species are *C. alpina*, *C. aromatica*, *C. campaniflora*, *C. crispa*, *C. florida*, *C. orientalis*, *C. paniculata*, *C. patens* and *C. viticella*.

CYDONIA JAPONICA, the "Japanese Quince," is a great favourite for training against a wall, and has red flowers. There are numerous other varieties with different coloured blooms. It is also useful as a shrub.

ESCALLONIA. A popular climber for seaside gardens, excellent for clothing low buildings or walls. The best are *E. macrantha*, reddish pink ; *E. Philippiana*, with white flowers ; and *E. langleyensis*, (*E. Philippiana* x *E. macrantha*) bright scarlet. *E. exoniensis* is a very beautiful white form.

EUCRYPHIA BILLARDIERI. This species is generally treated as a greenhouse shrub, but is quite hardy grown in peat and sand against a South wall. It bears very showy white flowers in great profusion. Other species are *E. cordifolia* and *E. pinnatifolia*.

GARRYA ELLIPTICA. This, although usually considered a shrub, makes a most excellent wall plant, its foliage resembling that of an evergreen oak. Its specific beauty is to be attributed to the numerous pale green hazel-like catkins which hang from the plant throughout the Winter months, thus adding interest to the walls at a time when most climbers are dormant.

HEDERA (Ivy). *H. helix*, the Common Ivy, is well known, and everyone realizes its usefulness. The most distinct forms from the trailing sections are *H. H. algeriensis* variegata, *H. H. atropurpurea*, *H. H. angularis*, *H. H. foliis aureis*, *H. H. canariensis*, the "Irish Ivy;" *H. H. Cavendishii*, *H. H. Crippsi*, *H. H. maderiensis*, *H. H. variegata*, *H. H. palmata aurea*, *H. H. rhombea*, and a host of others. *H. H. arborescens*, *H. H. foliis argenteis marginatis*, *H. H. canariensis arborescens*, *H. H. digitata*, and *H. H. Raegneriana*, are worthy examples of the tree section.

HELICHRYSUM ROSMARINIFOLIUM. "Snow in Summer." A beautiful shrub admirably adapted for training over a terrace wall, but it is also hardy in the open border in the South of England.

JASMINUM. A beautiful genus of well-known climbers, the most useful being *J. officinale*, the "Jessamine," with the variety *J. o. affine*. Interesting species are *J. nudiflorum*, with yellow flowers, which open in the Winter months ; also *J. humile* and *J. fruticans*, while *J. primulinum*, an introduction from Yunnan, should be given a very sheltered position.

LONICERA PERICLYMENUM, the "Honeysuckle" or "Woodbine," is well known in Europe as a beautiful climber. A great variety of forms is offered by nurserymen, the best being *L. P. belgica*, *L. P. serotina* ; also the nursery forms of late and early Dutch Honeysuckle ; *L. sempervirens*, the "Trumpet Honeysuckle;" *L. Caprifolium*, *L.*

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

japonica, and the varieties *L. j. Halliana*, *L. j. flexuosa*, and *L. j. aurea-reticulata*. *Climbers*. Although so well known, they are not planted as freely as they deserve to be. For walls having a North-west and North-east aspect, and for planting in shade, they are indispensable; whilst for bowers, covering trellis, and training up pillars they have few equals, combining beauty of flower with the most delicious scent.

MAGNOLIA GRANDIFLORA, the "Bull Bay," with its various forms, are excellent evergreens for wall planting; while *M. conspicua*, the "Yulan," *M. c. Soulangiana* and *M. Lennei* are good deciduous forms. (Ill. No. 369).

OZOTHAMNUS ROSMARINIFOLIUS, an Australian shrub requiring the protection of a wall; it bears heads of white flowers in dense corymbs during July; the leaves are small.

POLYGONUM BALDSCHUANICUM, a rapid grower with panicles of pinky-white flowers.

SOPHORA VICIFOLIA, a most useful wall plant.

TRACHELOSPERMUM CROCOSTOMUM is a beautiful climber with pale yellow flowers, which are very sweet-scented. It is most suitable for a wall in a sheltered position.

TROPÆOLUM SPECIOSUM (Flame Flower). The scarlet-flowered climber which makes such a splendid sheet of colour in front of many Westmorland cottages. It succeeds best with an East or West aspect.

VITIS INCONSTANS (syn. *Ampelopsis Veitchii*). One of the most beautiful of climbers, charming alike in Spring-time, when bursting into leaf, and gorgeous in the Autumn when the leaves are touched by the first slight frost. This climber does not like new cement work; it is, however, very easy to rear, and once established grows at a remarkable speed, requiring no nailing, and flourishing in almost any atmosphere.

Another variety is *V. purpurea*, a seedling of great merit, which has purple leaves. Other good and interesting climbers in this genus are *V. Cognetiæ*, with large leaves; *V. quinquefolia*, the "Virginia Creeper;" *V. vinifera*, the "Grape Vine;" *V. v. purpurea*, with purple leaves; *V. Romaneti*, *V. Thunbergii*, and many others. *V. Henryana* is a new variety with beautiful mottled leaves, but not yet proved hardy in the Northern counties.

FIG. 369.—*MAGNOLIA CONSPICUA SOULANGIANA*.

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

WISTARIA. A beautiful climber which covers very quickly. The forms are *W. chinensis*, *W. japonica*, *W. frutescens*, and *W. multijuga*, with racemes of flowers eighteen inches long.

HARDY ROSES FOR WALLS, PILLARS, AND BOWERS.

Roses.

The great beauty of many of the new hybrid perpetual roses, and the desirability of finding a place for them, is fully acknowledged, but I do not think they should occupy the entire area available to the exclusion of many varieties which helped to make, and which still make, some of the older gardens so delightful. The fine old Scotch climbing roses, so wayward in their growth, but covered with clusters of fragrant flowers, the Banksian and Boursaults, the old Provence and cabbage roses, notwithstanding all the recent improvements, might still be planted with great

FIG. 370.—CLIMBER COVERED TERRACE WALLS.

advantage in our gardens. Roses have, to the garden designer, other qualities than mere size, and for this reason he is much more interested in the good work done by rose-growers in the raising of the many magnificent varieties of hardy tea roses, than in some of the later additions to hybrid perpetuals. The varieties of single roses and briars are now very numerous, but unfortunately the flowering season is a very short one. It

is only necessary to mention Paul's Carmine Pillar and Lord Penzance's Sweet Briars to realize how much our gardens have been enriched by the indefatigable industry of rose enthusiasts; and we are equally indebted to them for the re-discovery of old favourites and the importation of many varieties, such as the Crimson Rambler and the finer forms of *Wichuraiana*.

AYRSHIRE ROSES including Bennett's Seedling, pure white and strong; Dundee Rambler, white tinged pink; *Félicité Perpétue*, creamy white, very double in clusters, an evergreen variety; *Queen of the Belgians*, white; *Splendens* or *Myrrh-scented*, flesh colour.

BOURSAULT. There are a number of varieties of Boursault roses, but the best for general planting are *Amadis*, a large crimson-flowered variety; *Elegans*, crimson, purple and white stripes; and *Inermis* a bright red.

BANKSIAN FORTUNEI, white and sweet. There are

also the common white and yellow varieties, both of which are beautifully scented.

CLIMBING DEVONIENSIS, creamy white, very large and full.

GLOIRE DE DIJON, yellow, tinted with salmon, a very fine rose—the rose of roses, without question the finest and most useful climbing rose in cultivation.

MACARTNEY, an extremely pretty single white rose which may be trained over walls, fences, pergolas, trellis, or almost anywhere where freedom of growth is required.

MULTIFLORA, pale flesh.

MOSCHATA, the "Musk Rose" (syn. *Brunonii*). As the name implies, these are fragrant. The following are good, viz.: *Fringed*, which is a pink colour with cup-shaped serrated petals; *Princess de Nassau*, with yellow cup-shaped flowers; and *Rivers*, which has cream-coloured flowers.

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

NOISETTE ROSES. Most of the roses in this class bloom in clusters, they are the finest *Roses.* of roses for South and West walls. For planting against terrace walls there are very few climbers to equal them. Most of them bear large and handsome flowers, are highly fragrant, and of vigorous climbing habit. A few of the best are:—

AIMÉE VIBERT, white and continuous.

BOUQUET D'OR, deep yellow, shaded copper.

CELINE FORESTIER, lemon, good free bloomer.

CLOTH OF GOLD, yellow, large and very splendid.

COQUETTE DES BLANCHES, pure white, very fine.

JAUNE DESPREZ, pale lemon.

LAMARQUE, creamy white.

MADAME ALFRED CARRIÈRE, large white fragrant flowers; a fine pillar rose.

RÊVE D'OR, deep yellow, sometimes coppery.

SOLFA, sulphur, large and very double.

TRIOMPHE DE RENNES, deep lemon, large, full and fine.

WILLIAM ALLEN RICHARDSON is one of the best known popular roses in cultivation. This variety is, owing to its beautiful foliage and profusion of rich orange-coloured flowers, worthy of a position on every rose wall.

CRIMSON RAMBLER (*Polyantha Rose*). This variety is invaluable to the garden designer for clothing a low trellis or pergola quickly, or for breaking up plantations of evergreens with pillars of brilliant colour. Other fine varieties are:—

EUPHROSYNÉ, pink.

BLUSH RAMBLER, pink.

LEUCHTSTERN, white and pink.

THALIA, white.

PSYCHE, pink.

WALTHAM RAMBLER, white and pink.

ELECTRA, yellow.

RUBIN, crimson.

TAUSENDSCHON, pink.

FLOWER OF FAIRFIELD, crimson.

TRIER, white.

THE GARLAND, white.

SINGLE CLIMBING AND PILLAR ROSES AND BRIARS. A most interesting and useful class of roses, which latterly has been overlooked; some of the varieties are charming for training up pillars. The following are the most distinct:—*Rosa alpina*, the parent of the Boursaults, is a strong grower, flowering very early in the Spring; colour rosy red. *Rosa gigantea* (Indian rose), an almost continuous bloomer; several varieties are obtainable, but the pink and crimson forms are the best.

AUSTRIAN BRIARS (Copper and Yellow). For planting along a low trellis or short pillars, these give, when in flower, an effect unlike any other rose. The colour alone is sufficient to attract attention; to this is added a flower of perfect shape, borne in such profusion as to make one mass of colour. Both varieties are perfectly hardy, and have the fragrance of the common sweet briar. These roses flower on the shoots of the preceding year's growth.

PAUL'S 'CARMINE PILLAR AND SINGLE WHITE, are useful for planting against walls or trellis, or for forming rose banks; both are of vigorous growth and very floriferous; Paul's Carmine especially may be considered as one of the most beautiful single roses in cultivation.

LORD PENZANCE'S SWEET BRIARS may be classed amongst the finest introductions to our gardens in recent years. This will be realized when it is stated that to the fragrance of the old sweet briar has been added beauty of form and size and colour of flower; the blooms being as large as those of Austrian briars, while the colours range from white to dark crimson. Briar roses will be found most useful for forming masses of colour on the lawn or for planting rough land or banks; they may also be used for pillars, low fences, or walls, or for training as loose hedges. The best varieties are:—Amy Robsart, Anne of Geierstein, Brenda, Catherine Seyton, Edith Bellenden, Flora McIvor, Jeanie Deans, Julia Mannering, Lady Penzance, Lord Penzance, Lucy Ashton, Lucy Bertram, Meg Merrilies, Minna, and Rose Bradwardine.

HYBRID TEAS AND PERPETUALS FOR CLIMBING. This class is easily distinguished from others by the peculiar and delightful fragrance of the flowers and its vigorous growth. It is invaluable as supplying the various shades of yellow wanting amongst the hybrid perpetuals, and also because the many varieties are so charming for covering terrace walls facing South. A warm aspect with well

CLIMBERS FOR WALLS, PERGOLAS AND TRELLIS.

Roses. drained soil suits them best. The following are some of the best :—

CLIMBING CAPT. CHRISTY, pink,	GLOIRE LYONNAISE, white.
„ CAROLINE TESTOUT, pink.	IRISH ELEGANCE, single orange scarlet.
„ FRAU KARL DRUSCHKI, white.	„ ENGINEER, single scarlet.
„ JULES MARGOTTIN, carmine.	„ GLORY, single pink.
„ KAISERIN A. VICTORIA, white.	REINE MARIE HENRIETTE, red.
„ LA FRANCE, pink.	WALTHAM CLIMBER, red.
„ MRS. W. J. GRANT, pink.	CHESHUNT HYBRID, red.
„ PAPA GONTIER, red.	

WICHURIANA ROSES, a Japanese Rose with many hybrids of which the best are Dorothy Perkins, pink ; white Dorothy Perkins ; Lady Gay, pink ; Hiawatha, single red in clusters, with white eye ; Paul Transon, pink ; Alberic Barbier, yellow ; Jersey Beauty, single cream ; Christian Curle, pale pink ; Shower of Gold, yellow.

A list of bush roses for general garden use is given below under the three headings of Teas, Hybrid Teas and Hybrid Perpetuals.

TEAS.

APRICOT AND COPPER.
DR. GRILL.
MME. FALCOT.
MME. JEAN DUPUY.
META.
SAFRANO.
SOUVENIR DE C. GUILLOT.
SUNSET.
LADY ROBERTS.

PINK.
ANNA OLIVIER.
BRIDESMAID.
CATHERINE MERMET.
HON. E. GIFFORD.

PINK—CONTD.
MME. CUSIN.
MAMAN COCHET.
MURIEL GRAHAM.
MRS. MYLES KENNEDY.

WHITE.
INNOCENTE PIROLA.
NIPHETOS.
WHITE M. COCHET.
THE BRIDE.

YELLOW.
COMTESSE DE NADAILLAC.
FRANCISCA KRUGER.
GLOIRE DE DIJON.

YELLOW—CONTD.
G. NABONNAND.
MME. HOSTE.
MARIE VAN HOUTTE.
MEDEA.
HARRY KIRK.
SOUVENIR DE PIERRE NOTTING.

RED.
PAPA GONTIER.
PRINCESS DE SAGAN.
MRS. ED. MAWLEY.
MRS. LAMBARD.

HYBRID TEAS.

YELLOW AND COPPER.
LE PROGRÈS.
GUSTAVE REGIS.
MME. RAVARY.
MME. PERNET DUCHER.
BETTY.
PEGGY.
EDU MEYER.
RAYON D'OR.
WALTER SPEED.

PINK.
MME. ABEL CHATENAY.

PINK—CONTD.
LADY ASHTOWN.
CAROLINE TESTOUT.
VISCOUNTESS FOLKESTONE.
EARL OF WARWICK.
MRS. W. J. GRANT.
WM. SHEAN.
KILLARNEY.
LA FRANCE.
JOSEPH LOWE.
PHARISAER.
PRINCE DE BULGARIE.

WHITE.
WHITE KILLARNEY.
L'INNOCENCE.
KAISERIN AUGUSTA VICTORIA.
RED.
MARQUIS OF SALISBURY.
RICHMOND.
LIBERTY.
GRUSS AN TEPLITZ.
C. J. GRAHAM.
W. F. BENNETT.
LYON ROSE (Coral red).

HYBRID PERPETUALS.

RED.
ALFRED COLOMB.
A. K. WILLIAMS.
CAPT. HAYWARD.
CHARLES LEFEBVRE.
DUKE OF EDINBURGH.
DUPUY JAMAIN.
FISHER HOLMES.
GENERAL JACQUEMINOT.
MARIE BAUMANN.

RED—CONTD.
SUZANNE MARIE RODOCANACHI.
ULRICH BRUNNER.
VICTOR HUGO.

PINK.
CLIO.
DR. WM. GORDON.
ELLEN DREW.
FRANÇOIS MICHELON.
HER MAJESTY.

PINK—CONTD.
MRS. JOHN LAING.
MRS. R. G. SHARMAN CRAWFORD.

WHITE.
BOULE DE NEIGE.
FRAU KARL DRUSCHKI.
MABEL MORRISON.
MARGARET DICKSON.
MERVEILLE DE LYON.

To the above roses should be added the dwarf polyantha and the China roses, both useful, continuous blooming varieties for bedding.

FIG. 371.—HERBACEOUS BORDERS AT DUNCHURCH LODGE.

CHAPTER XX.

The garden designer works for different ends, and has different objects in view to the collector, or the nurseryman distributor of hardy plants. They collect and display the materials wherewith he composes his harmonies; and he, not disdaining the full choice presented—as an artist prefers a full range of colours wherewith to express his pictorial presentment—prefers that the selective material be located in the reserve garden or home nursery, where he can compare colours and educate and protect himself against mistakes in planting the perennial borders. The list given makes no pretence of including more than a fractional number of the really reliable hardy plants to be found in the nurseryman's excellent lists, but is the result of a long experimental selection, and a series of comparative tests, not only of hardiness, but also adaptability to varying soils and localities, and includes only those which do not require special and difficult cultivation, and are suitable for planting in masses for colour effect.

To avoid disappointment it is necessary to point out first of all the impossibility of obtaining flower borders which, as certain rhapsodical garden writers suggest, can be maintained continuously gay for about ten months of the year. Successive floral displays may be obtained within a restricted area but not continuously in the same border. White sheets of snowdrops in February under the apple trees, carpets of lovely crocus on the lawns in March, and waving banks of daffodils in the coppice in April, are each in their places delightful, but the intervening patches of bare brown earth amidst the colonies of bloom in the border are inevitable, unless great expense and time are lavished upon them. But notwithstanding whatever has been said in praise of the grand style, which must have display both in season and out of season, the underlying purpose of this work is the encouragement of those garden lovers, who desire to see their gardens grow and develop under their hands in homely beauty, and who, without burdening themselves and converting a pleasure into a task, look to them for relaxation and recuperation.

*Successive
floral
displays.*

Such garden lovers as desire the unstudied grace of homely beauty and are content with that which is beautiful in its season, will not mind broad intervening masses of foliage or even patches of soil amidst the large clumps of flower; there is always the pleasant retrospect and forecast of what has been, or is to be, in seed or bud. If it is imperative that there should be no bare interspaces, then the showy though fleeting annuals may be called upon as reserves, or biennials such as *Antirrhinums*, *Pentstemons* or *Canterbury Bells*, may give a more lasting result; but annuals, if duly thinned out and given sufficient room to flower and flourish, fulfil the purpose. Some of these

HARDY FLOWERING PERENNIALS FOR BEDS, BORDERS, &c.

such as the rose mallow so effective in town gardens, and the annual chrysanthemums and larkspurs, might without hesitation be found places in every herbaceous border.

The border which is gay in April or May with daffodils, tulips, polyanthus, and Brompton stocks, iberis and aubretias, may be brightly hued again in July and early August with phlox, hollyhocks, speedwells, delphiniums, and the hosts of other plants in flower at this season ; whilst the gardener who looked ahead would also ensure fine colour effects in October and November from chrysanthemums, Michaelmas daisies and pyrethrums, provided always that the borders are ample and spacious.

All the perennials enumerated might be planted at any time from March to September, provided they are obtained from the nurseries in pots ; or they may be planted direct from the open ground from March to the middle of May, and at any time during September.

No list of hardy perennials would be complete without a selection from the large families of bulbous plants which make gay our gardens in Spring and early Summer. I have therefore enumerated the most effective daffodils, wood hyacinths, and anemones.

*Hardy
Perennials.*

ACANTHUS MOLLIS. A plant with fine, much serrated foliage, and flower spikes which often attain a height of 3 to 4 feet. An excellent plant for the wild garden.

ACHILLEA, Snowball. A fine border plant, bearing numerous heads of pure white flowers, useful for cutting ; height 2 feet. A. Clavennæ and A. tomentosa are dwarf varieties useful for walls or the rock garden.

ACONITUM, or Monks Hood. An old-fashioned, strong-growing perennial. The finest are A. napellus ; A. album ; A. versicolor, blue and white ; and A. autumnale, a fine purple, flowers late into September ; it grows 3 to 4 feet high.

ADONIS VERNALIS. This variety bears large bright yellow buttercup-like flowers early in Spring ; it has finely cut leaves, height 1 foot.

ALPINE PHLOX. A beautiful class of dwarf easily grown plants, suitable for growing over rocks. To ensure success, plant in a good open soil. Amongst the best are P. Vivid, fine bright pink ; P. Nelsoni, good clear white ; P. atropurpurea, a rich crimson, flowering in the early Spring ; P. The Bride, white, and P. G. F. Wilson, a pretty lilac.

ALSTROMERIA. A splendid class of plants for border decoration. A. revoluta is a good orange colour, and A. aurea, pale yellow ; both are very useful for cutting and make a fine show for bed or border.

ALYSSUM. The most useful for rockwork are A. alpestre, A. montanum, A. saxatile compactum, A. saxatile plenum, a double variety, and A. citrinum ; they are all dwarf-growing varieties with bright yellow-coloured flowers, and all do well on walls or in a dry sunny position.

ANEMONE, the wind flower, provides a large and charming class of plants of easy culture. The following should have a place in the garden :—Anemone apennina, deep blue, and of dwarf and very free habit ; A. blanda, a fine deep blue ; A. nemorosa Robinsoniana, a pretty pale blue ; A. ranunculoides, a bright yellow, makes a fine contrast when seen growing amongst the blues, and has finely-cut foliage ; A. nemorosa alba plena, the double white wood Anemone, one of the finest and a free bloomer ; A. fulgens, the scarlet wind flower, bears pretty scarlet flowers about an inch and a half across, it is of easy growth and most effective, and grows about fifteen inches high ; A. japonica alba, a well known border plant, growing 3 feet high, with numerous fine white flowers, it should be in every garden ; A. japonica, has growth and habit similar to the above, but with rose-coloured flowers.

ANTHEMIS BIEBERSTEINI, a very useful plant for walls, being a strong grower, and forming good tufts of silvery foliage.

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ANTHERICUM LILIAGO, or St. Bernard's Lily, a good border plant of easy culture, bearing fine spikes of pure white flowers; about 2 feet high. *A. liliastrum major* is also a fine border plant with white flowers; both bloom during May and June. *Hardy perennials.*

ANTHYLLIS ATRORUBENS. A fine and most useful plant for a dry bank; it bears heads of dark crimson flowers somewhat resembling a large clover.

AQUILEGIA. A useful class of plants, better known as columbines. They vary in colour and include whites, yellows, blues and purples. Amongst the best and most useful are *A. chrysantha*, yellow; *A. vulgaris alba*, white; *A. glandulosa*, a fine blue-and-white. These varieties are perfectly hardy, and do well in almost any position; height 2 feet.

ARMERIA PLANTAGINEA ROSEA, Sea Pink, is a very effective plant of dwarf habit, with fine heads of rose-coloured flowers; it grows 12 inches high, and blooms from May to the end of July. *A. p. alba* is a white-flowered variety. *A. cephalotes grandiflora*, bears large deep red heads of flowers: height 2 feet.

ASPHODELUS RAMOSUS bears a fine bold spike of white flowers; it thrives in almost any kind of soil, and should be in every border; height 2 feet.

ASTER OR MICHAELMAS DAISY. These are indispensable as they continue to bloom until the frost comes and blackens them. There are a large number of varieties of which the best are: *A. acris*, 3—4 ft., pale blue and early; *A. cordifolius elegans*, 2 ft., small flower, blue; *A. Elsie Perry*, pink, 3 ft.; *A. ericoides*, small white flower, 3 ft.; *A. Hon. E. Gibbs*, small lavender flower, 3 ft.; *A. Lady Trevelyan*, white, 4—5 ft.; *A. Mrs. Burrows*, mauve, 4 ft.; *A. Novi-Belgii R. Parker*, large lavender, 4—5 ft., one of the best; *A. W. Marshall*, blue, 4 ft.; *A. Miss Southall*, mauve, 4 ft.; *A. Beauty of Colwall*, lilac blue, double, 4 ft.; *A. Lil Far-dell*, pink, 4 ft.

ASTILBE, see **SPIRÆA**.

AUBRETIA. There are many varieties, from which may be selected *A. Leichtlini*, a fine clear rose; *A. purpurea*; *A. Firefly*, deep red; *A. Monthemii*, large pale rose; and *Dr. Mules*, rich purple. All do well on a dry bank in ordinary soil. For rockwork or planting on rough dwarf walls in conjunction with *Alyssums* and *White Rock*, they are lovely.

BOCCONIA CORDATA. An effective foliage plant of strong growth, bearing buff-coloured spikes of flowers. Requires ample space, and is admirable for massing near water; height 5 to 6 feet.

CAMPANULA, of which there are many varieties most serviceable as border and wall plants; the best are *C. persicifolia alba grandiflora* and *P. humosa* with semi-double blue flowers; *C. glomerata dahurica*, is purple and grows 18 inches high. These varieties flower about July, lasting to the latter part of August. *C. macrantha* has a good effect when planted in woods, etc., throwing up its tall spikes of blue flowers, reaching

FIG. 372.—DELPHINIUMS.

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- a height of five feet, it is of very easy growth and succeeds almost everywhere. *C. marginata*, a large white margined with blue, and *Moerheimi*, a semi-double white are also excellent. Amongst the dwarf *Campanulas* the following are all good free growers :—*C. G. F. Wilson*, a fine shade of purple, and a very free bloomer ; *C. carpatica alba*, white ; *C. turbinata*, light blue ; and *C. t. White Star* ; *C. bavarica*, blue, an exceptionally free grower ; and *C. pusilla* and *C. p. alba*, *C. pulla*, deep purple, *C. pulloides* and *C. Hostii alba*, white, should also find a place.
- CENTAUREA**, or Knapweed. Amongst the finest of perennials is *C. montana rubra*, with numerous large feathery rose-coloured flowers, 2 feet high ; *C. ruthenica*, a pale yellow variety with fine foliage, and *C. macrocephala*, a fine plant growing to a height of 5 feet, with large handsome bright yellow flowers ; it is of rather coarse growth, but looks well at the back of a border, where it can have plenty of room. These varieties are particularly useful for cutting for house and table decoration.
- CHEIRANTHUS ALPINUS**, or Alpine Wallflower, is an exceedingly pretty plant, bearing a profusion of bright yellow flowers in May and June ; height 6 inches.
- CHRYSANTHEMUM MAXIMUM**. *C. Duchess of Abercorn*, *C. Queen Alexandra* and *C. imbricatum* are all showy, large-flowering varieties of the common field daisy.
- CIMICIFUGA RACEMOSA** has foliage resembling the *Spiræas* and bears feathery spikes of white flowers ; height 3 feet.
- CISTUS**, Rock Rose, is effective when planted on dry banks or rockeries. There are several free-flowering varieties of various shades of colour. A few of the best are *C. florentinus*, a large white-flowering variety, very free ; *C. algarvensis*, a small-leaved variety with bright yellow flowers and a dark ring round the centre of the flower, and *C. formosus*, yellow.
- COREOPSIS GRANDIFLORA**. A splendid border plant with numerous large yellow flowers, very useful for cutting purposes. It is certainly the best variety in cultivation. It is of very free habit and blooms all the summer ; height 2½ feet.
- CRAMBE CORDIFOLIA**, a handsome plant bearing large spikes of white flowers in the same manner as *Gypsophila*. It should be planted in masses and given plenty of space, as it grows 6 feet high.
- DELPHINIUM**, or perennial larkspur, of which there are many varieties of all shades of white, blue and purple, make a splendid display and need very little attention, remaining in flower for about two months ; height 3 to 6 feet. No border of hardy perennials can be complete without them.
- DIANTHUS**, the pink. A large family, very useful for walls and rock gardens ; a few of the best are *D. alpinus*, with large deep rose-coloured flowers ; *D. neglectus*, a deep rose ; *D. integer*, pure white deeply fringed, and several other varieties too numerous to mention. *D. barbatus* is the Sweet William.
- DICTAMNUS FRAXINELLA**. A well-known plant that should have a place in every border ; it bears spikes of flowers of a pale rosy pink with rather a curious scent ; is of free habit and likes good rich soil. 3 feet.
- DORONICUM EXCELSUM**, or Leopard's Bane, is a plant too well known to need much description, colour bright yellow, and flowers in early Spring and far into the Summer. It should be in every garden ; height 2½ to 3 feet.
- EPIMEDIUM PINNATUM**, is a very excellent dwarf yellow-flowering plant, the foliage of which is also very pretty and useful for cutting ; it will grow in shade, flowering about May.
- ERIGERON SPECIOSUS SUPERBUS** and *E. s. GRANDIFLORUS*, bear clusters of large mauve flowers from June to September ; height from 2 to 3 feet. An excellent border plant.
- ERYNGIUM ALPINUM**, or Sea Holly, is a well-known plant, and one which should be included in every collection ; it is a strong grower, succeeding in any good garden soil, and flowering from June to September ; height 3 feet.

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FUNKIA, of which there are many varieties, make fine foliage plants; two of the best are *F. Fortunei* *coerulea* and *F. undulata marginata*, the former being of a fine glaucous colour, and the latter beautifully margined with white. These will succeed in partial shade. *Hardy perennials.*

GALEGA OFFICINALIS ALBA, or Goat's Rue, an excellent plant for the border, bearing beautiful white pea-shaped flowers, which last well when cut. It is about 4 to 5 feet in height, and does well in any soil.

GEUM COCCINEUM PLENUM, and *G. HELDRIECHII* are fine border plants with rich orange-scarlet flowers; 2 feet in height: one of the most effective plants for the herbaceous border.

GILLENIA TRIFOLIATA, a very graceful and pretty plant bearing slender white flowers; it is useful for moist situations, and should be planted in large patches.

GYPSOPHILA PANICULATA, although generally grown for cutting, is a white mist-like flower very useful when used in contrast with strong colours; height 1½ feet.

HELENIUM. This genus bears masses of beautiful bright yellow flowers, which last well when cut. Amongst the most useful varieties are *H. pumilum*, about 2 feet high; *H. grandiflorum*, 3 to 4 feet; and *H. autumnale*, which flowers more in clusters and lasts late into Autumn, about 6 to 7 feet in height.

HELIANTHEMUM, or Rock Rose. No rock or wall garden is complete without a selection of these plants, they are perfectly hardy, and make a fine show. They vary in colour from white to deep red. The following are good: *H. venustum*, fine red; *H. tomentosum*, yellow; *H. The Pearl*, white; *H. Mrs. Sydney Smith*, terra-cotta; *H. Mrs. Earle*, double red; *H. roseum*, pink. They thrive well in a dry position in ordinary soil.

HELIANTHUS, make a fine show towards Autumn, when flowers are getting scarce. The most distinguished of the several kinds are *H. doricoides*, a very free-flowering single, and *H. Soleil d'Or*, a double variety, with fine quilled flowers. *H. Miss Mellish* is a fine form. These are very strong-growing plants and should be planted sparingly to avoid overcrowding more delicate subjects.

HELLEBORUS, or Christmas Rose. There are a great many varieties of this genus, but *H. niger major* is one of the freest flowering sorts, bearing fine pure white blossoms. It is very useful for cutting purposes, and does well in a rather shady position.

HEMEROCALLIS, or Day Lily. There are several varieties of this genus. The showiest are *H. disticha plena*, flowers a deep orange, and fine border plant; *H. Thunbergi*, pale yellow blooms; and *H. flava*, with lemon-coloured flowers, bell-shaped and very numerous.

HEUCHERA SANGUINEA bears numerous slender spikes of pretty scarlet flowers, which when cut are very useful for decorative purposes, looking exceptionally well by artificial light. It is of easy growth; height 2½ feet. *H. s. grandiflora* is a stronger grower.

FIG. 373.—GIANT PARSNIP UNDER TREES. (See next page).

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HERACLEUM GIGANTEUM, or the Giant Parsnip, is a valuable perennial for planting on the outskirts of the wild garden, or under the drip of trees, as in illustration No. 373. It is best raised from seed sown in March.

HOLLYHOCK. No garden can be said to be complete without Hollyhocks ; they are indeed indispensable, showing to great advantage in almost any position, though best with a background of wall or hedge. They should be found in every border, especially those on the terrace. Single varieties are as effective as the choicer and more expensive double ones.

IBERIS, or Perennial Candytuft. *C. Corraefolia* is one of the finest. It has fine large pure white flowers, and comes into bloom when the commoner varieties are over. This is an excellent plant for growing in the rock garden or on the tops of walls.

INULA GLANDULOSA, a useful plant, 2 to 2½ feet in height ; bears fine yellow flowers in June and July.

IRIS. Almost everyone who has seen a swamp knows the broad, succulent green blades of the flag, or yellow-flowered iris, and the tall stem or sheath from which they spring. The *Iris Kämpferi*, the sacred flower of Japan, can be similarly recognized, but the flowers are of various shades of white, azure and dark blue, and dark blue and blue purple, attaining under good cultivation a diameter of from 6 to 12 inches. If allowed a fair quantity of bog earth or fatty loam, to retain moisture, they succeed well in the border ; they are also amongst the most valuable plants for the margins of ornamental waters. *I. sibirica* is another effective plant for moist places, having grass-like foliage and numerous pale blue flowers streaked with white. The well-known flag *Iris*, *I. germanica*, is another section, which may be planted in almost any soil or situation. All the colours found amongst other *Iris* are to be found in this class. In the Autumn, batches of Spanish and English *Iris*, both of which are equally beautiful, should be planted in masses for flowering the following June.

LAVENDER. See Flowering Shrubs.

LEUCOJUM VERNUM (Spring Snowflake), has pretty white flowers dotted with green, resembling snowdrops. *L. æstivum* is similar to *L. vernum*, but taller in habit. In foliage and flower these varieties are effective throughout the Summer months ; height 18 inches.

LILIUM. There are many varieties of lilies which are well worth growing, and which make a fine show in the border. The following are all good : *L. candidum*, the old garden or Madonna Lily, which has pure white flowers, should find a place in every border where the soil is moderately light. *L. croceum*, or Orange Lily, is a fine old lily, bearing six to eight orange-coloured flowers in clusters, on stems varying from 4 to 5 feet in height. *L. chalcedonicum*, Turk's Cap, has rich scarlet flowers in clusters of four to six on one stem ; it is of easy culture, and is one of the finest varieties. There are very few hardy flowers which are so effective. *L. Humboldtii* is a tall-growing variety, bearing numerous flowers of a pretty golden yellow with dark spots, and is of easy culture. *L. tigrinum splendens*, the Tiger Lily, is one of the most useful for borders, a free flowerer, the colour being orange scarlet with numerous black spots. *L. Martagon* has dark purple flowers, borne on stems 4 to 5 feet in height, and is of good habit. *L. M. album*, a very fine white variety of the preceding, of handsome appearance, should be in every border. *L. testaceum* is a tall-growing variety with clusters of salmon-yellow coloured flowers, very pretty, and easy to cultivate. *L. pardalinum* and *L. speciosum* should also be grown.

LITHOSPERMUM PROSTRATUM, for rockwork, is as fine a plant as could be wished for. In colour it rivals the beautiful *Gentiana verna*, but is easier to grow, and thrives best

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in a sunny position ; grown in a good sand loam mixed with a little sandstone, if procurable.

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LUPINUS, Lupine. The white and blue varieties make a fine show, growing to a height of about 3 feet ; all are very free-flowering.

LYCHNIS. Amongst this class of plants I should recommend *L. chalcedonica*, which bears handsome scarlet flowers from July to the beginning of September ; height 3 feet ; and *L. viscaria splendens plena*, a dwarf variety, very profuse flowering, of a rosy pink, flowering in the months of June and July.

LYTHRUM ROSEUM, a fine showy plant, very free in habit ; the flower spikes are of a deep rose, and often attain to a height of 4 to 5 feet. It is also a very useful plant for marshy ground, or by the margins of lakes or streams.

MALVA MOSCHATA ALBA. An effective border plant with clusters of pretty white flowers. It will grow in almost any soil ; height $2\frac{1}{2}$ to 3 feet.

MERTENSIA SIBIRICA, a pretty border plant with lovely pale blue pendant flowers ; height $1\frac{1}{2}$ feet.

MONARDA DIDYMA, or BERGAMOT, a showy plant, with bright red flowers, growing about $2\frac{1}{2}$ feet high ; blooms in the latter part of July, and lasts almost to the end of September.

MONTBRETIA. A most useful class of plants with ornamental grass-like foliage. The flower spikes, in many various shades of colour, resemble gladioli, but are on a much smaller scale. *M. crocosmæflora*, with orange-scarlet flowers, is one of the best for the border, and *M. elegans*,

a pretty shaded yellow, and *M. Fairy Star*, a rich orange with yellow centre, are also very effective. The Montbretias grow and succeed almost anywhere, but prefer a fairly light soil. There are now quite a number of hybrid varieties reared in France, some of which are very charming.

NARCISSUS. Amongst the large-flowered or trumpet section, some of the best are *N. Empress*, a beautiful variety, with rich golden yellow trumpet and large white perianth ; *N. Emperor*, a fine effective rich yellow ; *N. Golden Spur*, a very showy variety, of a rich golden yellow, the trumpet being broad and reflexed ; *N. Johnstoni* (Queen of Spain), a very pretty flowered variety with fine sulphur-coloured flowers. *N. maximus*, one of the finest, having rich golden yellow flowers, the perianth being finely twisted ; *N. Telamonius plenus* is the old-fashioned double daffodil, and still one of the most useful. A few good medium flowered varieties are *N. Barri conspicuus*, which is one of the finest of this class, having a broad yellow perianth

FIG. 374.—LAVENDER UNDER THE CASEMENT.

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edged with deep orange; very showy; *N. incomparabilis giganteus*, Sir Watkin, a very fine variety with fine sulphur perianth; *N. incomparabilis*, Cynosure, has a large perianth, sulphury white; *N. Leedsi*, Mrs. Langtry, a pretty variety with broad white perianth and a large white cup; *N. C. J. Backhouse*, a distinct variety with broad white perianth and yellow cup; *N. triandrus albus*, a very small flower resembling the cyclamen in shape and creamy white in colour, very pretty; *N. Orange Phoenix*, a showy variety with large white flowers streaked with orange, commonly known as "eggs and bacon." Amongst the short cup varieties may be named *N. biflorus*, a free-flowering variety, bearing two flowers on one stalk, of a creamy white colour; *N. poeticus ornatus*, a fine free-flowering variety, bearing flowers with a broad perianth and rich orange cup; *N. p. plenus* is a double white variety, very sweet-scented and useful for cutting, but rather a shy bloomer. These do not by any means exhaust the many varieties of *Narcissi*, but will be found to contain a nice selection which might form the nucleus for a larger collection.

ÆNOTHERA FRASERI, *Æ. macrocarpa*, and *Æ. Youngi* are all very useful yellow-flowered border plants. *Ænothera biennis* is the Evening Primrose.

ORNITHOGALUM NUTANS is well adapted to the wild garden; it flourishes and increases rapidly. The flowers are of a whitish green, and look very pretty in a cluster. *O. umbellatum*, Star of Bethlehem, comparatively unknown under its formidable botanical name, has clusters of five or six pure white flowers on a short stem. The bulbs should be planted in the Autumn and when once established they should not be disturbed.

OROBUS VERNUS, one of the Vetches, makes a pretty border plant with purple flowers, blooming in early Spring. There are several other varieties, but this is one of the best; height $2\frac{1}{2}$ feet.

PAPAVER ORIENTALIS, or Oriental Poppies, make a fine show, and may be planted in almost any position where bright masses of colour are required. Colour, flaming scarlet, height $2\frac{1}{2}$ feet. There are now many varieties of excellent pink shades.

PÆONIA, *Pæony*. No garden would be complete without some of these; they are easy of culture and make a brilliant show. As there are a great number of varieties it is a difficult matter to decide which are the best, but the following will be found to be good and reliable, merits which cannot be claimed for a number of hybrids that are advertised: *Felix Crousse*, carmine; *Lady Anne*, silver pink; *Lord Derby*, purple crimson, and *Marie Lemoine*, a pure double white.

PHLOX. An indispensable class of plants of various colours and easy culture, no border being complete without them. Amongst the early flowering varieties I should recommend *Purple Emperor*, *Lady Napier*, *A. M'Kinnon* and *Snowdon*. For a selection of late-flowering varieties: White—*Delight*, *Freifraulein von Lassburg*, *Pyramide*, *Tapis blanc*, *Mrs. Jenkins*, *Frau. Ant. Buchner*. Mauve—*Charles Flahault*, *E. Danzanvilliers*, *A. Mercie*. Blue and purple—*Eclaireur*, *Iris*, *Le Mahdi*. Pink—*General van Heutz*, *Molière*, *Neptune*, *Wm. Robinson*, *Selma*, *Elizabeth Campbell*. Red—*Coquelicot*, *Embrasement*, *Etna*, *Jocelyn*, *Dr. Königschoffer*.

PHYSALIS FRANCHETI, a variety of Winter Cherry; it makes a fine show in Autumn, having a bright crimson globe-shaped pod in which the fruit is enclosed; it is very useful for cutting, lasting for many weeks; height 2 feet.

PINKS. Of all the beautiful edging plants none are so good as the white pink, which even when not in flower, forms a good silvery margin. The two best varieties are *Mrs. Sinkins* and *Her Majesty*.

POLEMONIUM, or Jacob's Ladder, is a well-known old-fashioned plant, which should be in every border. *P. Richardsoni* is a very pretty pale blue, and flowers for fully three months. The white form, *P. Richardsoni album*, is as free-flowering as the blue.

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- POLYGONATUM MULTIFLORUM**, more familiar under the name of Solomon's Seal. The white bell-shaped flowers, suspended from beneath the long, shapely, symmetrically-divided frond-leaves, or fronds, are effective in the border or in the wild garden. This is a good plant for shade. *Hardy perennials.*
- POLYGONUM CUSPIDATUM**. A fine-looking plant for places where it can have plenty of room for development, often growing to a height of 8 feet, with pretty white flowers. It thrives under trees, but should not be planted where it will be likely to smother small plants, as it propagates rapidly, and soon covers a large area. *P. sachalinense* is another variety worth growing.
- POTENTILLA**. There is a large family of these. The three varieties which are the most distinct are *P. californica*, bright double yellow; *P. variabilis*, double orange and yellow; and *P. purpurea plena*. These will flower well from July to the latter part of August; height $1\frac{1}{2}$ to 2 feet.
- PRIMROSE**. Our beloved hedgerow companion, and the probable progenitor of all the many different varieties, has but to be mentioned to ensure it a hearty welcome to our wild gardens. The double white, double yellow, double mauve, and single varieties all do well in a nice cool, shady place, and will make quite a blaze of colour.
- PULMONARIA AZUREA** (Lungwort), a fine dwarf blue, much-flowering variety, which is particularly useful for moist positions.
- PYRETHRUM**. This will do well in almost any garden. There are now a great many varieties, both double and single, both of which forms are very useful for cutting purposes as well as for border decoration. They have a great range in colour, and succeed in almost any soil or situation.
- RANUNCULUS ACONITIFOLIUS PLENUS**, or Fair Maids of France, does well either for border or bog garden, and bears clusters of double white flowers, which are also useful for cutting.
- RHEUM**. The ornamental character of the foliage of these plants should be sufficient commendation to secure them a place in any garden. One of the best is *R. sanguineum*, the foliage of which, when young, is a beautiful red, the flower spike being of the same colour, and often attains a height of ten feet.
- RUDBECKIA NEWMANI**, Newman's dwarf sunflower, colour bright yellow with a dark centre, flowering late into Autumn; height, 18 inches. *R. laciniata plena*, or Golden Glow, should also have a place in every garden; it resembles a double sunflower, but has a much finer substance; grows 5 to 6 feet high.
- SAPONARIA SPLENDIDISSIMA**. This plant is a great acquisition for wall or rock garden; forming carpets of beautiful rose-coloured flowers.
- SAXIFRAGA**, an extensive class of Alpines of acknowledged beauty, carpeting large spaces effectively. Amongst the best are *S. Burseriana*, which flowers very early and forms nice silvery tufts with pretty pure white flowers borne singly on stalks about 2 inches long, and has a very pleasing effect; *S. luteo-purpurea*, or Frederick Auguste, forms beautiful green tufts with pale yellow flowers; *S. Cochlearis*, a crested variety forming nice tufts, the flowers of which are a beautiful white; *S. Cotyledon*, a very free variety of easy culture, forming silvery rosettes, the flower spikes often attaining a height of 18 inches; of a spreading nature and a beautiful white, and will succeed in almost any soil. *S. McNabiana longifolia*, *S. Aizoon lantoscana*, and *S. Cotyledon pyramidalis* are also good. Some of the mossy Saxifragas are very useful for rather shaded positions, making fine green carpets. *S. Wallacei*, a beautiful form, having large pure white flowers; *S. atropurpurea*, with pretty rose-coloured flowers, and *S. hypnoides*, will be found very useful varieties. *S. Guildford Seedling*, red; *S. decipiens grandiflora*, red; *S. barthoniensis*, crimson, are also good mossy varieties.

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- SCILLA. *S. campanulata* and *S. campanulata alba* are both effective varieties for the border, throwing up large masses of flowers year by year. As for cultivation, they simply require planting and leaving alone. They are very useful for partial shade.
- SEDUM. These well-known and most desirable rock plants will grow in almost any soil or position. A few of the best are *S. elegans*, forming spiral tufts of foliage with bright yellow flowers; *S. sexangulare*, a creeping variety (resembling the common stonecrop), forming a carpet composed of a dense mass of verdant green stars, the foliage of which is of a crimson tint; and *S. album*, which is well-known.
- SEMPERVIVUM. Lovers of quaint old cottages will not fail to recognise these plants, more familiarly known as Houseleek; the scanty sustenance they obtain in the crevices of the rough-cast, or in the rugged projections of stone tabling, shows the ease with which they can be cultivated. *S. arachnoideum* forms pretty rosettes, covered at the top with a white down resembling a spider-web, giving it a fine appearance. *S. triste* forms large rosettes of deep purple, and is one of the finest varieties. It is also a useful plant for edging purposes. *S. californicum*, about the largest variety of all, forms rosettes of a glaucous colour, the tips of the leaves being a dull brown.
- SILENE ACAULIS is one of the best plants for a wall garden; it thrives in dry positions, and forms dense cushions of green foliage, with pink flowers.
- SOLIDAGO, or golden rod, of a coarse habit, is thoroughly well suited to the wild garden; where its tall spikes of bright yellow show to advantage.
- SPIRÆA. Amongst these *S. Aruncus plumosus* takes the lead for border work, it attains a height of 4 to 5 feet, and has a flower spike of a fine creamy white. *S. A. astilboides* is also very useful, being of a much dwarfer habit; the flowers last well when cut. *S. palmata*, pink, and *S. venusta*, rose, are also very showy. *S. Davidi*, is a recent introduction, producing noble spikes of rose-purple flowers; 4 to 5 feet in height; it is specially suited for planting near ornamental waters.
- SYMPHYTUM CAUCASICUM, or borage plant, which makes a showy addition to the wild garden, is a free flowerer, with fine bright blue flowers early in the year.
- TELEKIA SPECIOSA, is a tall-growing, glaucous-leaved plant, with large spikes of yellow flowers; very suitable for rough places.
- THALICTRUM AQUILEGIFOLIUM, a useful border plant, with foliage resembling the aquilegia; it grows about 4 feet high, with fine feathery heads of white flowers. *T. purpureum*, purple, is also a very fine showy perennial with pretty foliage and white heads of flowers. *T. flavum* is a fine tall-growing yellow variety, with glaucous foliage.
- TRILLIUM GRANDIFLORUM, or American wood lily, when once established, makes a charming addition to the border. It has a dwarf habit, bears pure white lily-like flowers, and likes rather a moist, shady position. The habit of growth and general character of the plant is very similar to the Christmas rose.
- TROLLIUS (Orange Globe) is a splendid border plant with large globular orange flowers.
- TULIP. Having regard to the extreme beauty and comparative hardiness of florists' Tulips, it is difficult to understand the way they have been neglected. These are not to be confounded with the varieties which are imported so largely from Holland; it is the old garden tulip which is here referred to. All the varieties may be used to great advantage in the borders; there are many forms, with a wide range of colours, and can now be obtained from any nurseryman at moderate prices. They may be allowed to remain undisturbed in the borders from year to year.
- VERBASCUM OLYMPICUM, is conspicuous for its large white rosettes of foliage, and clear, pretty, yellow spike, varying from 6 to 12 feet high.
- VERATRUM ALBUM and *V. NIGRUM* are fine foliaged plants, excellent for rock or wall gardens or borders.

HARDY FLOWERING PERENNIALS FOR BEDS, BORDERS, &c.

VERONICA SAXATILIS and V. SAXATILIS ALBA, two very useful plants of a prostrate habit, and very showy, which are perfectly hardy, and do well in good sandy loam. V. rupestris is another prostrate variety with fine bright blue flowers. V. epacrioides, lycopoidoides, and V. sabeonioides are New Zealand varieties which are splendid for the rock or wall garden. V. amethystina is a showy plant with spikes of bright blue flowers, eighteen inches high, flowering in June and July. Another good border variety is V. longifolia subsessilis, which has large spikes of deep blue flowers, and grows to two feet high.

AQUATIC AND SUB-AQUATIC PLANTS FOR PLANTING IN PONDS AND BY THE MARGINS OF STREAMS.

Much more attention is now paid to this class of plants than was formerly the case, water and bog gardens forming a part of many garden schemes. This is not to be wondered at since Marliac has reared such superb water lilies, and Japan has supplied us with such very charming varieties of their sacred lilies (*Iris Kämpferi*). Apart from these, however, there is a sufficient number of beautiful aquatics and bog plants to make a water garden desirable, whilst in many situations their use allows of spaces of ground which are uninteresting, and even objectionable, being converted into spots full of interest. *Aquatic plants.*

ACORUS CALAMUS, or sweet-scented rush, the foliage of which resembles an Iris and is evergreen, and when broken emits a sweet scent; it does well in shallow water or in very wet ground on the margins of ponds, and is perfectly hardy.

ALISMA NATANS is a pretty little white-flowering subject for shallow water. A. plantago has handsome spikes of pale rose-coloured flowers, 2 to 3 feet high.

APONOGETON DISTACHYON, or Cape Pond Weed, often called Water Hawthorn from its beautiful fragrance, is one of the easiest water plants to cultivate. It bears numberless curiously shaped white flowers, relieved on the inside with small black dots, is fairly hardy, and very free in habit.

ASPHODELUS LUTEUS, a graceful plant for a moist position, has grass-like foliage and fine large spikes of bright yellow flowers, attaining a height of 3 feet.

BUTOMUS UMBELLATUS has reed-like foliage, with pretty umbels of white shaded pink flowers, and thrives well in shallow water.

CALLA PALUSTRIS (Bog Arum) is very useful for planting in shallow water, and bears calla-like flowers on green spathes.

CALTHA PALUSTRIS MONSTROSA PLENA, a double variety of the marsh marigold, bears full, large, rich yellow flowers, making a very beautiful margin to still water.

CYPRIPEDIUM SPECTABILE (the Moccasin flower), from N. America, the finest hardy variety known, succeeds in a well-drained moist position, and likes peat. The flower stems vary in length from 6 to 12 inches, with fine large white and shaded pink flowers. C. calceolus, the British form, though now very scarce in the country, has a flower of a fine shade of yellow, with long dark-brown petals. It does well in a good heavy soil with limestone, and likes a rather shaded place.

CYPERUS LONGUS is a fine foliage plant for marshy places.

ELYMUS GLAUCUS is a very ornamental grass, and when planted in tufts makes a happy break to the margin of a stream, especially when the surroundings have a tendency to appear too tangled or disordered. Another beautiful grass is Carex pendula, a fine variety for growing in marshy places or under trees.

FERNS. No bog garden is complete without a few ferns. The well-known Osmunda regalis, or Royal fern, is by general consent the finest; but other good varieties are Onoclea sensibilis, an American fern of easy growth which likes a shaded peaty position, and Struthiopteris germanica, or ostrich feather fern, a fine large-growing

HARDY FLOWERING PERENNIALS FOR BEDS, BORDERS, &c.

Aquatic plants.

variety, which is well worthy of a place ; it is of very free habit.

GUNNERA SCABRA has large handsome foliage, with leaves sometimes 3 to 4 feet across, and requires plenty of space and a position near, but not in, water.

HOTTONIA PALUSTRIS, or water violet, has foliage resembling a fern, and throws up a fine spike of flower, white shaded with pink, and about 6 to 12 inches in height, growing in about 2 feet of water.

LYSIMACHIA CLETHROIDES, with spikes of pretty white flowers, is an excellent plant for marshy places ; height $2\frac{1}{2}$ feet.

LYTHRUM ROSEUM. A very showy plant with spikes of rich rosy crimson, which does well in marshy ground ; height 3 feet.

MARSH MARIGOLD, both double and single varieties, are most useful for margins of water.

MENYANTHES TRIFOLIATA, or Buckbean, is a very free-growing plant with fine sweet white flowers, useful for shallow water.

NYMPHÆA (Water Lily). A few of the hardiest are *N. Marliacea chromatella*, a beautiful yellow with finely marbled foliage ; *N. Robinsoni*, a large-flowering variety with rich vermilion-coloured flowers of very free habit ; and *N. alba rosea*, a fine variety, the flowers rose coloured, equal in size to the ordinary white water lily. No sheet of water should be without *N. alba*, the freest-flowering variety of all, the abundant quantity of its bloom making quite a picture. *N. Nuphar lutea*, the common yellow variety, is one that could not easily be dispensed with, the foliage in itself being a recommendation. Other beautiful varieties are *N. Gladstoniana*, the largest, white ; *N. Marliacea carnea*, flesh-coloured ; *N. Laydekeri fulgens*, violet red ; and *N. Wm. Falconer*, a rich deep crimson with bright golden centre.

PARNASSIA PALUSTRIS, or Grass of Parnassus. A pretty little plant for bog gardens, with dark-green foliage and well-formed white flowers, and very easy to grow.

PRIMULA ROSEA, a plant easy to grow, with beautiful rosy pink flowers, which are numerous and last for weeks. Planted between the crevices of rock near the water's edge, it soon makes a fine carpet of colour. *P. sikkimensis* is another beautiful variety for a moist position, throwing up an abundance of fine primrose yellow flowers on stems from 6 to 12 inches long, and prefers a rather shaded position. *P. japonica*, with its rich purple flowers, should also be included.

RANUNCULUS AQUATILIS has fine feathery foliage which floats on the top of the water, interspersed with numerous pure white flowers. It is often found growing in ponds, and requires no planting ; if thrown on the water it will establish itself. *R. lingua* is a fine plant for the edges of ponds ; in shallow water it grows about 2 feet high, and bears showy bright yellow flowers. *R. lingua grandiflora* is the Giant Marsh buttercup.

SAGITTARIA MONSTROSA fl. pl. is most effective for use in the margin of lakes or shallow water. It has dark green leaves and fine double white flowers, varying in height from 12 to 18 inches.

SAXIFRAGA PELTATA, a large handsome foliage plant for the margins of lakes and streams.

TRITOMA, Red Hot Poker, makes a fine show in the border. It is well known, and with fine spikes of various shades of red, and is good for planting for effect on the higher ground above the lakes.

TROLLIUS, or Globe Flower, is very useful either for the border or bog garden, the flowers vary from pale yellow to deep orange, and are very free blooming.

TYPHA LATIFOLIA, the Common Bulrush, needs no description, it nevertheless is a graceful ornament in shallow water or boggy ground. *T. minima* is a miniature variety, not more than 18 inches high.

FIG. 376.—TRELLIS SCREEN AND ROSE ARCHES PROPOSED FOR HVIDØRE FOR H.M. QUEEN ALEXANDRA.

To make a representative selection of designs from the large number of plans which the practitioner prepares during the course of his career is a difficult matter. This arises principally from the fact that many plans which would be instructive and interesting to those acquainted with the site and local conditions, are more or less meaningless to persons who are not. This is particularly true in regard to designs prepared for undulating sites; the various bends and turns, rendered necessary by the contours of the ground, could only adequately be explained by a larger number of sketches or photographs than it is practicable to introduce. There are other instances in which, from a variety of causes, it is impossible to illustrate the design adequately. The gardens at Graythwaite Hall are a case in point. Those who know the difficulties encountered in laying out such gardens would measure their success by the amount of improvement actually accomplished; whereas only the plan of the garden as it is can be illustrated. The point to keep in mind is that the plans selected are intended to show the practical applications of the principles already dealt with. In this way many schemes which, pictorially considered, might add to the effect of the book, have had to be omitted, as their inclusion would not serve any practical purpose, or assist the reader to grasp the conditions which are conducive to successful garden design. The endeavour has been to select designs ranging from a small villa garden to those of twelve or fourteen acres, thus dealing with those conditions most often encountered. The descriptive matter accompanying the illustrations explains as far as possible the conditions under which the designs had to be carried out, and the effect which it was desirable to attain, results being left for the illustrations to expound.

Planning small gardens is almost as delightful as designing small houses; and although it would be safe to state that there are a dozen averaging from a quarter to half an acre for every one over two acres in extent, yet garden designers seldom get the opportunity of arranging them. For this reason I am compelled to give, as the smallest gardens illustrated, those belonging to members of my own family.

GARDENS TO SEMI-DETACHED HOUSES.

The first plan shows two gardens surrounding semi-detached residences at Heathwaite, which is on the East side of Windermere Lake, at an elevation of nearly three hundred feet above the level of its surface, and commanding some of the finest views in the district. In the only direction in which future building was likely to take place are a few characteristic cottages, which in no way spoil the outlook, and are much more presentable than the speculative buildings which might otherwise have been erected. To give meaning to the garden designs and their connections with the houses, the ground-

EXAMPLES OF GARDEN DESIGN.

Small detached residence.

floor apartments are worked out on the plans. It will be noticed that the site is bounded by public roads on the South, East and North sides, the ground to the S.W. of the garden being planted as an orchard. The houses are placed much nearer the South than the North boundaries, as this portion of the ground is considerably more elevated than the remainder. In designing the gardens it was decided to have one tennis lawn in common on the S.W., and that both houses should conjointly use the walks connecting with the several public roads, but to divide the remainder of the ground as equally as possible. A deep terrace, 15 feet wide in front, and on the N.W. end of the house, is connected with the entertaining rooms by the verandah; between this and the lawn tennis ground, is a second terrace, 25 feet wide, both terraces being supported by rough broken-coursed walls, coped with thick Westmorland slates, with rough steps to foster

FIG. 377.

THE NUMBERS ON THE PLAN INDICATE:—(1) PORCH, (2) ENTRANCE LOBBY, (3) DRAWING ROOM, (4) STUDY, (5) DINING ROOM, (6) KITCHEN, (7) SCULLERY, (8) YARD, (9) VERANDAH, (10) LOWER TERRACE.

the growth of spleenwort and other ferns, as shown in the photograph. An outcrop of virgin rock which existed on the site of the terrace walls was left partly uncovered, so as to give accommodation for rock plants, and from this the higher terrace wall rises quite naturally.

Beech hedges divide the tennis ground from the orchard on the South-west, and the flower border and main walk from the kitchen garden on the North-west side. The acute angle enclosed by the two roads at the North corner of the site is planted with evergreen shrubs, growing to a considerable height to screen the garden from some cottages on the opposite side of the road. All the flower borders are filled with choice hardy perennials and sweet-scented and free-flowering roses, and all the walls are covered with a selection of clematis, climbing roses, and other hardy climbers.

EXAMPLES OF GARDEN DESIGN.

GARDEN TO A SMALL DETACHED RESIDENCE.

Semi-detached residences.

The small garden at the Corbels, Windermere (Ill. No. 382), will probably be interesting, as it was the property of the writer, and being designed for his own occupation, consequently expresses his own ideas untrammelled by the wishes or prejudices of a client. There is, therefore, more of that feeling of breadth and continuity of purpose which should characterise an ideal small garden, and which is usually absent owing to the overcrowding of plants and other features.

There are no drive or carriage turn, and instead of sloping paths there are fourteen steps from the garden entrance to the front door, otherwise the tennis lawn, so restful to the eye, would have been impossible. The arrangement of the steps is much easier, especially for old people, than the steep path which would otherwise have been necessary. By referring to the plan it will be noticed that whereas steps are necessary in order to reach the front door, the back path is level; it will therefore be realized that the fall

FIG. 378.—TERRACES IN FRONT OF SEMI-DETACHED RESIDENCES.

in the ground between the Windermere road and the field below the summer-house is considerable. It was to meet these levels that a terrace three feet six inches below the floor level of the house, was arranged, the tennis lawn being constructed at a level about half-way between those of the terrace and field. Thus the terrace is three and a half feet below floor level, while the tennis lawn is three feet six inches lower or seven feet below floor level, and the field again ten feet below floor level. The terrace and boundary walls are built of the native blue slate rock with coping of the same material, a touch of character being given by the arched gateway, connecting with the highway and the summer-house.

A feature is also made of the trellis work, which gives a dividing line between the summer-house walk and the fruit border, and also provides the necessary connection between the house and the summer-house, and being overgrown with climbers, is a pretty feature in the garden. The connecting border is planted with free-flowering roses,

EXAMPLES OF GARDEN DESIGN.

FIG. 379.—GARDENS TO A SMALL DETACHED RESIDENCE.

FIG. 380.—GARDENS TO A SMALL DETACHED RESIDENCE.

including some of the single varieties ; whilst standard Gloire de Dijon roses are placed at regular intervals. inside the wall by lawn, which is allowed giving the appearance with the hedge on the bordering the road to hedge, to be trimmed shapes. The whole of clad. The long border perennials, varied at golden hollies and the terrace at the head golden Irish yews, walk, to be formed

The small kitchen through an archway seen on the right hand Nos. 379 and 380, and middle by a walk, on planted a thorn hedge. to be clipped to shape, all the purposes of drying ground, and necessity of providing the usual posts and lines, which disfigure so many small gardens.

FIG. 381.—GRASS WALK AT THE CORBELS, WINDERMERE.

A small detached residence.

FIG. 382.

All the flower borders are filled with hardy perennials ; bedding-out plants, which would add considerably to the expense of maintenance, not being required. Economy has

EXAMPLES OF GARDEN DESIGN.

A larger detached residence.

been considered all round, and this fact may have added something to their quiet reposeful feeling. The Corbels is the more distant of the houses in illustration No. 378. Since this plan was drawn, an additional strip of ground has been purchased, making it possible to construct the grass walk and borders shown in accompanying photograph (Ill. No. 381).

GARDENS FOR A LARGER DETACHED RESIDENCE.

This provides another example of a garden only slightly larger than the last, which was laid out some seven years ago for the late Mr. Robert R. Mawson on a site immediately opposite the main entrance to the well-known Windermere Nursery Gardens, of

FIG. 383.

which he was the owner. The nursery and the residence were planned in relation to one another, the main entrance door and porch to the latter being so placed that the path up to them from the highway continued the lines of the vista down the principal path of the former.

The Nursery grounds being leasehold, there was always the possibility that they might be abandoned in favour of another site, and it was therefore desired that some of the conservatories and plant houses, together with accommodation for the clerical staff, should

EXAMPLES OF GARDEN DESIGN.

form part of the Shrublands scheme, thus creating a permanent business centre. Reference to the plan (Ill. No. 383) will show how this has been effected to the North of the house, and in such a manner as to leave the West, South and East fronts for the use of the residents. *A larger detached residence.*

This necessity for devoting a part of the grounds to the needs of the business of course still further curtailed the area available for the grounds, but, by making the very most of the remaining space, quite a self-contained series of pleasaunces has been contrived. Entering from the highway by the gate and steps shown in illustration No. 73, we come first of all to the forecourt surrounded by clipped hedges, and with the path from the gate to the porch crossing it. This path is flagged in the centre and the remaining space on either side paved with cobbles, thus combining the rusticity of the latter method with the practical advantages of the former. It is crossed by another walk, which, to the

FIG. 384.—VIEW FROM THE LAWN, SHRUBLANDS, WINDERMERE.

left, leads through an arch in the clipped hedge to the business entrance on the North side of the main block of buildings, while, to the right, it passes between other hedges to the pleasure grounds proper. These, on the South front of the house, are constructed in three levels, the two upper being terraces one above the other, and the lowest a tennis lawn. Comparison of the plan of these gardens with illustration No. 384 will explain how this is done more clearly than any description possibly could, and the photograph will further show how the local character is expressed in the building, and also the architectural adjuncts of the garden, such as the walls, steps and pergola columns. They are all built from the rock quarried on the site, which in itself is almost enough to ensure this. Sufficient rock is still left, however, to be introduced into the garden scheme as an ornamental feature, and to grow Alpine and other rock plants on in the same way as in the garden first described.

EXAMPLES OF GARDEN DESIGN.

*A larger
detached
residence.*

The terraces, made necessary by the contours of the ground, add very much to the charm, variety and convenience of the garden. In small places such as this, especially when situated in a mountainous district, there is not only something particularly restful in the level stretches they provide, but they also allow of flat walks broad enough at least for two to walk abreast in pleasant conversation, and, if paved with cobbles or crazy paving with their numberless joints through which storm water will rapidly run away, they form a garden attraction which is equally acceptable at all times of the year when it is not actually raining. By using walls instead of grass banks, much precious space is saved and the opportunity provided for a charming rock and wall garden. With this end in view the lower terrace wall is built dry, that is without mortar or cement, and has a backing of earth, as described in the chapter which deals with wall gardens. A layer of well-rotted turf was also built into the wall under each batch of plants, and the great success which has resulted has more than atoned for the extra expense and trouble involved. A marked feature of this simple terrace scheme is the arrangement of rough rock steps from one level to the other, which, though costing less than a quarter the sum which would be paid for the usual dressed stone steps, are well adapted to their position, and, at the same time, admit of tufts of Alpine flowers between the chinks.

While the garden stands among wooded surroundings, it is, like so many new domains, entirely without big trees so placed as to give extensive shade, it has therefore been found desirable to provide the pergola erected on the upper terrace near the garden entrance from the drawing-room, as shown in illustration No. 384. This feature is also built of local stone, and serves to enclose the small panel garden which is overlooked by the dining-room window.

The ground at the East end of the garden is devoted to herbs, strawberries and bush fruit, while a few tall conifers in the South-east corner screen adjoining property. At the North-east corner, a piece of land has been devoted to children's gardens, and a site provided for a play-house.

The part of the land devoted to the nursery business has been laid out in such a manner as least to effect the privacy of the remainder, and, at the same time, so as to allow of the whole being converted into private gardens without serious alteration should the necessity for this ever arise.

The several views of this garden which are given, show how much has been done in the very short time in which it has existed to clothe it with greenery, and how the many crudities which so often characterise newly formed gardens have been avoided.

GARDENS FOR A GOOD-SIZED SUBURBAN RESIDENCE.

There are many points in this plan which serve to illustrate some of the recommendations made in the earlier part of this work; there are others which have a very direct bearing on the designing of gardens connected with small houses. To understand the plan of the garden it is necessary to grasp in the first instance the plan of the house, which has been designed with some regard to the possibilities of the garden, but more particularly to understand the position of the ground and its surroundings. Situated on the West side of the old road leading from the village of Berkhamsted to the Common, and at the top of the steep ascent known as White Hill, there is only one small field to the North-east separating it from the Common. The ground slopes some three feet in its length from the North-east to South-west, but along the road there is a much greater fall, the point opposite the gate being some six feet below the garden level, whilst opposite the carriage court the road is only about four feet lower. Crosswise the ground is practically level, but beyond the North-west fence it falls rapidly into a valley, the rising ground on the opposite side being richly and picturesquely timbered. To the South is a recently erected house, which in a great measure decided the plan of

EXAMPLES OF GARDEN DESIGN.

the garden ; beyond this, in the hollow, is seen the fine old tower of Berkhamsted Church, with the charmingly wooded slopes of Ashlyns Park to the left.

A good sized suburban residence.

The carriage court occupies a square, two sides of which are formed by an angle of the building, and that on the East by the road, on to which the entrance opens without an intervening drive, while on the North side it is enclosed by a split oak fence, with lattice-work above, some seven feet six inches high. The kitchen wing and necessary yard space are immediately behind the trellis on the West side, and the house is so placed on the site as to allow the stable, coach house and yard to be entered direct from the carriage court. Tradesmen have a separate entrance and path, arranged behind the North side of the trellis, a door out of the kitchen yard being behind the carriage way into the stable yard. The greenhouse, potting shed, and herb garden occupy the space between the carriage court and the North boundary hedge.

As will be seen from the perspective view of the grounds (Ill. No. 386), the garden scheme on the South front of the house is centred on the main gable with its verandah and balcony. This allows of a full-sized tennis lawn backed up by a summer-house, with apsidal hedges on either side and a semi-circular arrangement of flower beds. As these features come to one side of the ground, there is room on the other for a nicely

FIG. 385.

THE PLAN OF THE HOUSE IS EXPLAINED BY THE FOLLOWING NUMBERS:—1. CARRIAGE COURT, 2. KITCHEN YARD, 3. STABLE YARD, 4. STABLE BLOCK, 5. GREENHOUSE, WITH POTTING SHED AT THE END, 6. ENTRANCE PORCH, 7. ENTRANCE AND STAIRCASE HALL, 8. MORNING ROOM, 9. GREAT PARLOUR, OPENING INTO CONSERVATORY AND VERANDAH, 10. DINING ROOM, OPENING ON TO VERANDAH, 11. KITCHEN.

proportioned panel garden with a sundial in the centre, which is invaluable in adding interest to the scheme. Beyond this arrangement is a kitchen garden, and to give greater seclusion to it, pergolas are constructed over the walks connecting it with the pleasure grounds.

The plateau on which the house stands is but two feet above the carriage court and one foot above the tennis lawn. This change of level, though slight, allows of a stone kerb, which gives the effect of a terrace in front of the house, and at the foot of which is a border for select free-flowering and sweet-scented roses. A garden seat at each end finishes the raised plateau, and embowering arches of roses are placed between the main terrace walk to the top of the steps. Along the East side of the garden the old hedge and dyke have been retained, but to make its line conform to the rest of the scheme on the garden side, additional common hollies are planted, the whole, when sufficiently grown, to be trimmed to one level.

Although a very sunny garden, ample shade was readily provided by the loggia, summer-house, and pergolas, and also by the walk between the house and the North-west boundary. The garden will shortly be splendidly protected by the holly hedge, trimmed to a height of six feet, which, with good growth, should be accomplished in six years.

EXAMPLES OF GARDEN DESIGN.

*A good
sized
suburban
residence.*

The area of the ground being restricted and the intention being to make the most of it as a garden for flowers, shrubs and evergreen trees have been almost entirely excluded. The holly hedges on the East and North boundaries, with the fine holly bushes standing above the latter; the group of cypress and yew trees on either side of the summer-house, and the standard hollies, will provide sufficient greenery for the Winter season. During the Spring months there is a wealth of bloom on flowering shrubs, including lilac, mock orange, spiræa, deutzia, ribes, weigela, and many others.

FIG. 386.—GARDENS AT BERKAMPSTED DESIGNED FOR S. R. TIMSON, ESQ.

Climbers are planted wherever there is wall space or treillage over which to ramble, and the accommodation for them is quite exceptional for so small a garden. It is expected that the interest from this class of plant alone will more than compensate for any lack of shrubs. In addition to the climbers on the house, out-buildings and treillage, single roses, such as carmine pillar, Austrian briars, etc., are planted at regular intervals along the several borders and trained to larch posts some seven feet high.

A LARGE TOWN GARDEN.

As an example of a town garden, I do not think I can do better than to give a description of the grounds attached to the town house of Sir William Lever, Bart., at Hampstead, not only because the scheme was an entirely new one, completely replacing the gardens which existed before, but also because the outstanding problem was one which must necessarily occur again and again in this class of work.

This problem consisted in the satisfaction of two main requirements. In the first place, an adjacent knoll on Hampstead Heath overlooked the whole of the grounds in such a manner as to make any sort of a fête or garden party quite out of the question in such a populous district unless something was done to give shelter and seclusion, and, secondly, this seclusion must be obtained without blocking out the unique view over

FIG. 387.

EXAMPLES OF GARDEN DESIGN.

*A large
town
garden.*

Harrow-on-the-Hill, which is equally good from the grounds as from the adjacent "Horse Pond."

In addition to these two main requirements there were other factors which helped to determine the nature of the design to be adopted. Sir William Lever, with his usual enterprise and energy, was anxious that whatever was done should be done quickly, and that the design should not be one which would take a long time to weather and attain to at least a considerable proportion of its ultimate effect. It was also desired that provision should be made for the more utilitarian part of gardening, propagating houses, potting sheds, stores and frame ground, which would need careful contriving if they were not unduly to limit the space available for pleasure grounds, and, moreover, more thought had to be given to the question of open-air entertaining than is usually the case in a town residence.

Previous to the preparation of the scheme, the house had been much enlarged, and the music room and china room wings, shown on the plan (Ill. No. 387), added by the late E. A. Ould, Esq., of Messrs. Grayson & Ould, Architects, of Liverpool, who was also responsible for the terrace along the garden front of the house, on which the Author subsequently placed the verandah shown in illustrations Nos. 171 and 172.

These additions to the house had thrown the design for the grounds, as it previously existed, completely out of scale, so that, quite apart from the altered conditions which had been brought about, the preparation of a completely new scheme had become imperative.

A very valuable feature which has been carefully retained existed in the presence of a number of fine forest trees near the house, but, apart from these, there was little but the requirements to be met to guide the designer in the preparation of his scheme. On the contrary, there was a drop of considerably more than thirty feet from the floor level of the house to the West boundary of the estate, a distance of only some two hundred and fifty feet from the ends of the projecting wings, thus involving an engineering feat which would have deterred a less energetic client, if level lawns, so necessary to a town house where entertaining is to be done, were to be formed. Of course this engineering feat had to be kept entirely out of sight, and thus it presented a further problem to be dealt with.

How this drop in the ground was met, and not only met, but so met as to prove an actual asset, will be seen by comparing the plan with the accompanying photographic illustrations. The building of a retaining wall sufficiently high to allow of the flat lawns shown, not only gave a splendid vantage-point from which to view the wonderful prospect over Harrow-on-the-Hill, but also provided means for placing the propagating houses, frame ground, etc., out of sight below it, while the potting shed, gardener's store, and the heating chamber for the glass-houses were provided for under the raised, pergola-covered terrace which encloses two sides of the lawn, and which is shown in illustrations Nos. 388 and 389.

As will be seen, the axial line through the centre of the house is very strongly marked by the spreading steps and water-lily pond shown in one of the photographs. In the original scheme, this visual axis was closed by the central gable of the conservatory shown in illustration No. 275, but since this photograph was taken, the erection has been removed and the pergola temple shown in illustration No. 388 put in its place, and, as we go to press, a further extension and improvement is nearing completion, whereby the main axial line through the centre of the house, the main terrace steps, and the lily pond will be continued for a considerable distance along a raised terrace extending away from the house, and treated in the same manner as the pergola already referred to. From this extended terrace or exedra fresh views of the beautiful country visible from the Heath will be obtained, and, at the same time, the grounds as a whole will gain enormously in apparent as well as in real size.

EXAMPLES OF GARDEN DESIGN.

FIG. 388.—LILY POND AND PERGOLA, THE HILL, HAMPSTEAD, DESIGNED FOR SIR WILLIAM LEVER, BART.

FIG. 389.—PERGOLA, POND AND TERRACES AT THE HILL, HAMPSTEAD.

EXAMPLES OF GARDEN DESIGN.

FIG. 390.—GARDENS AND CHINA-ROOM WING AT THE HILL, HAMPSTEAD

FIG. 391.—GARDENS AND MUSIC-ROOM WING AT THE HILL, HAMPSTEAD.

EXAMPLES OF GARDEN DESIGN.

The whole extent of the estate is some four-and-a-half acres, of which, however, one-and-a-half acres are detached and are used as a cricket ground, leaving three acres for the area shown on the plan, including the portion covered by the house and its extended side wings. This area is, of course, still further curtailed by the small portion unavoidably given up to the carriage approach and that occupied by the stables, so that a glance at the accompanying photographs will show at once that the very most has been made of the remaining portion which could be devoted to the pleasure grounds after the further deductions necessary to provide for the frame ground and glass houses. As before explained, however, these latter have been arranged very economically as regards space.

A large town garden.

It has been difficult, in the very restricted space which could be devoted to this garden, to illustrate the grounds as fully as one would have wished, but the four accompanying photographs have been selected as giving the best general idea obtainable without exceeding the space at our disposal. Of these, two, as already hinted, look along the main axial line through the grounds, No. 388 looking away from, and No. 389 towards the house. The first of these shows very clearly the general design of the pergola, as well as the lily pond which has been mentioned in the chapter devoted to water in the garden, with its stepping stones for reaching the lilies and its central fountain, which is a piece of clever modelling by Mr. Derwent Wood which has attracted considerable interest. It is finished in lead.

The other illustration on the same page shows the small details of the pergola design more distinctly, and also the central flight of steps leading from the lower terrace to the upper; and behind these is seen the verandah, of which nearer views have been given (Ill. Nos. 171 and 172).

The two remaining illustrations (Nos. 390 and 391) give general views which, when examined together with the plan, will give a very fair idea of the general appearance of the gardens. In No. 391 the fine timber trees, which are such an asset to the scheme, are to be seen with oak seats encircling their boles, while in No. 390 the extreme end of the pergola shown in the first two illustrations described is visible, with the domed rose-temple which finishes it. Another of these domed temples is placed at the corner of the lawn, where the best view over Harrow can be obtained. This last photograph was taken soon after the steps were completed, and before the greenery which covers them in the other view had had time to develop. It, however, shows the more clearly for this that the difference of level between the two terraces has been disposed in two grass banks with a broad grass walk between them. As the boughs of the large elm and other trees sweep out over this walk, it is a most successful feature.

GROUND TO A NEW COUNTRY SEAT.

It is a very real cause for lament that the modern spirit of change reaches so often the old country seats which are the pride of every Englishman who loves his own rural countryside. Next, therefore, to assisting in the preservation and enrichment of the old (as in the concluding example of this series), the Writer has had no more agreeable or fascinating task than when he has been called in to create a new domain which, while it is modern, will still fulfil all the functions in the future of the old ancestral home of the past. He has liked even to feel that, if his work can reach the high level he would wish by the help of a sympathetic and artistic proprietor, it may eventually attain to that mellow beauty which is at present the prerogative of the old examples.

There was an exceptional opportunity for this at Dunchurch Lodge, which is illustrated in the accompanying photographs. The name "*Dunchurch*" is associated in the minds of most people with the immortal Mr. Pickwick returning in the pouring rain

FIG. 392.

from his unsuccessful journey to Birmingham, and, when one visits the actual scene of the incident, the association, instead of being rudely dispelled, as is so often the case, is immediately heightened in a most delightful manner. There are still the old stocks in which malefactors and unfortunates were so often confined, and which carry us back with a rush to the days of beadles in cocked hats and overflowing self-importance, and there are the old houses and coaching inns with scarcely a modern feature pronounced enough to dispel the illusion, and over all lies that peaceful and wholly undefinable charm which belongs exclusively to the old coaching town.

*A new
country
seat.*

Considering the nature of the task before the designer, such surroundings could not fail to be most inspiring. The new domain to be created, standing as it does less than a hundred yards from the centre of the little town, with its rather less than a thousand inhabitants, is still screened from it sufficiently so to prevent any clashing of new and old until the former shall have been clothed, by Nature and the hand of Time, with that beauty which it is so impossible to create, but which we may do so much to promote or conserve with their help.

FIG. 393.

The situation is, however, unique in another way, for the windows of the mansion overlook such a stretch of typical English rural scenery as not one in ten such places can boast. As will be gathered from the plan and illustrations, the ground slopes away sharply from the main garden front of the house and, from the terraces which this has given occasion for, one looks across an open valley to rising ground beyond, which is beautifully timbered, and right and left along great vistas of valley and rolling country.

Such sweeping views and open prospects, while they are worth any sacrifice, naturally make sheltered parts of the garden more difficult to obtain, and so, in a case like this, we have a dual task: to make the most of the open views and falling ground, and at the same time to prevent bareness and give gardens which shall be acceptable in all weathers. How this has been done will be seen on examining the plan in detail.

The original approach was from Dunchurch, as marked near the top left-hand corner of the plan, but, since the entrance and lodges shown were built, the drive has been extended towards Rugby, and terminated in the pair of estate workmen's cottages given in illustration No. 25. The necessity for placing the main façade and entrance arch of the stables on the drive, and the contours of the ground, have together indicated

EXAMPLES OF GARDEN DESIGN.

FIG. 394.—THE ROSE GARDEN, DUNCHURCH LODGE, NEAR RUGBY.

FIG. 395.—THE SUNDIAL COURT, DUNCHURCH LODGE, NEAR RUGBY.

rather an unusual treatment for the main drive. As will be seen from the plan, it has been constructed in the form of a straight and severely symmetrical double avenue between the entrance gates and the open space in front of the stable block, and from there it follows the contours of the ground in a boldly sweeping curve, the point where the change is made being marked by a gateway. As before stated, it is only the exceptional nature of the contours which makes such an arrangement possible. The ground between the entrance and the stable block is perfectly flat, and a sudden dip, at the point where the gate divides this part of the approach from the curved portion, prevents the whole being seen at once, and so insures that the two styles shall not clash in any way.

*A new
country
seat.*

As will be seen, the circular carriage turn is treated in a strictly architectural manner, with surrounding walls and handsome wrought-iron gates symmetrically placed, one pair giving access to the drive and the other to the pleasure grounds. Between the two is a narrower gateway on the axial line of the carriage court and the porte-cochère, through which the eye is led along a green path between an avenue of trees to a summer-house, with a small lily-pond in front, and this in turn is backed up by a group of well-grown timber trees, which were already on the ground when the gardens were designed, as were a number of the other trees shown on the plan at either side of the drive.

Passing from the carriage court through the wrought-iron gate connecting with the pleasure grounds, we come immediately into the small octagonal paved sun-dial court shown in illustration No. 395, which connects with the paved upper terrace and forward to the paved rose garden and lily-pond court, and thus a considerable stretch of paved promenade of varied interest is obtained, which will be available when other parts of the grounds are too sodden for comfortable exercise.

A good idea of the appearance of the main front of the house is given by illustration No. 371, which faces the commencement to Chapter XX., especially if examined together with the plan of the grounds. As will be seen, the point of view is from the extreme end of the grass walk to the West of the tennis lawn, which gives the lowest of the three terrace levels its special purpose in the scheme. All three terraces are contrived with a view to giving the main façade of the house the strong broad base which both its setting and its architecture demand, and the long grass walks between herbaceous borders which flank the lowest on either side emphasize this in a marked manner. The strongly marked cross lines thus created again demand complementary treatment, which is obtained by emphasizing the axial line through the centre of the building and the flights of steps connecting the terraces, by means of the lily-pond, summer-house and water steps placed at a little distance at the foot of the sloping lawn, which recedes from the lowest terrace. This summer-house closes the garden vista in this direction, and thus all the features of this side of the house are given connection and welded into a complete and self-contained scheme.

On the West side of the mansion are two features specially deserving of notice. The first is the rose garden, of which an enlarged plan is given (Ill. No. 393), and which is also shown in the photographic view in illustration No. 394, though a little of the effect is left to the imagination as the newly planted yew hedges will have such a very different appearance when grown and trimmed to a straight line. It is of these two gardens we spoke when referring to the need of shelter in a domain newly formed on ground commanding extensive views. When the hedges are grown, they, together with the fruit walls on the North, and the house to the East, will make them delightful for use in the early and late Summer when the terrace garden and open lawns on the South front of the house are too exposed to cutting winds for comfort. The pond garden has quite a cloistral appearance, enclosed as it is by walls or buildings on three sides, with its severely plain treatment, its rippling water, and the little terrace, while the vista down the bowling alley prevents any suggestion of its being too shut in.

EXAMPLES OF GARDEN DESIGN.

FIG. 396.—THE MAIN TERRACE, DUNCHURCH LODGE, RUGBY.

FIG. 397.—THE CROQUET LAWN AND DOOR TO KITCHEN GARDEN, DUNCHURCH LODGE.

EXAMPLES OF GARDEN DESIGN.

To the North and North-east of the house we have the kitchen garden, frame ground, orchard and paddock. The first of these is shown in illustrations Nos. 295 and 314; and here, with the inspiring help of a sympathetic client, I have tried to materialize all those ideas which have been so strongly insisted on in the Chapter dealing with kitchen gardens, by making it one of the most attractive parts of the domain without in the least impairing its usefulness. The main path of the garden is shown in illustration No. 295, facing the opening to Chapter XV., and strikes the keynote of the design. While nothing is introduced which has not a directly obvious utilitarian purpose, every effort has been made to give each feature interest by the use of suitable material and correct proportion and balancing of parts. Thus the little range of glass-houses against the North wall of the garden is made additionally attractive by the symmetrically-designed gardener's office at one end, and fruit store at the other, the former being clearly seen at the end of the walk in illustration No. 295, and the latter in illustration No. 314. These have been built of a purple-brown brick and oak wood-work, which, while they strike a local note, are just the right colour to form the best possible background to the green foliage and pale pink and white blossom of the fruit trees; and the same material is seen in the fruit walls, which have a quaint coping of flat and half-round tiles.

*A new
country
seat.*

GARDENS TO AN ANCESTRAL DOMAIN.

Graythwaite Hall, which is situated in one of the valleys which border the Western shores of Windermere, has been the seat of the illustrious and historical family of the Sandys since the middle of the fifteenth century, and even for hundreds of years previously they held estates in West Cumberland which adjoins this part of Lancashire. In fact, the history of the family has practically been bound up with the district from the time of King John to the present day. My client thus brought with him a full sympathy with the traditions of his ancestors; and has with characteristic energy remodelled the Hall in a style that is expressive of its history, and yet can keep rank with the present, and has had every part of the estate equipped in this spirit.

To realize what has been done, it is necessary to understand the general arrangements of the house, stables, and gardens prior to the scheme of improvement being taken in hand. In the first place there was only one entrance to the grounds, which was used for all purposes, the position being near the group of shrubs marked 10 on the plan, a small postern gate, not shown, occupying the position of the old entrance, now serves as a private way to the kitchen garden. Between this entrance and the position where the two drives join, there was a rise, and from this to the main entrance portico a very steep decline. There was no terrace of any kind, but masses of overgrown trees and shrubs surrounded the house on every side. The ground, now converted into a formal garden, and which is about sixteen feet higher than the carriage court, was the site of the old stables; this high ground came right up to the house. To the North and opposite the recreation room are a row of large limes, whilst to the North-west corner of the house, the ground rises in a mound ascended by a winding walk.

The ground to the South-west, or from the front of the house, falls in the direction of the little bridge, but, owing to the large number of trees and shrubs, very little of this was seen—in fact there was not a single open view in any direction, the Hall being completely shut in.

The following description, which appeared in the "Gardeners' Chronicle" of Nov. 29th, 1896, gives a fair idea of the gardens as altered at that date.

"The design for these grounds, which are entirely new, is arranged so as to obtain "as much of the picturesque as possible, and at the same time to involve but little "extra labour in maintenance. The site, which is of a very undulating character, lies "on bluestone rock, which makes excavation very expensive. Generally speaking, it

FIG. 398.

“ falls to the West, and rises to the North-east and South-east, the mansion being placed
 “ towards the North-east end of the pleasure ground. As the ground falls towards it
 “ from the East and South and North, and falls from the house towards the West, its
 “ position as regards the main roads would be thought by some persons to be rather
 “ unfortunate, as the drive traverses a descent in approaching the Hall, which gives
 “ it a sunk appearance. This low-lying effect has now been removed by sinking
 “ the drive in one part of its course, by removing a large portion of the hill between
 “ the plantations numbered 10 and 12, by making the main entrance court to run
 “ level from the colonnade to a width of 60 feet, supporting it by a balustraded terrace
 “ wall, by forming a terrace on the North and West fronts and sinking these some-
 “ what so as to give greater elevation to the house. A part of this work has already
 “ been done, and gives the desired effect. Although situated in a beautiful district and
 “ forming part of a charming estate, there were, owing to the whole of the park and
 “ grounds being surrounded by a belt of oaks about a hundred years old, practically no
 “ views into the park or of the distant landscape. By felling a number of these oaks,
 “ they have been broken up into groups, and by this means many very fine views of
 “ the surrounding country are obtained. The crest of the hill which rises on the West
 “ side of the stream has also been cut through, and a view opened up across the park.
 “ By the removal of some cowsheds, barns, and a smithy, a very fine view, terminating
 “ in a rocky hill planted with Scotch Firs, has been opened up and is now seen from the
 “ walk which leads alongside the stream flowing through the park. By its margin it
 “ is intended to naturalise daffodils, spiræas of sorts, iris, Japanese anemone, and other
 “ hardy free-flowering plants.

*An
ancestral
domain.*

“ The stables, which at present occupy a position near the house, are to be removed
 “ and a spacious new block built on ground convenient to the dwelling—in the position
 “ shown on the plan. A walled-in kitchen garden of about one and a half acres, with
 “ an excellent gardeners’ cottage, and a range of glass, have already been erected on the
 “ South-east of the mansion. A number of old trees were found on the ground, most
 “ of which have been taken advantage of, and others have been transplanted to their
 “ present stations in the park and elsewhere. Conifers have been largely planted for
 “ shelter, and large quantities of the choicer rhododendrons, azaleas, and acers added to
 “ ensure variety and brilliancy of colour during the season.”

Since the foregoing article appeared much has been done in many directions still further to improve the gardens. In the first place, the old stables have been removed and the site converted into a formal garden, the old bark barn at the end being remodelled and made into a recreation room. The ground has also at great expense been excavated from the end of the house, which has resulted in a great improvement. A drive connects the front carriage turn with the side entrance court, and is spanned by an arch designed by the late Mr. R. Knill Freeman, F.R.I.B.A., which leads to the formal garden on the site of the old stables, and is shown in illustration No. 400. The proprietor’s love of choice flowering plants has resulted in a fine collection of hardy perennials and flowering shrubs, which is increasing annually. The rustic bridge which spanned the little stream has been supplanted by the oak bridge shown in illustration No. 189, a sundial has also been designed to stand on the terrace; and suitable garden furniture has been introduced.

As rock abounds everywhere within a few feet of the surface, terrace formation, as generally understood, was almost impossible. The plan as illustrated therefore represents the design as fitted to the existing contours, even the terrace levels being controlled by existing conditions. Whatever exceptions may be taken to certain portions of the reconstruction, it may be said that the luxuriant way in which everything grows renders the garden at all times interesting.

FIG. 399.

EXAMPLES OF GARDEN DESIGN.

The following is a key to the letters and figures on the plan :—

A. Seat on mound.	F. Gateway in arched opening.
B. Flight of steps with seats at head.	G. Recreation room.
C. Lead figure on stone base (the two stars represent old yews).	H. Carriage court.
D. Sundial.	I. Rhododendrons by side of waterfall.
E. Luggage entrance and court.	J. Garden house.
	K. Bridge. (See Ill. No. 189).

*An
ancestral
domain.*

GATEWAY AND STEPS TO FORECOURT.
Graythwaite Hall.

FIG. 400.

1. Three plantations composed principally of choice hybrid rhododendrons.	13. Collection of American plants.
2. Azaleas and Rhododendrons on sloping bank.	14. A large old Azalea.
3. Groups of deciduous flowering shrubs.	15. Pernettyas, Spiræas, Mezerions and other shrubs.
4. Rhododendron <i>Wilsonii</i> and Mezerions.	16. Hardy heaths planted on rock bank.
5, 6. Blue Cedars (<i>C. atlantica glauca</i>), with groups of Pernettyas and Vacciniums on the grass.	17. Collection of choice Pines.
7. Large groups of choice Pernettyas round base of rock.	18. Rhododendron <i>caucasicum album</i> .
8. Spanish Gorse.	19. Large group of old <i>Ponticum Rhododendrons</i> .
9. Cream Broom.	20. Group of <i>Prunus Pissardii</i> .
10. Hybrid Rhododendrons.	21. Mahonia and other shade-loving plants.
11. A cutting between two rock banks planted with rock plants and ferns.	22. Irish heaths.
12. Double Gorse.	23. Group of rock shrubs.
	24. Mahonia, Gaultheria, Skimmia and other deciduous flowering shrubs.
	25. Rhododendron and Ghent Azaleas.
	26. Three pigmy Pines.
	27. Collection of Hollies and standard flowering shrubs.

EXAMPLES OF GARDEN DESIGN.

*An
ancestral
domain.*

Nearly twenty years ago, when first consulted by Colonel Sandys, I regretted that his predecessor had removed the entrance from the old court marked E on the plan, illustration No. 399, to the South-west front, which I considered it was highly desirable should be retained as the main garden front. It was, however, too late to make further alterations to the house, but the prospect of certain additions to the Hall has reopened the question, and now plans have been prepared which not only restore the old carriage court to its former place, but permit of a fine drive to the North entrance, with gatehouses and avenue approach, and an improved terrace scheme on the garden front. These improvements are shown on illustration No. 41. It should be noted that the stables are on a higher level than is the avenue, and therefore the old drive to the East entrance is still to be used as the stable approach.

The old carriage court on the South front is now laid out as a paved flower court, with broad steps sweeping down to the lower lawn, and, to give additional interest to the undulating lawn, a sundial is placed in a line central with the colonnade.

Although this later development may seem sweeping and extensive, it is a fact that very little of the work already done will have to be undone. All the drives are still used excepting from the point marked 11 on illustration No. 399 to the house, which is to be narrowed to the width of a path; and the only alteration to the terrace walls is the insertion of two extra flights of steps. The undulating lawns and shrubberies are untouched, and about two-thirds of the Dutch garden is retained.

Several schemes have been prepared by the architect for the additions to the Hall, yet all allow of the general arrangement indicated on this plan; but as the building, which combines recreation-rooms with the estate-offices, as recently remodelled, is so successful, it was suggested that another building of similar design, placed to balance it at a similar angle, would give a dignified and inviting approach to the court.

This new drive will give the mansion its proper connection with the estate, and fittingly form the principal approach to the house. The estate extends very little beyond the boundary of the pleasure grounds on the South side, yet stretches for miles in a North-easterly direction, taking in the whole of Esthwaite lake, and including most of the land on its Western shore, right up to the village of Hawkshead, where the church has from time immemorial been connected with the Sandys family.

A LAKE DISTRICT GARDEN.

The plan of this garden is introduced as typical of those cases in which local conditions and the exceptional contours of the site very largely predetermine the disposition of the various features. It is situated on high ground not far from the village of Windermere, and, as is usual in that district, unique and magnificent views are to be obtained in a Northerly and North-westerly direction, and these are of such paramount importance that all other considerations of aspect must be made subservient to them. It thus comes about that many houses in the district, of which the present instance is one, are, by choice, made with the principal windows very unusually placed, while the carriage approach is from the South or South-east, thus reversing the ordinary arrangement. As a rule, too, the more rugged and uneven the site, the better the views, as, by placing the house on an elevated portion, surrounding obstacles are overcome, and a most expansive panoramic outlook obtained. This was done in the present instance so far as conveniently possible, and the ground slopes steeply away from it on two sides, as will be seen from the arrangement of terrace walls and steps shown on the plan and also on the section. Of the remaining two sides, that on which the stables stand, was levelled by excavating a considerable amount of material, while that devoted to the main approach, though it has a strong cross slope, allowed of the drive being made practically level from end to end by laying it down in the strong curves shown.

EXAMPLES OF GARDEN DESIGN.

Such pronounced curves as these, while they would be absurd on a gently undulating site, are perfectly right, and, in fact, pleasing when the reason and necessity for them are so apparent, as in the present instance. There is all the difference in the world between the two cases, in the one they are irritating, while in the other they emphasize the most marked characteristic of the site, which fact alone is sufficient justification for their employment.

A Lake District garden.

Along the top of the plan is indicated a public footpath skirting the gardens. This is practically level for the distance shown, and is higher than any portion of the grounds themselves, so much so that a retaining wall with strong buttresses was necessary to the kitchen garden, and, in passing along it, one overlooks the roofs of the stable block. This made it very difficult to obtain any privacy, which has nevertheless been quite

FIG. 401.

adequately attained by planting large conifers inside the fence. The general slope is from this fence across to the Western corner by the tennis lawn, the situation of which was dictated by a slightly less steep place which made its formation possible.

When the Writer was first called in to advise on the reconstruction of the garden some eighteen years ago, the grounds were about half their present size, all that portion North of a line connecting the northernmost corner of the tennis lawn with the potting shed having been made since. The kitchen garden occupied the piece of ground between the numbers 10 and 12 on the plan, and the remainder contained few suggestions of ordered design. Since the accompanying plan was prepared, a large billiard-room has been built to the North-east of the carriage turn, somewhat altering its character. Large oaks and conifers not only existed in the garden but in the neighbouring grounds, and these have been incorporated in the new plantations.

FIG. 402.

EXAMPLES OF GARDEN DESIGN.

A HIGHLAND GARDEN.

The seat of Major MacRae-Gilstrap is a charming domain on Loch Fyne, a good view of the mansion being obtained from the steamers to and from Inveraray, at a point near the Beacon or Otter, the new pier at Otter Ferry being on the estate. This pier is now the principal point of debarkation, but during certain months of the year the pier at Tighnabruaich has to be used, and, as this is some twelve miles distant, it was considered advisable (on account of this isolation) to make the mansion and grounds in themselves as complete and interesting as possible. At the time I was called in to advise, it had been decided to add considerably to the main building and to bring the old portions, which possessed little architectural merit, into character with the new work, additions and improvements which were most successfully carried out by W. Lieper, Esq., R.S.A., of Glasgow.

A Highland garden.

Except for a fine walled-in kitchen garden, the main carriage drives shown on the plan, which have only been slightly altered, and a little stretch of lawn on the Eastern side of the house, it could not be said that "grounds," in the usual acceptance of the term, existed. The idea presented by the site was, that it had formerly been a bluff or hill which had been levelled down to form a base on which to place the residence, the material excavated being thrown over the edge of the already steep embankment leading down to the stream, which latter, as it then was, flowing between ugly, irregular, mortar built walls, could not be said to be a natural feature.

The estate as a whole is splendidly wooded, especially near the house, where certain ornamental trees, including conifers apparently of fifty or sixty years' growth, are dotted about the lawn, the positions of these and also of some very old hollies being indicated on the plan. Almost all the hills on the estate are planted, and, as seen from the mansion, form numerous pleasing glades and vistas, and the ground below the carriage court falls in sloping undulations to the shore of the Loch. The drive to the right of the plan is used as an approach from Tighnabruaich, and also leads by a branch drive to the stables, while that to the left passes for about a mile and a half along the shore to Otter Ferry. It may be added that the home-park, which of course is divided into a series of fields and plantations on which considerable improvements have been effected, extends to about one thousand acres.

These conditions have had a marked influence on the arrangement of the plan of the house. Both dining and drawing rooms have, for the purpose of gaining a view of the loch, a window overlooking the carriage court, while the principal window of the drawing-room overlooks the terraces. The large hall is lighted by the mullioned bay window shown on the section at the foot of the plan (Ill. No. 402), the billiard and smoke rooms being in the tower; both the hall and billiard-room overlook the sundial garden and the summer-house walk.

The plan just referred to does not however include the whole of the pleasure grounds, as to have done so would have reduced the details too minutely. It may however be noted that, amongst other things, a fine cricket crease has been laid down, and that, adjoining the grounds, there is a cottage, which in Scotland is generally known as the Dower house. This has its own gardens, and also a separate drive leading to it, all laid out from the writer's designs.

In execution, the plan has been modified in one or two details, such as by the omission of the bridge across the ravine, and a slight alteration to the terraces. It will be noticed that the scheme as a whole includes almost every type of garden planning, from the formal terraces to the freest possible treatment of the stream (Ill. No. 404). Perhaps the most noticeable features are the long straight lines of walk, especially the one leading to the summer-house, and in the opposite direction the one which is carried over the bridge and on to the opposite side of the valley. There are also the long terrace walls,

EXAMPLES OF GARDEN DESIGN.

FIG. 403.—BALLIMORE. VIEW FROM CARRIAGE COURT OVER THE PANEL GARDEN.

FIG. 404.—BALLIMORE ARTIFICIAL ROCKWORK IN THE STREAM.

the intention being to lay out certain prominent lines which would grip the landscape, and give a feeling of connection between the mansion, garden, and park, the summer-house and small temple marking the end of this formal treatment. This severe style, while adding to the effect of the mansion, in no way detracts from the purely natural treatment of the stream, each being helped by the sharp contrast. As will be seen from the photographs, the terrace walls are solid, that is to say, there is no balustrade and the walls are built of the local ragstone, the dressed work being confined to pillars, string, coping and finials, thus allowing the planting of a large variety of climbers, which adds so much to their charm.

A Highland garden.

The freer or winding walks are very little seen from the formal part of the garden, and pleasantly mark the rise, fall, and general contour of the ground. There was a very important stipulation in their arrangement—viz., that a series of pleasant walks should be provided over which a bath-chair could be wheeled, without steps or obstacles, a point which should oftener be considered when laying out gardens on a broad scale.

The stream has been a somewhat extensive piece of work, in connection with which the skill of Mr. Pulham has been called into requisition. A part of this work, with the little bridge marked 9 on the plan, is shown in illustration No. 261. In improving this stream there were two considerations of a practical nature which had to be kept in view: the first being to make the banks safe against spates or floods, and the second to construct a series of pools for fish to sport in. As already stated, the sides of the stream were previously supported by rough irregularly built walls, the bottom of the stream being rough shaly rock, and the improvements were effected by removing the walls and excavating a part of the rock, and by adding new strata, as shown in the illustration just referred to, the result being much more in harmony with the surroundings than the conduit which formerly existed.

Ballimore is an ideal place for the formation of an arboricultural or botanical collection, a fact that has been recognised and pursued to full advantage by its owner, whose collection of ornamental trees and flowering plants bids fair to equal that of any other client by whom the writer has been retained. The beds and borders on the terrace are planted with a choice collection of hardy perennials, florist's flowers and roses. The walls are clothed with honeysuckles, clematis, climbing roses, wistarias, vitis coignetiae, magnolias, and other hardy climbers. In the quiet pools there are choice nymphaeæ and other aquatics; along the margins of the stream are bog plants such as iris, caltha, and spiræa, and also large quantities of the choicer daffodils and other tubers, all of which give promise of becoming naturalised and increasing. The terrace borders are planted entirely with hardy perennials, and roses. The remaining portions of the scheme are explained by the numbers and key on the plan.

GARDENS ON A FLAT SITE.

Little Onn Hall is situated about eight miles from Stafford, and three miles from the village of Gnosall, which is the nearest railway station. The present mansion has recently undergone considerable alterations and additions, a new entrance hall and billiard-room having been added, and other portions of the house remodelled. The older portions of the hall, built about 25 years ago, did not possess any very great architectural merit, but the present completed building, which is in stone, has considerable character; the numerous gables, each furnished with crowfeet or corbie steps, the stone mullioned windows, and the large climber-covered wall-space, making a very pleasing centre round which to form a garden.

The house covers a somewhat large area, the billiard-room, hall, and one end of the drawing-room facing West, the drawing-room and dining-room having one side to the South; the latter room and also the library being lighted principally from the East

EXAMPLES OF GARDEN DESIGN.

FIG. 405.

EXAMPLES OF GARDEN DESIGN.

From this it will be seen that the entertaining rooms and hall occupy three sides of the house. The site upon which the whole has been erected, and for a considerable distance round it, is practically flat; but the ground floor of the house had been very wisely raised some four feet above the general level, thus allowing of a terrace which is carried round the South and East fronts. In addition to the four feet gained by raising the mansion, the ground falls about five feet to both West and East; the level of the kitchen gardens and of the lower step into the rose garden being almost the same. On account of this rise in floor level, and of the fall to the park and kitchen garden, the Hall looks much more elevated than it did before the commencement of these improvements. To gain a clear idea of this change of level, two sections are here given; section A.B. showing the terrace to the South, the drive and the rose garden, and section C.D. the terraces and flower garden to the East side of house.

Gardens on a flat site.

Only two portions of the present scheme existed prior to my being consulted. These are the kitchen garden, and the moat or pond, both of which, as shown on the plan, are slightly altered. The moat seems at one time to have surrounded monastic or

FIG. 406.—SECTIONS THROUGH GROUNDS AT LITTLE ONN HALL.

other important buildings, and to have been stocked with fish. The old fish stewes, divided into five compartments, still remain, and are being carefully preserved.

Before this work was carried out, the house had the appearance of growing out of the ground, without any architectural supports or base. In a hilly and rocky country, this may occasionally be a proper way for it to be arranged, especially when it reposes on a cliff or rocks; but in a level country the arrangement is apt to give the building a depressed appearance, and suggest dampness.

It will thus be seen that in designing these gardens, the improvements to be aimed at were, first, and most important, to give elevation and base to the house, secured, as has been suggested, by an arrangement of terraces; secondly, to impart plenty of colour, which is provided by the rose gardens, flower gardens, and borders arranged for herbaceous flowering plants; finally, to unite the old kitchen garden and moat with the other portion of the pleasure grounds. The total area remodelled, including the kitchen garden, is eight and a half acres, and within this area considerable variety has been obtained, while the compactness of the gardens allows of their being kept in good order with the minimum of labour.

EXAMPLES OF GARDEN DESIGN.

FIG. 407.—ROSE GARDEN, LITTLE ONN HALL, LOOKING TOWARDS THE HOUSE.

FIG. 408.—LITTLE ONN HALL, VIEW FROM WALL OF CARRIAGE COURT.

EXAMPLES OF GARDEN DESIGN.

In the park there are a number of fine old trees, mostly oak, elm, and sycamore, which were incorporated in the plan of the park plantations shown in illustration No. 350; also good young timber plantations between the North end of the house and the stables, and a fine belt of beech of about 40 years' growth in the plantation near the moat, between the tennis lawn and the public highway, extending in width from the fence shown on the plan to the edge of the moat. This young timber had been much injured by a number of spruce, planted evidently as nursers, which were felled and replaced with undergrowths, consisting of rhododendrons,—especially *R. caucasicum album*, which is a capital grower in shade—azaleas, lilacs, common yews, hollies and brambles, with large patches of St. John's wort, periwinkle, ground ivy, vaccinium and gaultheria. Amongst these, again, are naturalised snowdrops, daffodils, wood anemones, wood hyacinths, American wood lilies, and other hardy Spring flowers, while on the margin of the pond are planted *Iris kampferii*, *Iris florentina*, and all sorts of sub-aquatic plants. In the pond are planted a fine collection of water lilies, water hawthorn, nelumbiums, &c.

*Gardens on
a flat site.*

In addition to the yew and sweet briar hedges, Irish yews were arranged on the terrace, and also golden and common yews clipped into shape, mostly as squares or pyramids. The rose garden, which occupies such an important position between the carriage court and the park, is planted with old-fashioned varieties, such as the York and Lancaster, the old blush, China, and damask, musk and Macartney, all planted in masses; and on the walls are choice tea and noisette varieties, which are all growing freely.

Some of the details are indicated on the sections, and these, in addition to those shown in the photographs, will give a good idea of the effect obtained in the several parts of this garden, and also serve to show the importance attached to architectural features in a level district; this being one of those places which could not have been converted into a satisfactory garden without recourse to the many forms of garden architecture that are here introduced.

A GARDEN IN GRANITE.

Although only completed eighteen months before it was photographed, this garden proves the soundness of certain principles already several times insisted upon, namely:—that stone walls, of which some garden owners seem so afraid, may present great opportunities for garden effects, and that local materials and building methods should invariably be adopted wherever possible; also that much ornamental detail is generally unnecessary, while such as is allowable should express as simply as possible the character of the constructive material. This West-country garden is situated in a district abounding in a rough-grained granite, found lying on the surface of the surrounding moors and woods, and always beautifully weathered on the exposed face. The stone splits well but is not adapted to fine dressing or small moulds, yet is most effective in squared blocks or columns, with walls built in rough rubble. Instead of classic nosing to the steps, for instance, the undershadow is obtained by a roughly picked splay rounded over to the face of the tread, which are set in random lengths laid on a solid rubble core.

In the wall garden which figures in the end papers to the book, no dressing beyond rough scabbling was attempted, the crannies being filled with rock plants. The success of this work has inclined me still more towards simple retaining walls in preference to expensive pierced work and balustrades, which, though necessary to mansions designed in the grand style, are not essential to houses of moderate dimensions; and the money thus saved could be more effectively expended upon good modern sculpture.

I was called upon to advise on the improvement of the property, about eight years ago, before any serious plans had been made for the house or its setting; the owner having decided to improve the existing residence and to lay out new gardens,

EXAMPLES OF GARDEN DESIGN.

FIG. 409.

which were to incorporate the old kitchen garden and a lake formed by his predecessor in the valley below, both of which have undergone many alterations and modifications to bring them into harmony with the general scheme. Although the alterations to the mansion were so drastic that it might with more truth have been regarded as having been rebuilt than altered, the retention of the original house formed part of the plans, the gardens having undergone entire reconstruction on a scale which bears no relationship to their original arrangement.

Garden in granite.

The first radical and necessary change was to bring the main entrance to the house from the South to the West, thus leaving the South front free for garden developments, and ensuring that the delightful prospect, here expanding over rounded hills bordering Dartmoor and the famous Doone Glen, be viewed across stretches of restful lawn, unbroken by drives or gravelled spaces.

The plan and elevations of the residence were developed in a style distinctly homely, and somewhat symmetrically, with the masses agreeably broken by pleasing projections and wings, as shown by the accompanying photographs, the architect (the late Mr. Dan Gibson), whose influence is also traceable in one or two of the garden details, being appointed on my recommendation. A correspondingly massive and homelike effect has been sought in the gardens, nor is symmetry wholly absent.

Owing to the importance of the work, the great difference in, and extreme difficulty of treating the levels, the large number of buildings set at all angles, and the necessity of preserving the sparsely distributed timber trees, a careful survey, with a complete grid of levels, was necessary. On this plan and grid of levels were drawn the sections, and the preliminary plans, including all terraces with properly defined levels, thus ensuring a feasible and workable scheme before proceeding to working drawings. To obviate expensive excavation, all sweeping changes of level were avoided.

The two sections show that on the West, or entrance front of the house, the ground rises suddenly some 15 feet; this decided the width of the carriage court, which is as wide as the ground allows, and looks much wider on the site than the plan suggests, the central flight of steps leading to the tennis courts broadening the effect considerably. The grass terraces and tennis courts promise to be the most charming features in the garden, but cannot be presented photographically until the yew hedges have had two years more growth; for this reason a detailed description, with enlarged plans and cross-section of this part of the garden, are necessary to give an idea of the ultimate effect. Being on the West of the house and considerably above it, it was sought to keep this part of the scheme quiet and restful. There are therefore no flower borders, but broad stretches of quiet lawns surrounded by grassy slopes, and yew hedges to be cut to shape, while at right angles to the entrance, and in a line with the steps rising with the natural level of the ground, stretches a wide open grass glade with cedars planted at either side, the end of the glade being furnished with an architectural pavilion or tea house.

The tennis lawn is one hundred and twenty feet square, thus giving room for two creases which may be placed either way, with recessed curves for seats and statuary figures representing the Seasons. On the West of the tennis lawn is a wide raised grass terrace, a point of vantage for onlookers. The corner recesses make corresponding bastions on the outside, and therein are planted *Pyrus Malus floribunda*, which grace the picture with their showers of small apple-like blossom rising above the sombre green of the yew.

North of the tennis lawn, on a higher level, and partially screened by the yew hedges, is a pergola with rough stone columns connected with the garden house, which in turn communicates with the upper floor of the mansion.

The stables and motor-house are on the North, as is also the service road; but, as tradesmen generally use the road through the stable yard or by way of the kitchen

FIG. 410.—PATH FROM CARRIAGE COURT TO GARDEN, WOOD.

FIG. 411.—THE GARDEN ENTRANCE, WOOD, DEVONSHIRE.

FIG. 412.—TEA-HOUSE AT THE END OF THE GLADE, WOOD, DEVONSHIRE.

FIG. 413.—THE NORTH GARDEN, WOOD, DEVONSHIRE.

EXAMPLES OF GARDEN DESIGN.

*Garden in
granite.*

garden, the road which connects to the carriage court through the gate-house is little used except by visitors. The opportunity was seized to make a cool recessed North garden overlooked by the billiard-room, to the formation of which the plan of the house and the stable buildings lend themselves admirably.

On the South front, the main object was to merge the house into the surroundings without harshness or discord, and, looking South from the house, to secure a pleasing composition with a rich yet harmonious foreground to the beautiful home landscape beyond (Ill. No. 366). It was principally to secure the best results in this direction that the two garden houses were erected to act as frames to the beautiful picture, the fountain and figure being introduced to focus the interest surrounding the circular water-lily pond. The wide circular paved walk is reached on three sides by steps leading down to the pond. From the South side is a long flight of steps leading to the wall garden (Ill. No. 266), one of the least expensive yet nevertheless most successful parts of the domain, which is intended to mark the transition between the formal portion of the grounds and the landscape-garden and park, to which, and to the lake, the curved walk shown on the plan leads.

On a steep decline to the East side, fully twenty feet below the house level, is the old kitchen garden, which has been altered and improved beyond recognition. Being both handy and accessible, it adds additional interest to the gardens, and promises to be a much-sought-after pleasure; it therefore received that attention which always repays one when the useful and the pleasant are suitably combined. The range of plant and fruit houses, the espalier (Ill. No. 313), the yew hedges and rose borders, the wide borders of hardy perennials, the rough granite walls with slate-hooded coping over which roses and other climbers are allowed to grow, the well-trained fruit trees and borders of sweet herbs—all give beauty and interest to the whole.

GARDENS TO A CLASSIC RENAISSANCE MANSION.

Seldom is a garden designer called upon to plan terraces and gardens to accord with a house so unique as the one shown in illustration No. 415. The architects who designed such houses as this have generally left some record of their intentions regarding the gardens; but whatever may have been planned, practically nothing has been carried out, a short length of balustraded terrace being the only survival of a definite garden treatment. In the park, however, a fine avenue of elms, evidently planted at about the same date that the house was built, would seem to show that a garden and park scheme had been prepared. There is also strong evidence, in the river-like lake shown in illustration No. 259, that some capable follower of the landscape school had been consulted at a later period, and it is probable that this gentleman set out the various groups of trees in the park.

Not only are the architectural merits of the house exceptional, but the site is also, the gentle fall of the ground lending itself to that broad classic treatment which the character of the mansion demands, while the views from the house across the beautiful, well-wooded, undulating park, over the lake, and so forward to the wooded higher ground in the distance, provide quite a charming setting. Before Mr. Waring discovered the house, it had long been unoccupied, like many originally first-class residences which lose caste, and must either suffer transformation, or stand tenantless and go the way of ruin. A plan for cutting up the estate into building plots, including the destruction of the house, had actually been prepared.

To obtain an adequate idea of the lie of the ground, it is necessary to compare the plan with the perspective view noticing the drop from the centre of the terraces to the commencement of the central avenue, from which point there is a gradual fall to the lake along its entire length, which extends some 150 yards. As the perspective view suggests,

FIG. 414.

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EXAMPLES OF GARDEN DESIGN.

Thomas H. Madison Esq. 1884
in connection with the late
Dan Gibson: Architects.

TERRACE · GARDENS · FOOTS · CRAY · PLACE · SIDCUP
for S · J · WARING ESQ

FIG. 415.

there is very little cross fall, possibly 6 feet in all, this being towards the right of the picture. The garden scheme is not only helped by having a fine house as its centre, and a fall of ground which lends itself to proportionate terraces, but is also greatly assisted by the background of stately timber trees, composed of elms, oaks, sycamore, beech and Scotch firs, which are indicated in outline on the perspective view; there are also a number of fine trees, including a noble cedar of Lebanon, within the grounds, which have in great measure influenced this plan.

*Classic
Renaissance
Domain.*

The arrangement was further influenced by the laundry and the stables shown in the plan (Ill. No. 414), both of which are erections in the Georgian style of architecture, built with small red bricks, and having the typical prominent wooden cornices and eaves: really effective buildings suitable for incorporation in the general composition. On the East, the drive runs past the laundry, thence through a coppice wood beyond. This laundry is so placed as to form a fitting architectural termination to the long and effective elm avenue, near the right-hand edge of the plan. To the

FIG. 416.—ANCIENT WOODCUT OF FOOTS CRAY PLACE.

West, the drive leads with a measure of privacy between hedges to the kitchen garden and stables, the roof and cupola of which group happily amidst the trees, and are shown in illustration No. 153.

As already stated, there is some very fine timber on the North side of house and garden extending on the West round by the stables; this is indicated by the irregular-shaped plantations shown on the plan.

In the original plan of the house, the carriage court was on the South side, the wide handsome flight of stairs leading up to the entrance hall and the picture gallery being on the North; this order is now reversed, with great advantage both to house and garden, chiefly because the carriage court level is now the same as that of the entertaining floor, while on the South, the wide stairs or steps give a very fine connecting link with the gardens, which, being on a much lower level, are looked down upon from the picture gallery, which is also used as a grand parlour. Another very great advantage arising out

EXAMPLES OF GARDEN DESIGN.

*Classic
Renaissance
domain.*

of the alterations is that the gardens are now quite screened from the carriage drive, leaving the whole of the ground on three sides of the house free for their extension.

To make a success of this scheme, length and breadth of line, and plain unbroken surfaces were much more necessary than wealth of detail, and it is upon this bold simplicity that the composition depends. The several levels suggested differing garden departments, which, though intimately connected and part of one broad design, are nevertheless separate enclosures; each portion having its own special treatment and its own individual interest.

The lay-out of the South front and the extended terrace base, with its pavilions at each end, are intended to secure the proper connection which should exist between the house and garden. How far this merging of one part into another is likely to be realized is shown by the perspective view (Ill. No. 415). Those versed in garden

FIG. 417.—THE AVIARY, FOOTS CRAY PLACE.

design can picture for themselves the effect of a view from instead of toward the house, with the terracing as a foreground to the true English park, and the wide double avenue uniting the lake and its classic pavilion with the formal garden.

The central or balustraded part of the first terrace, which is old, and not supported on a sufficiently deep wall for the execution of the new scheme has been underpinned, the centre being converted into a long alcove with a circular bay, which gives the appearance of an overhanging garden. This is to be paved with flags of two colours arranged to a pattern, the balustraded wall being ornamented with lead figures, while the flat-topped supporting buttresses arranged at intervals will be finished with lead urns. The wall dividing the second and third terraces is treated in a simple manner, the coping in the former case rising only eighteen inches above the grass; this second

terrace is principally laid down in grass, to be used as tennis or croquet lawns. To this part of the gardens a good deal of colour is added by the long flower border under the terrace wall, and semicircular rose gardens at either end; the latter are backed by yew hedges with pillars and urns in front. The terrace wall, which divides the more ornate portions of the grounds from the park, is, like the second wall, treated in a simple manner, but in the central bay there is a parapet wall which rises 2 ft. 9 inches above the terrace level, with an imposing gateway leading down to the avenue.

*Classic
Renaissance
Domain.*

Leading from the Easterly half of the lawn, devoted to croquet, is a lily pond, advantageously sunk some three feet lower than the lawn.

Mention ought to be made of the reserve garden in the South-west corner, fronting the stables, which is the original kitchen garden transformed into a walled-in retreat of fruit-trees and flowers (Ill. No. 142). It is bordered on the South side by a long bowling alley. Of this alley two views are shown in illustrations Nos. 152 and 153, one looking West towards the pergola and octagonal garden house, and the other Eastwards towards the stables with the hedge and row of limes which form its South boundary.

On both the East and West sides of the domain, the same feeling of breadth is maintained by broad lawns and extended vistas, especially on the East, where the pervading keynote is struck by wide glades cut through the surrounding woodland, which all radiate from the central dome of the house and are hedged in with tree box.

Beyond the bounds of the scheme included in the plan there is a cricket ground, and the wild garden shown in illustration No. 273. A feature is also to be made of the water temple on the bank of the lake terminating the avenue; the upper part being arranged as a garden house and the under part as a boat-house. A somewhat novel arrangement for the overflow is that it falls towards the garden by a semi-circular-stepped cascade, and then returns in a culvert under the lake and into a stream in the meadows below.

A MOUNTAIN HOME.

It is with especial pleasure that the Author approaches the task of describing the grounds to Roynton Cottage, the mountain home of Sir William Lever, Bart., for, of all the gardens laid out by him, there have been few which have provided such scope for originality of treatment and, at the same time, such an incentive to meet the remarkable opportunities presented by the nature of the site and its surroundings, an incentive heightened and enlarged by the exceptionally sympathetic interest shown in the work by his Client.

Roynton Cottage, or "The Bungalow," as it is more often referred to locally, stands high up on the open fell-side above Horwich, which, with its large railway engineering works, lies down in the hollow below, some six miles from Sir William Lever's native place of Bolton.

As one approaches the site of the garden from the town, one climbs up and up by a remarkably engineered road, laid out by the owner of the Cottage, with gorse and brake rising up on the one side, and falling steeply away on the other in precipitous banks, and with an ever-widening prospect spread out at one's feet; the keen mountain air in one's face or a breeze blowing straight from the Irish Sea, with nothing between it and us to break its force or tone down its exhilarating freshness.

Arrived at the Cottage, and standing on the top terrace by the telescope mounting, almost exactly 1,000 feet above sea level, a wonderful prospect that could rarely be equalled in these Islands for extent and variety lies before us. Immediately below, and stretching away into the middle distance to the right, are the huge reservoirs which supply Liverpool with water, and which possess, at least at this distance, all the æsthetic qualities of large natural lakes, and, beyond these, for those whose sight is keen enough,

FIG. 418.

stretch range after range of hills to the Welsh Mountains on our left front and those of the English Lake District more to our right. *Mountain Home.*

The names engraved on the mounting for the large telescope on the terrace will give a more vivid idea of the range of view than any description. The more important of these, reading from South to North, are:—Warrington, Port Sunlight, New Brighton (the tower at which place is visible by the naked eye in very clear weather), Snowdon, Llandudno, Anglesey, Southport, Lytham, Douglas, Blackpool, Fleetwood, Wigtown, Preston, Bowfell, Skiddaw, and Helvellyn.

The country all round the Liverpool water-works, including the water-shed or collecting ground for the reservoirs, is, of course, preserved by the Authorities in order to insure that the supply shall remain uncontaminated, and thus there is no fear of this wonderful prospect being deteriorated—it could never be spoiled—by the erection of large works or other eye-sores. In addition to this, Sir William Lever has given a large tract of ground sloping into the valley to his native town of Bolton for a public park, and it is being left largely in a state of nature but for the formation of the necessary roads and other features, such as refreshment rooms, essential to a park at such a distance from the town, so that it blends perfectly with its rugged surroundings.

We may incidentally remark that there is a splendid electric tram service from Bolton to within a short distance of the park gates, so that, notwithstanding that it is six miles from that town, it is much appreciated and regularly used by a very large number of holiday-makers, not only from Bolton itself, but also from Chorley and the other surrounding Lancashire towns.

To return to the consideration of the prospect from the new garden, we find the view on the opposite or East side of the Cottage, though not so extensive, just as rugged and romantic, for the steep fell-side slopes up in one unbroken precipitous sweep to the summit of Rivington Pike, where it is crowned with a square battlemented tower, which forms a landmark for many miles round, and is wonderfully effective as viewed from down in the valley in the neighbourhood of Horwich. The summit of the Pike and a way up to it have also been dedicated to the public by the owner of the Cottage.

From the foregoing description it will be seen that all the surroundings of the new garden would be rugged and wild in the extreme, and that, if it were to harmonize with them and fall properly into its place and express their spirit, it must not only receive exceptional breadth of treatment at every point, but must, in its architectural details, be free from the slightest suspicion of hyper-cultivation. How far this result has been attained must be left very largely to the reader to judge from a comparison of the plan with the accompanying photographs. As will be seen, the native stone has been quarried and used everywhere, and this alone gives a pronounced local note which the heavy, rugged style of building which has been adopted and the brown-coloured slates used, have still further enhanced.

The great need of this garden, high up on the treeless uplands, was, of course, shelter. This has been obtained by means of the pergolas shown in more than one of the photographs, and by working in a little shelter for a seat wherever possible. Two of these are shown in illustration No. 423, and a careful examination of the interior of the pergola in illustration No. 420 will reveal one of several recesses in the back wall which have been contrived out of waste space and roofed over with rough thick glass, as otherwise they would have been very dark. Furnished with a few garden chairs and surrounded with the greenery clothing the pergola, they make very cosy shelters from which to look out between the rough-built stone pillars of the pergola at the endless succession of hill after hill and pleasant valley between.

Apart from these small contrivances, however, there is one portion of the grounds expressly laid out to provide shelter. This is the small cloister-like enclosure to the

EXAMPLES OF GARDEN DESIGN.

FIG. 419.—THE NORTH LAWN AND PERGOLA, ROYNTON COTTAGE.

FIG. 420.—INTERIOR VIEW OF ABOVE PERGOLA, SHOWING SHELTER.

EXAMPLES OF GARDEN DESIGN.

FIG. 421.—SUMMER-HOUSE ON TERRACE, ROYNTON COTTAGE.

FIG. 422.—TOWER AND LOGGIA, ROYNTON COTTAGE.

FIG. 423.—SEAT COVERS AND AVIARY, ROYNTON COTTAGE.

FIG. 424.—THE LONG STEPPED WALK, ROYNTON COTTAGE.

EXAMPLES OF GARDEN DESIGN.

Mountain Home.

East of the main part of the house, known as the Garth, and in the centre of which stands the dovecote shown in illustration No. 233. As will be seen from the plan, a pergola runs all round it, which, however, had not become covered at the time when the illustration just referred to was made. It is quite curious to see the delight of the more discriminating of the hundreds of visitors who come to see these gardens, when, after being shown all round the other portions of the grounds, they are suddenly introduced, by the opening of a door in the back wall of a pergola, to this new feature, which strikes exactly the note required to complete the composition, with its quiet air of seclusion and shelter from bleak winds, its cooing doves, and the rippling reflections in the little basin at the base of their cote to give a sense of brightness and freshness.

There are doves and pigeons everywhere, and their introduction was a very happy thought, giving, as it does, a sense of life and habitation and fluttering movement to this domain among the solitary fells. They will be seen in several of the illustrations, and two of the smaller dovecotes, quaintly roofed square erections, are shown in the background of illustration No. 424. In the accompanying photograph of the tower and loggia, which punctuate the Northern extremity of the grounds, an arched opening with a screen containing pigeon holes will be found in the centre of the photograph and another to the extreme right, and as will be seen on reference to the plan, these form a part of a long series of such openings which grace this enclosing wall and relieve its bare face from monotony.

The planting of this garden was, of course, a special problem in itself, which could only be solved by many experiments. Everyone interested expressed the decided opinion that nothing whatever except the native heather would or could be got to grow by any means whatsoever. However, such Job's comforters have been abundantly proved to be wrong, and now considerably over one hundred and fifty thousand trees and shrubs have been planted and are doing well, principally, of course, such things as pines and broad-leaved hollies, while rock plants, among which the various saxifrages are conspicuous, adorn the rough stonework in the walls, steps and pergolas. The hardiest climbing roses have done surprisingly well, though, of course, the season is very late in these as in other things, and, at the time the photograph of the summer-house in illustration No. 421 was taken, a Dorothy Perkins rose was providing a most beautiful colour contrast against the grey stone and roof and the purple heather, which made one feel acutely the limitations of ordinary photography.

In several places, in forming the gardens, the native rock has been laid bare, and in one case a little cave has been constructed in a very natural manner, while, at another place, the presence of a tiny mountain rill has been taken advantage of to form a rocky waterfall with a series of large pools below.

The way in which the exceptional nature of the site has been taken advantage of to justify original treatments, which, though they would no doubt appear bizarre in other cases, fall naturally into their place in their rugged surroundings, is forcibly shown in the photograph of the bridge connecting the grounds with Rivington Park, which, as already stated, has been given to the public by Sir William Lever.

This example shows, more clearly perhaps than any other, the necessity of adapting the gardens to the conditions prevailing on the site, instead of commencing their design and construction with preconceived ideas as to what is right and proper or what should be included. The result could not have been so satisfactory both to the Author and his Client had not each feature incorporated in the scheme been the logical outcome of an endeavour to meet a felt need in the simplest and most efficient manner, coupled with the endeavour to strike a homely local note by the use of those materials abounding in the site and to employ them in the manner to which their physical properties best fitted them.

EXAMPLES OF GARDEN DESIGN.

FIG. 425.—ENTRANCE LODGE, ROYNTON COTTAGE.

FIG. 426.—BRIDGE CONNECTING ROYNTON COTTAGE WITH PUBLIC PARK.

TO VIEW
ADAPTED

EXAMPLES OF GARDEN DESIGN.

FIG. 427.

EXAMPLES OF GARDEN DESIGN.

A HILLSIDE GARDEN.

Wood Hall, Cockermouth, which we have taken as a typical example of a hillside garden, is situated on one of the most romantic spots in Great Britain. Its beauty is not, however, of that haphazard order which one usually associates with the word picturesque. The view from the South front is fine and spacious, with a disposition of watered vale and rolling woodland, of deep declivities, and a background of Lakeland mountains, all rising from rich flat meadows and broken by the sinuous lines and silver streaks of the river Derwent; whilst away to the West are the romantic ruins of Cockermouth Castle. No wonder that Turner loved the view from Wood Hall, and selected it as the subject of one of his great pictures; the prospects suggest the "Grand Manner" loved by the doyens of English Landscape Painters.

A Hillside Garden.

FIG. 428.—SUNDIAL BASTION AND PERGOLA, WOOD HALL, COCKERMOUTH.

Wood Hall is one of those domains which, as domains, have existed almost from time immemorial, but unfortunately, as in so many other instances, that reverence for the antique which is so universal in those who love a garden has little beyond tradition and history to feed upon, as the last of the ancient monastic buildings disappeared long ago.

It is a far cry from the time when Waltheof, the first Lord of Allerdale, gave Wood Hall, together with other property, to the Priory of Guisborough, and since then, on the dissolution of the monasteries, Henry VIII. sold it to Henry Tolson, Gent., the ancestor of a line which held it for many years, until it fell into the hands of the Fisher family, who subsequently sold it to the present proprietor, Edward T. Tyson, Esq., J.P.

The present mansion was commenced during the Fisher occupancy, and after having been added to and altered more than once, was converted into the existing commodious

EXAMPLES OF GARDEN DESIGN.

FIG. 429.—CONNECTION BETWEEN HOUSE AND GARDEN, WOOD HALL, COCKERMOUTH.

FIG. 430.—CONNECTION BETWEEN FORMAL AND INFORMAL, WOOD HALL, COCKERMOUTH.

EXAMPLES OF GARDEN DESIGN.

country seat by the present owner, previous to laying out the grounds as shown on the accompanying photographs.

A Hillside Garden.

Wood Hall occupies the slope on the North side of the valley, and has therefore a full Southern exposure. Formerly the house was of much more modest dimensions, but, following the English tradition, each succeeding owner has enlarged and re-modelled, until to-day Wood Hall is a fairly representative specimen of an English country home.

The present owner had, with great taste and discretion, and under the supervision of his Architect, the late Mr. Ferguson, of Carlisle, added a new entrance hall on the South front, and the billiard-room shown in illustration No. 427. On the West, behind the house and crowning the highest part of the grounds, are the old stables and farmery, and behind the billiard-room sundry strips and plots of ground surrounded by walls at

FIG. 431.—THE APPROACH TO WOOD HALL, COCKERMOUTH.

conflicting angles, rendering this view of the grounds and gardens very unsatisfactory, and without any reasonable recompense in the shape of "cropping" ground.

No alterations have been made to the total area or outer boundaries. The long strip forming the kept garden is almost equally divided into an upper and lower garden by the drive, which enters the enclosure by a lodge entrance about one hundred feet West of the area shown on the plan. The gardens, the levels of which may be judged by the two sections (Ill. No. 427), stands almost in the centre of a beautifully undulated and well-wooded park. Partly by accident and partly by definite planning, the trees immediately round the gardens give great support to it, and not only secure that dominant note of continuity which only well-grown timber can give, and which is typical of the English domain, but, by their positions in relation to the principal view points in the garden, and also from the windows of the house, add enormously to the value of the vistas.

FIG. 432.—PERGOLA AND PARK ENTRANCE, WOOD HALL, COCKERMOUTH.

FIG. 433.—THE SUMMER-HOUSE, WOOD HALL, COCKERMOUTH

EXAMPLES OF GARDEN DESIGN.

The first aim in the re-modelling of the gardens was to secure a sense of space, and also connecting lines which would secure some architectural connection between the house and its setting. There was the further consideration that, as in most other hillside gardens, there were few walks which ministered to one's comfort or leisure. In short, to walk round the garden was an exertion.

A Hillside Garden.

The shape and contours and obliquities of line on this Estate are so unusual that no very clear idea can be obtained from the plan of the great difficulties to be solved before any degree of order could be evolved, but a comparison of the plan (Ill. No. 427), with the photographs showing the improvements which have been effected, will make it at once apparent that, notwithstanding the difficulties to be overcome, results combining practical as well as æsthetic advantages have been attained. The level spaces immediately round the house, but especially on the South and West fronts, have been considerably expanded, and the line and gradients of the carriage drive improved. Then the terrace on the South front has been extended, and a pergola constructed on the East side extending from the carriage court to the park postern gate. This latter feature has secured a balanced effect on what was previously the least satisfactory side of the site. Instead of the narrow winding walks on the West side, good wide paths, some of them flagged, have been constructed and, at one of the finest view-points, the garden-house shown in illustration No. 433 has been erected. Another fine view-point has been taken advantage of by the insertion of a three-arched alcove under the West end of the South wall of the kitchen garden.

On a garden site like the one at Wood Hall there is a great opportunity for wall-gardening, and this feature has been made the most of, the walls along the side of the drive, pergola, and several of the walks being planted with a choice variety of Alpines and other wall plants, whilst under the terrace and on the lower side of the drive a large amount of rock from a local quarry has been added to supplement the several outcrops on the site. In many cases these have a background of rhododendrons, azaleas, and a choice variety of kalmias, andromedas, Alpine rhododendrons, and ericas. In other parts there are backgrounds of choice Japanese maples interspersed with and relieved by compact-growing conifers. The rock garden under the terrace is devoted to Alpines, and in addition some of the better herbaceous plants have been added to give mass and a connected effect.

As the garden in its present form is scarcely a year old, several of the views lack the softening touch which age will bring, and, though the scheme is full of promise, it is almost impossible so to illustrate it as to give the reader any idea of the ultimate possibilities. The nature of the surrounding country has also to be taken into consideration before one can form any adequate conception of the scheme as a whole from the photographs. The exceptional nature of these has already been hinted at, and the ancient castle, which adds so greatly to the interest of the views, can be seen in the middle distance of illustration No. 431. The site is on the edge of the English Lake District, and therefore is surrounded with country which partakes very largely of the rugged picturesqueness which is its distinguishing feature, and this has had its influence on the design adopted. In order that it might harmonize with its surroundings, the architectural details were kept solid to a degree which would, in a less rugged neighbourhood, have been heavy and perhaps slightly cumbersome, but which here, when clothed with greenery, will fall naturally into place, grace and lightness being obtained by the use of statuary at specially selected points where it would mark the centre of a bastion or the termination of a balustrade. The photographs can, however, be left to speak for themselves, and will, together with the plan, give a very good idea of the scheme as a whole, and the variety obtained within quite a small area.

FIG. 434.

PROPOSED TERRACE GARDENS
at RUSHTON HALL, NORTHANTS

*Thomas H. Mawson. Hon. A.R.B.A.
London and Lancaster*

FIG. 435.

EXAMPLES OF GARDEN DESIGN.

AN OLD TUDOR GARDEN RESTORED, REMODELLED AND ENLARGED.

*An old
Tudor
Garden
restored.*

Of the many stately homes which adorn this county of great country seats, Rushton Hall is one of the noblest, and, from the point of view of the antiquarian with an appreciation for Architecture, certainly one of the most interesting and important, for it still retains much evidence of the fine architectural style in which the great men of the Tudor and Stuart periods built their homes, and in which they expressed so much of the state and dignity surrounding their positions as peers of the realm.

That part of the house situated at the S.W. corner, now converted into a library, probably dates from mediæval times, the elevation facing West being built in rough broken coursed rubble and having small lancet windows. Rushton Hall was, however, best known to architects for its wonderful Jacobean strapwork carried out with much imaginative skill by the clever stoneworkers of that time. At a rather later date the old L shaped main façade seen in the perspective view, was converted into a square large enough to enclose the formal panel garden shown on the plan. The later work is much more restrained in character than the earlier parts, and has added enormously to the collective effect of Rushton, the connecting corridor and raised terrace between the South and West wings introducing a feature which is most happily conceived, allowing not only a fine perspective view of the house, but at the same time admitting the morning sun.

The present tenant, J. J. Van Allen, Esq., has carried out many alterations and improvements, which, though destroying some of its ancient charm, have at the same time modernised the house and made it more hygienically perfect.

When the Author first visited Rushton there was no suggestion to the eye in the undulating lawns of a terraced garden immediately round the house, but that such gardens had at one time existed was amply proved by the outlying portions, such as Dydens Walk, the Wilderness, and the Kitchen Garden, and when the foundations were dug for the new terraces, the old walls, with their beautiful balustrades, pillars and stone urns were brought to light, and records preserved. These old walls were curiously enough within a few feet of the lines adopted for the new ones, the levels of the terraces being approximately the same. Their destruction was probably suggested by Capability Brown, or one of his intimates, who at the same time formed the lake and the landscape garden beyond, and who also planted the clump of trees in the park.

In destroying these gardens the object aimed at was to give a proper setting and base to the mansion, and at the same time to weave the wilderness and later landscape part into a well-connected and harmonious whole. This necessitated the large scheme of terraces shown in the illustrations, and also the restoration of much, both in the old formal scheme and the landscape gardens, which years of neglect had allowed to grow out of recognition. The large lake covering many acres had silted up and become a morass overgrown with willows and bogweeds, creating an unhealthy area partly covered with shallow stagnant pools which under certain atmospheric conditions were offensive. All this area had to be cleared out at great cost. This will give an opportunity for the construction of the formal pond shown in the perspective view, which, at the time of writing, has not been commenced. In the Park all the long vistas had been closed up by trees of forty or fifty years' growth. These had to be cleared and other plantations arranged to secure a continuity of effect. In the wilderness, the hedges by which the different portions were surrounded had overgrown the glades, and in other parts had been entirely removed. All that the Author attempted for these two sections of the scheme was the restoration of the plan originally laid down.

Rushton thus provides an example of the all too numerous English gardens where re-planning has become necessary through the ruin wrought by succeeding fashions in garden design, and by the neglect of the two outstanding qualities of the English garden, viz., restraint and high keeping.

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